

**REPORTS OF FEDERAL RESERVE CONSULTANT
COMMITTEES ON ECONOMIC STATISTICS**

HEARINGS

BEFORE THE

SUBCOMMITTEE ON ECONOMIC STATISTICS

OF THE

**JOINT COMMITTEE ON THE ECONOMIC REPORT
CONGRESS OF THE UNITED STATES**

EIGHTY-FOURTH CONGRESS

FIRST SESSION

PURSUANT TO

**SEC. 5 (a) OF PUBLIC LAW 304
79TH CONGRESS**

—————
JULY 19 AND 26, OCTOBER 4 AND 5, 1955
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Printed for the use of the Joint Committee on the Economic Report



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JOINT COMMITTEE ON THE ECONOMIC REPORT

(Created pursuant to sec. 5 (a) of Public Law 304, 79th Cong.)

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REPORTS OF FEDERAL RESERVE CONSULTANT COMMITTEES ON ECONOMIC STATISTICS

TUESDAY, JULY 19, 1955

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT COMMITTEE ON THE ECONOMIC REPORT,
Washington, D. C.

The Subcommittee on Economic Statistics of the Joint Committee on the Economic Report met at 10 a. m., the Honorable Richard Bolling (chairman) presiding.

Present: Representatives Richard Bolling and Henry O. Talle, and Senator John Sparkman.

Others present: Ralph A. Young, Director of the Division of Research and Statistics, Federal Reserve Board; Raymond T. Bowman, Office of Statistical Standards, Bureau of the Budget; and John W. Lehman, clerk.

The CHAIRMAN. The subcommittee will be in order.

This morning the Subcommittee on Economic Statistics holds the first of five panel discussions at which a series of consultant committees sponsored by the Board of Governors of the Federal Reserve System will report on their work in reviewing statistics of inventories, savings, consumer expectations, plant and equipment expectations, and general business expectations.

The Joint Committee on the Economic Report has long been interested in the provision and maintenance of adequate and accurate economic data for public and private policymaking. In the committee's report on the 1954 Economic Report of the President it directed the establishment of a continuing subcommittee on economic statistics. This subcommittee, under the chairmanship of Representative Henry O. Talle, held hearings almost exactly a year ago on the adequacy of economic statistics and filed a unanimous report with the full committee. This report, which was subsequently submitted to the Congress by the full committee (H. Rept. 2628), included the following recommendation:

9. The Federal Reserve System might well expand its statistical checks and analysis programs where it has special interest and competence.—The subcommittee is requesting the Federal Reserve to explore, in cooperation with executive agencies, the adequacy of present statistics in three basic areas: (1) Inventories; (2) savings; (3) consumer and business expectations.

This request includes a thorough review of and basic research into concepts, existing data, sources and procedure for improving these statistics.

On December 14, 1954, the Board of Governors of the Federal Reserve System notified the subcommittee that this recommendation was acted upon favorably. Five task groups of distinguished analysts were established by the Federal Reserve Board to carry out the requested

studies and were asked to try to complete their findings by June 30 of this year.

This morning we hear from the first of these task groups, the Consultant Committee on Business Plant and Equipment Expenditure Statistics. A week from today, on July 26, we will hear from the task group on savings statistics. The other studies will be presented during a series of hearings in early October.

I am sure I speak for Senator Sparkman, Representative Talle, and Senator Carlson who was formerly a member of this subcommittee, when I say how much we appreciate the cooperation of the Federal Reserve Board and the technicians in carrying out this important work. I might also say that we have asked Mr. Ralph Young, Director of the Division of Research and Statistics of the Federal Reserve Board, and Mr. Raymond T. Bowman, Assistant Director for Statistical standards of the Bureau of the Budget, to sit with the panel this morning.

Mr. Terborgh, Chairman Martin has already transmitted to the subcommittee the full report of your consultant committee. I suggest you proceed with the opening presentation in your own way, introducing the other members of your panel either now or as they may be called upon. At the conclusion of your opening statements, we will proceed to a general discussion among and between the panel and the members of the subcommittee. Before you begin, however, perhaps Congressman Talle would like to have a word.

Mr. TALLE. Mr. Chairman, my first word is I wish you well as chairman of this important subcommittee.

I may say for myself that I enjoyed the chairmanship during the 83d Congress. I enjoyed it because I had good people with me on the committee, and we had the cooperation of the public, industry, both labor and management, farm organizations, business, professional statisticians, and departments and agencies of the Federal Government. It was an excellent illustration of many people working together for a common cause, and a very important cause.

I am glad to be here with you this morning, Mr. Chairman, and I join with you in expressing gratitude to the Federal Reserve Board for their continued and effective cooperation.

Thank you.

The CHAIRMAN. Thank you, Congressman Talle.

At this point I should like to insert in the record the full report of the Consultant Committee on Business, Plant, and Equipment Expenditure Expectations organized by the Board of Governors of the Federal Reserve System at the request of the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, July 1955.

(The material referred to follows:)

**STATISTICS ON
BUSINESS PLANT AND EQUIPMENT
EXPENDITURE EXPECTATIONS**

**REPORT OF THE CONSULTANT COMMITTEE
ON BUSINESS PLANT AND EQUIPMENT
EXPENDITURE EXPECTATIONS**

*Organized by the Board of Governors
of the
Federal Reserve System
at the request of
the Subcommittee on Economic Statistics
of the Joint Committee on the Economic Report*

July 1955

CONGRESS OF THE UNITED STATES
Joint Committee on the Economic Report

August 6, 1954

Mr. William McC. Martin
Chairman, Board of Governors
Federal Reserve System
Washington 25, D. C.

Dear Chairman Martin:

When the Subcommittee on Economic Statistics announced its plans for exploratory studies and hearings several weeks ago, you indicated the System's desire to cooperate in this endeavor. We have held two days of hearings and we note with satisfaction the contribution of the Federal Reserve staff to the materials submitted by the Bureau of the Budget. We also appreciate the help given at the hearings by Dr. Winfield Riefler, your assistant.

The Subcommittee has issued the attached progress report which contains a number of findings and recommendations. Recommendation No. 9 states:

The Federal Reserve System might well expand its statistical collection and analysis programs where it has special interest and competence. The Subcommittee is requesting the Federal Reserve to explore, in cooperation with other Executive agencies, the adequacy of present statistics in three basic areas: (1) inventories; (2) savings; and (3) consumer and business expectations. This request includes a thorough review of and basic research into concepts, existing data, sources and procedure for improving these statistics.

We hope that the Board will proceed with these specific studies as requested. We appreciate the need for basic research in these areas and that this will take time. We hope, however, that because of the importance of these statistics the work may proceed expeditiously and that the reports may be submitted as soon as possible.

In the absence of Subcommittee members from Washington during the recess, we would suggest that your Staff consult with the Staff Director of the Joint Committee on the Economic Report with respect to the development of these reports.

In addition to seeking the cooperation of the Office of Statistical Standards and the Department of Commerce, we know that you will also be conferring with other executive agencies and private organizations who are in a position to make a contribution.

Sincerely yours,

(Signed) HENRY O. TALLE, *Chairman*
Subcommittee on Economic Statistics

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM

December 14, 1954.

The Honorable Henry O. Talle, Chairman,
Subcommittee on Economic Statistics,
House of Representatives,
Washington 25, D. C.

My dear Mr. Talle:

This is in reference to Governor Szymczak's letter of August 11 in which he indicated to you that the Board would explore possibilities of providing your Subcommittee on Economic Statistics with an evaluation of available statistical information in the fields of savings, business inventories and business and consumer expectations. After considerable study of the matter and several conferences with members of the staff of the Joint Committee and the interested Executive agencies, the Board determined that it could make the most valuable response to your Subcommittee's request by organizing five task groups, composed of independent experts drawn from business, labor and academic circles, who would be asked to prepare evaluations of the adequacy of available statistical information in their special areas of assignment.

I am happy to be able to report to you at this time that a very distinguished group of experts has agreed to serve on these committees. Dr. Raymond Goldsmith of the National Bureau of Economic Research will head the committee to evaluate savings statistics, Dr. J. Frederic Dewhurst of The Twentieth Century Fund will be chairman of the committee on inventory statistics, Professor Arthur Smithies of Harvard University has undertaken the chairmanship of the committee on consumer expectations, Dr. Martin Gainsbrugh of the National Industrial Conference Board has agreed to be chairman of a committee on general business expectations, and Dr. George Terborgh of the Machinery and Allied Products Institute will be chairman of a committee on plant and equipment expenditure expectations. It seemed highly desirable to us to break this analysis of the available information on business expectations into these two categories since they involve different methodological techniques and present somewhat different problems. A complete list of the task groups is attached for your information.

In each case we have indicated to the members that we hope to have final reports by June 30, 1955. So far as we can ascertain now it will be possible for all the committees to meet this deadline. I should add, however, that in dealing with experts of the intellectual caliber and integrity that have been assembled here, both the Board and your Subcommittee must recognize the

possibility that the individuals concerned will be reluctant to release a report until they are completely satisfied as to its accuracy and completeness. Therefore, in order to get the very best results, we must be prepared to yield to postponements if necessary.

* * *

The Board is very hopeful that this approach will produce a group of reports which will represent a real contribution to knowledge and understanding of the problems of data collection and interpretation and that the reports will serve as a basis for improvement of both public and private statistical programs in these areas over the years ahead.

Sincerely yours,

(Signed) Wm. McC. MARTIN, JR., *Chairman.*

LIST OF TASK GROUPS

Committee on Savings Statistics:

Raymond Goldsmith, Chairman—National Bureau of Economic Research
 Solomon Barkin—Textile Workers Union of America—Congress of Industrial Organizations
 Simon Kuznets—Johns Hopkins University and National Bureau of Economic Research
 James J. O'Leary—Life Insurance Association of America
 Roy L. Reiersen—Bankers Trust Company
 Edward Shaw—Brookings Institution and Stanford University
 Dorothy S. Projector, Secretary—Federal Reserve Board

Committee on Consumer Expectations:

Arthur Smithies, Chairman—Harvard University
 Guy H. Orcutt—Harvard University
 Samuel Stouffer—Harvard University
 James Tobin—Yale University and Social Science Research Council
 Hazel Kyrk (retired) University of Chicago
 Harold C. Passer—Eastman Kodak Company
 Bert Seidman—American Federation of Labor
 Vernon G. Lippitt, Secretary—Harvard University

Committee on Inventory Statistics:

J. Frederic Dewhurst, Chairman—The Twentieth Century Fund
 Lester Kellogg—John Deere & Co.
 Moses Abramovitz—Stanford University and National Bureau of Economic Research
 Joseph K. Heyman—The Trust Company of Georgia
 Mrs. Ruth Mack—National Bureau of Economic Research
 William Shaw—E. I. duPont de Nemours
 Arthur L. Broida, Secretary—Federal Reserve Board

Committee on General Business Expectations:

Martin Gainsbrugh, Chairman—National Industrial Conference Board
Orin E. Burley—University of Pennsylvania
Sanford Parker—Fortune Magazine
Ashley Wright—Standard Oil Company of New Jersey
Elmer Bratt—Lehigh University
Albert Hart—Columbia University
Millard Hastay, Secretary—National Bureau of Economic Research

Committee on Plant and Equipment Expenditure Expectations:

George Terborgh, Chairman—Machinery and Allied Products Institute
Walter Hoadley—Armstrong Cork Co.
Irwin Friend—University of Pennsylvania
Miles L. Colean—Consulting Economist, Washington, D. C.
William Butler—Chase National Bank
Paul B. Simpson, Secretary—Federal Reserve Board

LETTERS OF TRANSMITTAL

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM

July 11, 1955

The Honorable Richard Bolling, Chairman,
Subcommittee on Economic Statistics,
Joint Committee on the Economic Report,
House of Representatives,
Washington (25) D. C.

Dear Mr. Bolling:

In fulfillment of the request made of the Board by your Subcommittee for an evaluation of gaps in available statistical information covering the fields of savings, business inventories, and business and consumer expectations, there are enclosed copies of the reports of three of the five task groups which the Board organized for the purpose.

The completed task group reports transmitted with this letter are:

1. Report of the Consultant Committee on Savings Statistics;
2. Report of the Consultant Committee on Plant and Equipment Expenditure Expectations;
3. Report of the Consultant Committee on Consumer Expectations.

The report of the Consultant Committee on General Business Expectations is scheduled for completion by August 1. The report of the Consultant Committee on Inventory Statistics is expected to be completed by October 1. These reports will be transmitted to you as soon as received.

The reports are in the same form as submitted to us by the consultant committees concerned. Prior to the hearings to be held by your Subcommittee, the task groups may wish to make minor modifications or editorial changes, but the text will remain substantially unchanged.

If it would be helpful to your Subcommittee in getting the widest circulation and use of these reports, the Board would be glad to

consider publishing them in pamphlet form, apart from the hearing publication. This form of publication would make the reports more readily available to interested public and private organizations and to university and other interested specialists and individuals.

Sincerely yours,

WM. McC. MARTIN, JR., *Chairman*

June 22, 1955

Mr. William McChesney Martin, Jr.
Chairman,
Board of Governors of the
Federal Reserve System
Washington, D. C.

Dear Mr. Martin:

I have the honor to transmit herewith the unanimous Report of the Committee on Business Plant and Equipment Expenditure Expectations.

Respectfully yours,

(signed) GEORGE TERBORGH, *Chairman*
WILLIAM F. BUTLER
MILES L. COLEAN
IRWIN FRIEND
WALTER E. HOADLEY, JR.
PAUL B. SIMPSON, *Secretary*

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STATISTICS ON BUSINESS PLANT AND EQUIPMENT EXPENDITURE EXPECTATIONS

INTRODUCTION

It is appropriate to begin this report with a brief discussion of the problem with which it is concerned.

Nature of the problem. Business plant and equipment expenditures are not only important in their own right, running as they do to an annual figure in excess of \$30 billion; they are a highly significant indicator of economic trends. It is important, therefore, to obtain the best possible measures of plans and expectations for such expenditures.

The importance of measuring plans and expectations, as distinguished from the expenditures themselves, arises from the lead time involved. Capital goods have a long production cycle, especially buildings and structures, commonly referred to as "plant." Here the lag of actual expenditures behind the commitment to undertake the project (the signing of the construction contract or the start of force account work) must average several months. Even for equipment, the average lag of expenditures behind the commitment (the placement of orders with equipment suppliers) is substantial. It follows that figures on expenditures run far behind the flow of commitments.

But this is not all. The flow of commitments, as evidenced by construction contracts and orders for equipment, in turn runs behind the flow of decisions to enter into commitments. Again the lag is greater in the case of plant construction. Between the decision to go ahead with a project and the letting of the construction contract there is normally a period of weeks, more likely of months, devoted to the preparation of detailed specifications and working drawings and the selection of the contractor. Even for equipment, there is usually some lag between the decision to buy and the placement of the order with the supplier, its length depending on the extent to which the necessary engineering work and negotiations have been completed at the time of the decision.

In addition to the lag of expenditures behind commitments, and of commitments behind go-ahead decisions, there is, of course, a lag of the decisions themselves behind the exploratory and planning activities that lead up to them. This preliminary work may go on for months, and in some cases for years, before a project gets the green light. Much of it relates, of course, to projects that never do get clearance.

It is obvious that if we are seeking lead series in this field we should attempt to tap this progression from tentative planning to firm decisions, to commitments, to expenditures, at the earliest point or points at which reliable indicators are obtainable. This is in fact the assignment to which the Committee has addressed itself.

Scope of the project. It may be well before proceeding further to say a word about the scope of the project. The Committee accepted its assignment subject to three agreed limitations. (1) Its field of study would be confined to *business* expectations only. Thus it would have no responsibility for the expectations of governments, nonprofit institutions, or consumers. (2) Within the field of business, it would be concerned only with measures of *expectations*. It would not undertake to review the available statistical series on past plant and equipment expenditures, except as this was necessary for an appraisal of the data on expectations. (3) It was not undertaking a research project, but merely an exploratory survey, the purpose of which was to develop promising leads and suggestions to be followed up by others.

The Committee has proceeded in accord with this conception of its role. It has held several meetings, at which it has conferred at length not only with the compilers of existing series on plant and equipment expenditure expectations but with other authorities in the field. It has drawn on their wisdom and experience as well as on its own discussions for the recommendations submitted herewith.

Organization of the report. The body of the report falls into three main divisions. The first deals with expectations for the purchase of equipment, the second with expectations for plant construction, and the third with expectations for capital expenditures in total, including both plant and equipment.¹

¹The first section has been the primary responsibility of Mr. Terborgh; the second, of Messrs. Colean and Hoadley; the third, of Mr. Friend (with an assist on farm expenditures from Mr. Butler).

For convenience, the report summarizes the recommendations of the three sections below. But this is for convenience only. It should be emphasized that these proposals must be appraised in the context of the analysis and discussion from which they are drawn.

RECOMMENDATIONS

Equipment purchase expectations

- (1) A new monthly series should be developed on orders, shipments, and unfilled orders for capital equipment.
- (2) The desirability should be explored of compiling quarterly forecasts of new business by capital equipment producers.
- (3) Also deserving of exploration are the possible advantages and the feasibility of a series on new authorizations for capital commitments.

Plant construction expectations

- (1) Improvements should be made in the reporting of building permits so as to extend coverage and develop more accurate estimates of the real cost of proposed work. The lag in publication should be reduced.
- (2) Special surveys should be made of anticipated expenditures for construction by State and local government bodies and by public utility companies.
- (3) Private contract reporting agencies should be encouraged to carry on improvements in their data and should be urged to adopt the classification system used by the Department of Commerce.
- (4) Encouragement should be given to efforts to develop data on future construction from reports on work in the planning stage in architects' offices.
- (5) A study should be made of the feasibility of obtaining data on mortgage loan commitments from lending institutions as a means of obtaining information on anticipated construction.

Plant and equipment expenditure expectations

- (1) The sample coverage of the data on plant and equipment expectations should be expanded to fill in the more significant

gaps, and the desirability of modifying blowup procedures should be investigated.

- (2) Detailed tests should be carried out periodically to check the predictive accuracy of the data.
- (3) Special surveys should be conducted to study the factors affecting the predictive accuracy of the data, as well as factors affecting investment decisions generally.
- (4) The feasibility of providing additional breakdowns of plant and equipment expenditure expectations should be investigated, with initial emphasis on improving the available data segregating plant and equipment.
- (5) The desirability of altering the timing of collection of the annual survey data on expectations, and changing the period covered by the quarterly data, should be explored.
- (6) The predictive value of longer term capital programs, i.e., those covering more than one year, should be further studied.
- (7) Finally, it is recommended that an exploratory survey of farmers' intentions to invest in plant and equipment be carried out to determine the value of such information to supplement the available data covering nonagricultural business.

I. EQUIPMENT PURCHASE EXPECTATIONS

As indicated in the Introduction to this report, the object of the inquiry is to attempt to measure the planning-decision-commitment-expenditure progression at the earliest points at which reliable indicators are available. We refer to "points," because no single point of measurement is sufficient in itself. In general, the earlier we tap the progression, the less the statistical reliability of the indicator; the later the tap, the less its lead value. We must rely on a variety of measures derived from different approaches and relating to different stages in the progression. As we gain experience in the correlation and interpretation of these measures, they should provide in combination a better gauge of expectations than any one of them alone.

In the case of equipment expectations, three possibilities appear to deserve consideration, in addition to the measure discussed in section III of this report: (1) authorizations for the purchase of equipment; (2) equipment orders placed with suppliers; and (3) forecasts by suppliers of orders to be received.

1. Purchase authorizations. Most large- and medium-sized companies nowadays prepare capital budgets at least once a year. These budgets are themselves a highly useful indication of expenditure intentions, and will be dealt with in another section of this report. They are not, however, firm commitments. They are actualized by specific authorizations or appropriations as the year advances. The present question is the feasibility of compiling a current series on authorizations.

One problem that arises with this approach is whether it is possible to define authorizations in such a way as to yield comparable results from company to company. There is a real difficulty here. Administrative procedures and practices differ. In some cases authorizations cover entire projects the execution of which extends over several years; in others they cover only the initial stages of such projects. Some authorizations generate immediate commitments and may be regarded as firm and final; others foreshadow deferred commitments that may not materialize at all if conditions change. Moreover, there are often successive authorizations of increasing degree of finality for the same project, with the attendant risk of double counting.

Another question concerns the availability of authorization figures. There are frequently several appropriating authorities in a single company, depending on the size of the proposed investment, ranging down from the board of directors to the finance committee of the board, to the chief officers, and to still lower levels in the management hierarchy. The totals may not be regularly pulled together. This means that monthly reporting would require special tabulations by many of the respondent enterprises.

Obviously we should avoid these difficulties unless an authorizations series would show a large average lead time over its nearest alternative, which is a series on equipment orders placed. Where authorizations relate to major plant expansion projects requiring a long period to complete, the lead is undoubtedly substantial. Where they relate to routine modernization and replacement expenditures, it is not believed that there is much of a lead on the average. It appears to be the prevailing opinion among executives of equipment manufacturing companies consulted on the question that in such cases the engineering work and negotiations are usually

well along before the authorization issues, and that the order follows soon thereafter.

This question can be answered definitely only by a more extended investigation than we have been able to make. This is true also of the possibility of defining authorizations in such a way as to get consistent and comparable results from different companies. It is probably desirable to explore these questions further, but on the basis of our present knowledge we favor an alternative approach, a compilation of equipment orders placed.

- *There should be further exploration of the possible advantages and the feasibility of a series on authorizations for the purchase of equipment.*

2. Equipment orders placed. Not only is the placement of orders with equipment suppliers a precise and definite point in the long process that begins with tentative exploratory planning; these orders are concentrated on the books of a comparatively small number of concerns. While it would require a large sample of reporting companies, well diversified by size and industry, to yield a reliable series on authorizations, it is believed that a good series on orders placed could be obtained by compiling orders received by relatively few equipment suppliers. (The placement and receipt of orders may be regarded as virtually simultaneous.) Such a compilation covering 100 carefully selected suppliers would represent more business than an authorizations series for many times that number of companies. The advantages of this concentration need no emphasis.

Existing series. There are two publicly available monthly series on new orders for producers' equipment, one compiled by the Department of Commerce as a part of the monthly Industry Survey; the other compiled by the McGraw-Hill Publishing Company. The former is available separately for electrical machinery and for machinery, except electrical. The latter covers nonelectrical machinery only.

The Industry Survey is a comprehensive monthly compilation of orders, shipments, backlogs, and inventories of manufacturing enterprises. Reports are on a company basis, which means that the entire business of a company is classified in the industry of its predominant activity. Since most companies, especially the larger ones,

cover more than one industry, the result is a considerable blurring of the results for separate industry classifications.

While this basis of reporting and classification is unavoidable in a series of comprehensive coverage like the Industry Survey, and while we imply no criticism of the Survey on this ground, the fact remains that the compilations of orders for electrical machinery and for machinery, except electrical are unsatisfactory for independent use. They include, in addition to business capital equipment, consumers' durable goods, defense contracts and subcontracts, civilian subcontracts, repair parts, and servicing. These inclusions result in major distortions, particularly in the electrical equipment field where household appliances figure so largely in the output. In consequence, it is impossible to read the results with any assurance whatever as a measure of changes in orders for business capital equipment alone.

In addition to the blurring just referred to is the fact that the Industry Survey series on equipment orders is not available until around the middle of the second month following the month covered. This is much too late for series designed to serve as a sensitive barometer of current business trends. While the McGraw-Hill series is available around the middle of the first month after the month reported, it relates, as already noted, to nonelectrical equipment only.²

Attached are two charts comparing the Commerce and McGraw-Hill series for nonelectrical machinery for the period of their overlap, 1949 to 1954, one showing seasonally adjusted data, the other unadjusted. A glance at these charts will show similarity in general movement but enormous variations from month to month. A quick check shows that the movements of the two series relative to the preceding month are actually in opposite directions from a quarter to a third of the time. For a current barometer or lead series, these aberrations constitute a serious defect.

Proposed new series. If any series on orders for new business capital equipment is to be what it purports to be, it must exclude defense contracts, subcontracts, consumers' goods, repair parts, and

²In addition to its limitation to nonelectrical equipment, this series is based, like the Industry Survey, on a classification of companies rather than of products. It is therefore subject to a similar blurring from the inclusion of orders for things other than machinery.

servicing. This means that the reporting companies must "break-out" from their totals the class of orders it is desired to cover.³

The development of a reporting system of this character would undoubtedly require at the outset a good deal of field work and considerable conferring with company executives. Since the number of cooperating companies would not be large, however (100 leading equipment manufacturers would probably be enough), the development cost should not be prohibitive.

The break-out of equipment orders could be done in many cases on a plant or divisional basis with a minimum of special tabulation. In other cases, however, special segregations would be required. Such segregations would not have to cover all types and items of equipment produced by the respondents, who should be encouraged to supply only those categories available without unreasonable inconvenience. The primary objective is the coverage of a wide diversity of product lines for a representative cross-section of the field.

We have discussed the proposed series thus far in terms of new orders received, but it is important to include also comparable data on shipments and unfilled orders. Experience with existing series has shown that it is impossible to get the full significance of changes in incoming orders without knowledge of the accompanying movements of shipments and backlogs. Indeed, so indispensable are these supplementary series for interpretative purposes, that it would be foolish to set up a reporting service without them.

The question is certain to arise whether the series should be broken down beyond the conventional split between electrical and non-electrical equipment. So far as their importance for general economic forecasting and interpretation is concerned, further break-downs hardly seem justified. They may be important, however, in getting the cooperation of the reporting companies, and the question should be carefully considered.⁴ The more elaborate the break-downs, the larger, of course, must be the sample of reporting com-

³ Government orders for capital equipment could be included in the break-out if desired.

⁴ McGraw-Hill has been experimenting with a six-fold breakdown of its series for non-electrical machinery into construction and mining machinery, engines and turbines, pumps and compressors, metalworking machinery, other industrial machinery, and office equipment. It is still too early to tell how successful this will be.

panies. Our estimate that 100 would be sufficient presupposes only the conventional two-way split.

One final point. Early publication should of course be a prime object—preferably no later than the middle of the month following the month covered. A lead series such as this loses value rapidly with delay.

A new monthly series along the lines suggested should be developed on orders, shipments, and unfilled orders for capital equipment.

3. Forecasts of equipment orders. The third approach mentioned at the outset deserves a brief comment. Many capital equipment manufacturers develop at least quarterly forecasts of new business. There are of course great differences in the care and competence with which these forecasts are prepared, but it should be worth while, if they can be collected in sufficient numbers, to begin an experimental compilation. The interpretative significance of the series would probably gain with experience. If it showed real prognostic value, it might provide an indicator leading by a significant margin the series on orders received.

In this connection we may note that *Fortune* magazine instituted some time ago a semiannual survey of capital equipment manufacturers calling for production forecasts a year ahead by quarters. While it is too early for more than a preliminary judgment of the results, they appear promising. Forecasts of equipment production that extend beyond the immediate future necessarily imply forecasts of new orders. Presumably equipment manufacturers could report the latter directly, in conjunction with actual orders, shipments, and backlogs.

The possibility should be explored of compiling quarterly forecasts of new business by capital equipment producers.

II. PLANT CONSTRUCTION EXPECTATIONS

In line with its general assignment, the Committee on Plant and Equipment Expenditure Expectations has paid special attention to the possibilities of developing information on prospective construction activity.

Since the primary concern of the Committee is understood to be with business capital investment, principal attention has been given to those types of construction activity, such as factories, mercantile structures, and income-producing properties of various sorts, which represent such investment in the ordinary sense. The Committee has in addition given some attention to other classes of construction that appear not to be covered, or covered only in part, in the assignments of other committees. These classes include public construction and private educational and institutional building and houses for owner-occupancy, which provide large demands for construction materials, equipment, and finance although they may not constitute business capital investment strictly defined.

1. Building permits and contract awards. The principal data currently available on construction are provided by (1) expenditures for new construction (private and public) prepared jointly by the Departments of Commerce and Labor; (2) new family dwelling units started, prepared by the Department of Labor; (3) value of contracts awarded and force account work started on Federally financed new construction, compiled by the Department of Labor; (4) building permit activity compiled for the country as a whole, metropolitan areas, and broad geographic regions, by the Department of Labor; and (5) contract awards for new construction in 37 Eastern States, by the F. W. Dodge Corporation, and for engineering and heavy construction, compiled by the *Engineering News-Record*.

Of these, the series on expenditures for new construction provides only a measure of the volume of construction currently under way. The series on housing starts gives a basis for estimating expenditures a few weeks ahead, but is of little use for forecasting over longer periods. Of the other series now available, those on building permits and contract awards deal to a somewhat greater degree in expectations, and in these the Committee finds a number of defects and inadequacies.

Building permits. Data on building permits, as collected by the Bureau of Labor Statistics, of course provide information about prospective construction only for places where building permits are required and from which reports can be obtained on a voluntary basis from building officials. While this coverage has been expanded during recent years until it is now said to blanket about 80 per cent

of the nonfarm population, the gap may be significant enough to effect regional and even national trends for some classes of construction, notably industrial and utility construction. Since no adjustment is made in the data (except in connection with the series on housing starts) to reflect the fact that amounts given in permits generally understate the actual cost of construction, the data, while generally significant as to trend, are deficient with respect to actual dollar amounts of work in prospect. The data are also uneven in the quality of the coverage, especially in small places. The lag in publication (about three months) detracts from their usefulness. The series is, of course, blank as to activity in localities where permits are not required, as to types of construction not classified as buildings, and as to many public buildings for which permits may not be issued.

A number of improvements would add greatly to the value of the permit series. Coverage can be extended as more and more communities require permits, a process which is continually under way. Through frequent field surveys, factors can be developed for adjusting permit amounts to a reasonable estimate of cost, a job that is now being satisfactorily done for residential building but not for the remainder. The lag in publication can be reduced by introducing more machine tabulation. Types of activity not covered by permits must, of course, be checked by other means than the permit series.

The indicated improvements should be made in the coverage of the building permit series, in the estimate of cost of work for which permits are issued, and in the timing of publication.

Special surveys should be conducted that would provide the equivalent of permit information in respect to government construction, public utility construction, and other work not covered by building permits.

Contract awards. The principal sources of information on the award of construction contracts are the Dodge Reports of the F. W. Dodge Corporation and the McGraw-Hill Company's *Engineering News-Record*. These data are widely depended upon by both government and private organizations as indicators of construction expenditures in immediate prospect. Since the contract award or-

dinarily precedes the building permit, it comes closer to the point of decision than any other datum point currently obtainable.⁵

Useful as the awards figures are, they have deficiencies from a statistical point of view. This is largely due to the fact that until recently they have been looked upon by their producers mainly as by-products of reporting services maintained for the benefit of contractors, subcontractors, and building suppliers. Thus the Dodge series omits eleven Western States and both series have cut-off points on the project value below which information is not obtained. In addition both series present difficulties in interpretation and comparison because they do not follow the system of classification of construction types adopted by the Department of Commerce and other Government agencies.

Recently, both organizations have been endeavoring to make their data more adaptable for purposes of statistical analysis by broadening geographical coverage, reaching wider value ranges, and improving reporting and tabulating controls. These steps can be of considerable significance.

The private organizations reporting construction contracts should be encouraged to carry on the improvements in their data that are now being contemplated or are under way, and should be urged to adopt the classification system of the Department of Commerce.

Force account work. It should be noted that data on contract awards miss a great deal of force account work, that is, construction work undertaken by the owner, using labor hired and materials purchased by him without a construction contract in the ordinary sense. This type of activity is common for maintenance and repair work and even for some new work, especially for industrial plants and large mercantile establishments. It appears also to be common for residential repair and improvement and for some new small house construction.

⁵ The Bureau of Labor Statistics, under a proposed program, would collect data on builders' intentions for residential construction, which would carry the datum point even closer to the crucial decision stage for this class of work. Because, for other classes of construction, the builders or general contractors are not the initiators, similar surveys in this area would not be similarly informative. It may be noted, nonetheless, that the annual surveys of expected work conducted by the Associated General Contractors at the beginning of the year have provided a fairly accurate indicator of probable activity for the particular year.

It has proven difficult enough to obtain information on force account work done, let alone attempting to get it on work anticipated, although the obvious importance of this whole area warrants more effort than has been given to it. The first step, obviously, is to develop the means for collecting information on current activity. A sizable proportion of business force account work is reflected in the Commerce-SEC plant and equipment data, though there is no means for segregating it from the rest.

2. Work in architects' offices. While the above recommendations would increase the dependability of the data on permits and awards, the resulting improvements, important though they are, would still leave much to be desired as measures of future construction activity. What is wanted is a series that gives a longer lead-time on expectations, indicating at some earlier stage than the building permit or the award of a contract the amount of work likely to be placed under construction at some future time.

In the search for a datum point more closely related to the time at which a fairly firm decision is made, the possibilities of surveys of work on architects' boards has been explored. Although architects are not employed for planning all types of construction or for all structures within any given category, it is believed that they participate in a large enough volume of work, particularly of the general classes of income-producing buildings and public buildings, to give a measure of trend within a tolerable margin of error.

Data on work being planned. The F. W. Dodge Corporation collects information on plans being made by architects, as a part of its regular reporting service, although it does not publish the data in statistical form on the ground that they are not sufficiently dependable. Nevertheless, with the assistance of the Federal Reserve staff, an analysis has been made of the data on plans in progress. They have been compared, on the basis of a three-months moving average, with the data on contract awards. Separate analyses have been made in this way for office and loft buildings, school and college buildings, stores and factories.

The results, in terms of clear evidence of a dependable lead over contract awards, vary considerably from poor in respect to factories to remarkably good in respect to schools and colleges. For the latter category, a three to six months' lead from a point of pick-up in plan-

ning activity to a pick-up in building activity is clearly shown over a period of seven years. A similar relationship is revealed between planning peaks and award peaks. Considerable consistency also appears in the relationship between the estimated value of work planned and that awarded.

For most of the period, the trend relationships are fairly well pronounced for store buildings, less so for offices and lofts, and considerably less so for factories. Reasons for the variations in results may only be surmised at this time, but may include such factors as varying degrees of participation by architects in the different classes of work as well as variations in the firmness of decisions characteristic of different sorts of projects. (It may also be noted that the data on factories are recognized to be the least dependable feature of the contract award series.)

We conclude that despite a good deal of irregularity in the comparisons the possibilities are sufficiently good for getting significant lead data to warrant a more exhaustive exploration than we have been able to conduct. In the more strictly defined capital investment area, the prospect appears best for commercial buildings-stores, office buildings, lofts, such as ordinarily are built for rent. The factory component seems to offer the least promise of significant results from this approach. While further exploration and experimentation may be fruitful, it may well be that major dependence should be placed on the Commerce-SEC method to cover prospective factory and public utility construction.

Possible new series. A number of suggestions for the development of new series are offered. Reporting of planned work should be more regular than now appears to be the case. A definite point in the process, such as the authorization to begin working drawings, should be selected. Since an authorization to begin working drawings usually means that the owner has committed himself to a major part of the architect's fee, it implies that an important and generally firm decision as to future construction has been made.

As an alternative, reports might be in terms of value of work expected to be put under contract within one, two, three, etc., months from the date of the report. Accompanying these explorations, surveys might be conducted to ascertain the relative amounts of various classes of work for which independent architects are employed.

Possible extensions of this approach might include reports from engineering departments of large industrial and mercantile establishments and of public agencies which do their own architectural work. The alternatives of handling such surveys on the basis of selected samples or by reporting as is done by the Dodge Corporation also deserve consideration.

The American Institute of Architects has strongly expressed its desire to assist in improving the quality of expectations data. At the present time it regularly obtains from its regional directors reports on the amount of work in members' offices in their respective jurisdictions. These reports are of an informal nature and, while giving at least a clue as to the trend of future activity, have no quantitative value. The Institute is desirous of introducing more scientific techniques. The Dodge Corporation is also understood to be interested in developing better data in this area.

Encouragement should be given to exploratory efforts to develop data on future construction from reports on work in the planning stage in architects' offices.

3. Commitments for financing. Most apartment and commercial building undertakings are financed with mortgage loans, ordinarily obtained from such institutional lenders as life insurance companies and mutual savings banks. Moreover, definite arrangements for such financing are likely to be made and commitments obtained well in advance of the commencement of construction. They are likely to antedate even the authorization of working drawings, and hence might yield an earlier clue to future trends.

While it has not been possible to examine the commitment figures of mortgage lending institutions, it is believed that if such figures could be compiled over a broad base and differentiated as to type of property covered, very important information might be gained about the flow of investment decisions. This type of statistical program obviously would have to be conducted with the cooperation of the lending institutions and under conditions that would assure the maintenance of the confidential nature of the individual reports.

Encouragement should be given to the compilation of commitments of savings institutions for mortgage loans on income-

producing property and to the exploration of those figures as a means for gauging investment expectations.

III. PLANT AND EQUIPMENT EXPENDITURE EXPECTATIONS

1. **Scope of section.** This section will appraise and recommend improvements in the quarterly and annual surveys of actual and anticipated plant and equipment expenditures conducted by the United States Department of Commerce and the Securities and Exchange Commission. While the major stress will be on the predictive value of the investment expectations collected by these agencies, some consideration will be given to the adequacy of the data on actual investment, and to the limited information on the factors influencing investment behavior. The McGraw-Hill surveys, another key body of data on investment expectations, will also be discussed.

Coverage of data. The SEC and Commerce, on the basis of sample surveys of registered and nonregistered companies, respectively, have since World War II been estimating anticipated and actual expenditures on new plant and equipment by all United States business, excluding agriculture.⁶ Only capital outlays for which companies maintain depreciation accounts are covered.

Early each quarter a sample of firms is asked to report expenditures on plant and equipment separately for the quarter just passed and planned expenditures for the current and for the succeeding quarter. At the year-end, these firms are also asked to report their anticipations of both capital outlays and sales for the following year. On the basis of these reports totals are estimated for all nonagricultural business by major industry groups and are publicly released as a regular quarterly and annual series.⁷ Plant and equipment expenditures, it should be noted, are combined in the published totals. The annual survey conducted at the beginning of 1955 requested for the first time as part of these periodic surveys a breakdown of total expenditures into those for replacement and modernization and those for expansion.

⁶ Nonprofit institutions, professionals, and residential construction are also excluded.

⁷ The industries shown are manufacturing, mining, railroads, transportation other than rail, public utilities, and commercial and other. Manufacturing is further broken down into fourteen subgroups.

In addition to these regular surveys, the SEC and Commerce have conducted several special surveys: two attempts to obtain, several months earlier than usual, investment intentions for the following calendar year; one attempt to obtain investment plans for a three-year period ahead plus a considerable amount of detail on the nature of and the assumptions behind this long-run investment program; one survey of the reasons for differences between actual expenditures in a year and those anticipated at the beginning of the year; and another survey of the reasons for differences between actual expenditures in a year and those planned for the following year.

McGraw-Hill has in recent years been conducting two annual surveys of plant and equipment expenditures, a preliminary survey in the fall covering anticipated annual outlays for the next two calendar years and a final survey in the spring covering anticipated outlays for four years. The sample coverage is smaller than in the regular Commerce-SEC surveys, but in addition to earlier reporting of annual data more information is obtained, including additional breakdowns of anticipated investments, longer-term perspective, and supplementary data on factors affecting investment decisions.

Importance of data. The series on actual and anticipated plant and equipment expenditures have in the few years since their inception become one of the best-known business barometers. This is not surprising in view of the central role played by business fixed investment in major cyclical movements and in economic development. Thus these data are of interest not only to the industries most immediately affected the capital goods producers concerned with the market for such goods, the capital goods purchasers concerned with their competitive position, and the suppliers of long-term capital funds—they are also of major importance to Government officials and businessmen generally, as well as to others, for appraisal of trends in economic activity and for formulation of appropriate economic policies.

The data on actual plant and equipment expenditures compiled in the Commerce-SEC surveys are the basis for the current estimates of gross private domestic investment (exclusive of residential construction, inventories, etc.) appearing in the national income and product statistics. They have replaced for this purpose estimates

formerly obtained from production or shipment data. The approach followed in these surveys—obtaining data from capital goods purchasers rather than producers—is the only feasible means of obtaining capital expenditures data by industry or ownership. From the point of view of the data on plant and equipment expectations, the data on actual expenditures constitute the framework for evaluating the significance of anticipated changes in capital outlays.

The importance of the data on anticipated expenditures depends ultimately on their predictive value, a subject discussed later. However, it may be noted that there is reason to expect these data to provide some advance insight into the course of capital outlays, because investment decisions ordinarily involve various types of commitments in advance of expenditure and once decisions are arrived at there is a certain resistance to change. The almost universal acceptance of these anticipatory data for short-term projections of plant and equipment expenditures suggests that they are the best data now available for this purpose, even if not completely satisfactory.

2. Reliability of estimates. The annual estimates of actual expenditures on plant and equipment have been based primarily on mandatory reports by virtually all (close to 2,000) corporations registered with the SEC, both manufacturing and nonmanufacturing, and voluntary reports to Commerce by a sample (over 1,000) of nonregistered manufacturing companies, noncorporate as well as corporate.⁸ The annual estimates of anticipated expenditures by these two agencies, as well as the quarterly estimates of actual and anticipated investment, have been derived from the same group of nonregistered companies and from voluntary reports by most of the registered companies.

Registered corporations account for about 65 per cent of the capital assets of manufacturing companies and over 45 per cent of the capital assets of nonmanufacturing companies. The Commerce sample accounts for another 6 per cent of manufacturing. Thus the sample coverage in terms of assets is rather large for the total of actual annual investment (close to 60 per cent), even though for certain industries such as trade and service the sample is extremely small

⁸ McGraw-Hill, which collects data from a somewhat smaller sample of firms, uses the Commerce-SEC estimates of actual investment as the basis for its projections.

and quite biased and even though no data are collected from lessors of business facilities. The reported data on anticipated expenditures represent a somewhat smaller sample for business as a whole (with a total asset coverage of less than 50 per cent) but a substantially smaller sample for a number of industry groups.

The Department of Commerce has recently taken steps to remedy perhaps the most serious statistical deficiency in the data on actual and anticipated expenditures—the completely unsatisfactory information for retail trade which accounts for about 12 per cent of total business investment. A stratified probability sample of 5,600 retail firms was contacted and 1,400 returns were received but it has not yet been possible to assess response.

Another significant deficiency in the series on anticipated expenditures which should be remedied is the absence of data from the nonreporting group of registered corporations. It would be highly desirable if this gap could be filled in any substantial part, particularly in view of the small collection costs involved and the relatively high quality of anticipatory data reported by registered firms.

Probably next in importance would be to take care of the constant sample bias in the data. It would be helpful if the non-registered samples of manufacturing and trade concerns could be supplemented periodically (perhaps once a year) by small random samples of new firms.

The final major improvement in the sample which should be considered is expansion of the nonregistered firms to include service, finance, wholesale trade, construction, certain groups of nonrail transportation, some types of mining, and lessors of business facilities.

However, all of the groups included in the last of these recommendations account for roughly 15 per cent of total business expenditures, and costs of collecting satisfactory data are likely to be high.

Universe data. The Commerce-SEC estimates are essentially on a Statistics-of-Income base in level, industry classification, and degree of consolidation.⁹ The sample data on expenditures are blown up on the basis of the relationship of sample gross capital assets (or in

⁹ *Statistics of Income* is published annually by the Internal Revenue Service.

certain cases sales or receipts) to the total gross capital assets of companies in the same asset-size and industry group reporting to the Internal Revenue Service for 1948.¹⁰ The universe estimates for other years, derived from constant samples stratified by size and industry, are roughly adjusted for biases arising out of changes in the business population (on the basis of the regular Commerce series on business births and deaths and a one-time postwar survey of investment by new firms). With the exception of a few industries—notably petroleum, primary metals and chemicals—the *Statistics of Income* and hence the Commerce-SEC data are largely on an unconsolidated basis.

In view of the biased nature of the sample data, it is especially important to compare the universe estimates with any external information available. The only comparison published so far shows that for manufacturing the Commerce-SEC estimates of actual expenditures were systematically higher than those indicated by the 1947 Census of Manufacturers and 1949 and 1950 Surveys of Manufacturers, apparently largely as a result of the difference between company (*Statistics of Income*) and plant (Census) data. The trends in outlays of the two series from 1947 to 1949 and 1950 were quite close for manufacturing as a whole, and for most of the major subgroups.

Another rough test of the reliability of the Commerce-SEC estimates of actual expenditures is given by a comparison of these figures with data on construction and producers' durable equipment obtained from a commodity-flow analysis. Unpublished data supplied by Commerce point to an average annual discrepancy of 4 per cent between the two series, with the Commerce-SEC estimates apparently higher than the commodity-flow figures up to 1949 and lower thereafter. The annual trends indicated by the two series have corresponded fairly closely.

3. Predictive value of estimates. The most important consideration in an appraisal of the data on plant and equipment expenditure expectations is their ability to forecast movements in total expenditures, but it is impossible to assess this properly without an examination of individual firm as well as of aggregate data. At-

¹⁰ Several other sources of data were used in deriving the 1948 benchmark estimates, including capital expenditures data collected from a sample of establishments in the Post Enumeration Survey to the 1948 Census of Business. For further technical details, see *Survey of Current Business*, December 1951, p. 21, and August 1952, p. 23.

tention will be concentrated on the Commerce-SEC series in view of the availability of comparative data on anticipated and actual expenditures both at the individual firm and aggregate level.¹¹

An analysis of the available evidence—including an examination by industry of discrepancies between anticipated and actual expenditures from 1947 to date, a detailed examination of individual company discrepancies for 1949 (and in less detail for 1947 and 1948) classified by type and operating experience of company, and an analysis of the reasons for the discrepancies in 1949 as obtained from a special survey early the next year—indicates that the data on expectations provide a highly useful tool for short-term projections of aggregate capital outlays.¹² Projections of expenditures based on anticipations give better results than alternative procedures. From 1951 on, the annual discrepancy between anticipated and actual outlays in the aggregate has been of the order of 1 per cent or 2 per cent except for 1953 when it was 5 per cent. The annual anticipatory data projected correctly the downward movement in actual outlays at the beginning of 1949 and 1954, when anticipated declines of 5 per cent and 4 per cent, respectively, compared with actual reductions of 6 per cent and 5 per cent. While these data have met satisfactorily the tests provided by the two turning points with which they have been confronted (apart from the immediate post-Korean upsurge), they have not yet had an adequate test of their behavior in periods of major cyclical disturbance.

The quarterly anticipations do not give as accurate approximation of aggregate expenditures as do projections for an entire year. When the quarterly anticipatory data are adjusted for seasonal and other nonrandom factors, their predictive performance is considerably improved. As a whole, they have provided a useful adjunct to the annual data, particularly in making adjustments for sharp changes in the economic situation.

The performance of the quarterly data should be studied further, with special sample surveys of the reasons for discrepancies

¹¹ The McGraw-Hill final survey each spring has yielded aggregates for the year ahead very similar to the Commerce-SEC annual projections.

¹² The most comprehensive analysis of these data appears in "Plant and Equipment Programs and Their Realization," *Short-Term Economic Forecasting*, (*Studies in Income and Wealth*, Vol. XVII) National Bureau of Economic Research, 1955, pp. 53-111. More recent data appear in the *Survey of Current Business*, March 1955.

between anticipated and actual outlays, including the extent to which such discrepancies reflect differences in accounting charges rather than in investment.

Improvement in predictive value. Various influences affect the relationship between anticipated and actual expenditures both in the aggregate and for different types of firms and investment programs. Some factors involved are random and tend to offset in their impact on total investment, others are cyclical and depend on economic conditions, and still others are systematic. Thus there is a tendency toward systematic understatement in the plans reported by business, apparently as a result of the partial omission of small or uncertain items.¹⁸ The degree of accuracy with which individual businessmen anticipate their capital outlays is related to size of firm, amount of investment, and other factors, with the largest firms and those planning large-scale investment much more accurate than other firms.

Tests should be carried out to determine whether better estimates can be obtained by appropriately modifying the procedures now used to obtain anticipated expenditures.

For example, the assignment of greater weight to the firms which have been most accurate in their past anticipations might significantly improve aggregate projections.

The necessity of analyzing further the results obtained from different types of firms is highlighted by the substantial degree of dispersion in the accuracy with which individual businessmen anticipate their capital outlays. In 1949, the latest year for which such data are available, only a little over one-fourth of the firms came within 20 per cent of their anticipations. The accuracy of the aggregate projections appears to depend on offsets between underestimates and overestimates and on the fact that large firms and those projecting major outlays perform much better than average. However, even for firms with over \$50 million in assets not quite half came within 20 per cent of anticipations.

In view of the extent to which the close agreement between expenditures and anticipations in the aggregate is the result of large offsetting errors, it seems essential to attempt to cut down the size of

¹⁸ The understatement tends to increase with longer range projections.

these errors and to investigate thoroughly the stability of forces bringing about these offsets.

For this purpose, it is highly desirable to study periodically the dispersion of individual firm discrepancies (along the lines followed for 1949 and preceding years), and even more important to obtain from time to time new sample data both through mail and field surveys on reasons for these discrepancies (along the lines of the special 1949 survey).

It may be noted that Canada, in its midyear review of investment intentions, has in recent years regularly collected data on reasons for anticipated changes from earlier plans. However, a series of special surveys, like that covering the 1949 investment of United States firms, appears to be a more effective approach to this problem than a routine question attached to a general purpose questionnaire.¹⁴

We need to know more about the assumptions made with respect to capital goods prices, financing, and other variables not now covered in the regular annual survey, and about the mechanics of investment programming.

Thus anticipations may reflect a planned volume of investment and inadequately take account of price factors. Similarly, a significant proportion of the inaccurate projections by individual firms might be explained by the absence of any comprehensive investment budgeting or other systematic means of forward capital planning.

Still another approach to improve predictive accuracy is to have individual firms differentiate among anticipations on the basis of the probability of their realization. Specifically, projects already contracted for might be segregated from two other major groups—those not contracted for but to which a high probability is attached in the absence of sharp deviations from expectations, and those more sensitive to deviation from expectations. Such a classification of anticipated expenditures was attempted by Commerce and SEC on the basis of a very small sample of personal interviews, but the results were generally unsatisfactory. The utility of information on capital expenditure authorizations as a supplement to the data on anticipations might likewise be explored.

¹⁴ See "Investment Forecasting in Canada," *Short-Term Economic Forecasting*, pp. 214-223.

Insight into investment behavior. These data on anticipations furnish a convenient focus for a continuing study of investment behavior in general. An understanding of the reasons why businessmen change their investment programs will not only help in developing techniques for projecting business investment but also in assessing the implications of changes in government policies or in institutional arrangements.

Special surveys should be conducted at irregular intervals to further our knowledge of the factors determining the level of, as well as accounting for changes in, capital outlays.

Only two types of such special surveys need be mentioned. First, when there is a substantial and not readily explainable difference between actual expenditures for the past period and those anticipated for the period ahead, there appears to be justification for a sample survey to obtain insight into the factors involved.¹⁵ Second, there should be a long-run policy of conducting occasional surveys specially designed to fill in the more significant gaps in our information on the investment process.¹⁶ Care should of course be taken to ensure that these surveys do not become unduly burdensome.

4. Additional breakdowns of data. Further breakdowns of the data on anticipated and actual expenditures may be justified if they cast significant light on aggregate trends or if they make valuable information available to specific lines of business, but the value of the information must be assessed against the cost and particularly against the danger of weighing down the present collection program.

McGraw-Hill has provided more details on the composition of expenditures than Commerce-SEC, regularly breaking down expenditures into those for expansion and those for replacement and modernization, with supplementary information on the percentage expansion in capacity, and publishing in early 1955 separate estimates for plant and equipment. The latter is information collected regularly by Commerce-SEC but is not considered sufficiently reliable by these agencies for aggregate estimation. The greater detail supplied by McGraw-Hill reflects in part a willingness to publish rough estimates to satisfy urgent needs. The following com-

¹⁵ A pilot survey of this type was conducted by Commerce-SEC in early 1950.

¹⁶ McGraw-Hill has compiled highly interesting though limited information of this nature as part of its regular survey.

ments discuss the desirability of providing additional breakdowns of the Commerce-SEC data, in several cases along lines already carried out by McGraw-Hill.

Perhaps the most important new breakdown of the Commerce-SEC data that should be considered is a segregation of investment between plant and equipment.

Such a segregation would facilitate the comparison of anticipations data with orders of capital goods industries, and would furnish a check on estimates of equipment expenditures in the gross national product statistics which are now obtained as a residual between the Commerce-SEC estimates of plant and equipment outlays and the independent nonresidential construction series. The basic difficulty in providing a reliable breakdown of the Commerce-SEC series into plant and equipment is the apparent inability of a number of very large concerns in certain industrial areas, notably petroleum, chemicals, steel, and electric and gas utilities, to supply the necessary data. The feasibility of compiling such information needs to be investigated further. The data currently compiled, plus improvements that can readily be made, may permit a segregation of plant and equipment for business as a whole and for certain though not for all industrial areas.

The breakdown of total expenditures into replacement and modernization and into expansion, compiled for the first time as part of the regular Commerce-SEC annual survey in early 1955, is also quite useful potentially, though a number of firms do not supply this information and others stress the difficulty of segregating expansion from other programs. In view of the nature of this classification, the data reported are probably more meaningful as an indication of trend than as an indication of level. It might be desirable to supplement these data with information on the percentage expansion in capacity, but the difficulties of weighting capacity figures must be recognized, particularly when the data are reported on a company rather than establishment basis. Moreover, substantial resources would probably be required to improve significantly the capacity data already supplied by McGraw-Hill.

A number of business economists have stressed the desirability of further industrial breakdowns of anticipated and actual expenditures.

This would seem undesirable without a significant strengthening of the Commerce-SEC sample, particularly for the series on anticipations. The type of sample improvement required would be costly, and the more detailed estimates would involve many problems of industrial allocation of expenditures reported on a company basis.

Two other breakdowns of the expenditure data which have received some attention are the segregation of capital expenditures for new products as against those established products, and the breakdown of total outlays by region. Data compiled by Commerce and the SEC in late 1952, and by McGraw-Hill in early 1949, did provide some interesting information on investment for new versus established products but the quality of the data left much to be desired, and it seems doubtful that any regular provision should be made for the collection of comparable material. Regional data on anticipated and actual plant and equipment expenditures have been published as part of the Canadian surveys, but it does not seem feasible to provide similar information in this country on the basis of present surveys in view of their dependence on company rather than establishment reports.

5. Timing of estimates. It is essential that the data on anticipations be reported and compiled as fast as possible, that significant changes in plans be reported without unnecessary time-lags, and that as long a period ahead be covered as is consistent with the character of this body of information. In addition to the quarterly surveys, Commerce and the SEC estimate actual plant and equipment expenditures for the past calendar year and anticipated expenditures for the year ahead by the end of February of the current year.

For substantially earlier information on anticipations for a year ahead, it would be necessary either to separate the annual collection of data on anticipated expenditures from the collection of data on actual expenditures for the past year, or to follow the McGraw-Hill and Canadian procedure of first asking for preliminary estimates of actual expenditures before the close of the year and then obtaining revised estimates after the close of the year. At present Commerce and the SEC attempt to collect the annual data both on actual and anticipated expenditures as soon after the close of the year as most of the cooperating firms can supply estimates of actual

outlays, which in practice requires up to about mid-February. The budget data on anticipations, or the capital programs for the next year, are normally available in the companies' records considerably earlier, sometime between the beginning of October and the middle of December.

It is not clear that it would be desirable to burden the reporting companies and the two Government agencies with two surveys covering annual data, with just a couple of months intervening. Presumably, the Commerce-SEC data on anticipations for the next calendar year, which are collected a couple of months later than they theoretically might be, have been reviewed in the light of the later developments. Thus the Commerce-SEC regular annual surveys, and the McGraw-Hill final surveys in the spring, have provided significantly better forecasts than either the McGraw-Hill preliminary surveys or the two special Commerce-SEC surveys conducted in the fall. Earlier government surveys of anticipations for the next year might be reserved for periods of unusual concern about the business situation and might be confined to a small sample of leading companies.

Another suggestion which has been made is to obtain around mid-year a second set of anticipated expenditures for a year. Thus in Canada there are two annual surveys of anticipated expenditures, one at year-end and the other in May yielding revised totals for the same period. There does not seem to be much reason for the same procedure in this country so long as we collect quarterly data and the McGraw-Hill preliminary and final surveys are available. Various modifications of the quarterly collection program have also been proposed, including the quarterly compilation of anticipations for the next year instead of for only two quarters ahead.

Further exploratory work to determine the desirability of altering the present collection program to change the timing of the annual surveys of anticipations, and the period covered by the quarterly data, is undoubtedly warranted.

This should include sample tests on an individual company basis of the predictive accuracy of the different approaches.

Finally, the utility of long-term capital budgets or plans—such as the data for a three-year period ahead collected from a sample

of very large companies by Commerce and SEC in late 1952, and the longer-run data compiled regularly by McGraw-Hill—should be explored further.

An increasing number of companies have been engaging in long-term capital planning, with three to five years capital budgeting becoming fairly common. While there is little reason to expect a close relationship between projected and actual expenditures over such prolonged time periods, it may be found that these long-run data cast some light on the basic strength of investment demand, and the evidence to date is fairly encouraging. It is not contemplated that surveys of this character would be conducted regularly by Commerce and SEC, as is now done by McGraw-Hill, but rather that special intensive analyses of such data might be carried out on convenient occasions.

6. Coverage of farm sector. While the data on capital expenditure expectations cover virtually all nonagricultural business, a major gap is the absence of information on farmers' intentions to invest in plant and equipment. In view of the predictive value of the non-farm expectations, it seems desirable to attempt to compile comparable data for farmers. However, data on anticipations have been less satisfactory for small than for large economic units, and information on farmers' intentions to invest may not turn out to have much forecasting value.

It is recommended that an exploratory survey of farmers' intentions to invest in plant and equipment be carried out.

For this exploratory work, a sample of several hundred farmers might be sufficient though a larger sample would be required for adequate nationwide figures. Such a survey can probably be undertaken most economically as a supplement to established statistical programs by the Department of Agriculture or other agencies periodically sampling the farm population.

APPENDIX

ACTIVITIES OF COMMITTEE ON PLANT AND EQUIPMENT EXPENDITURE EXPECTATIONS

Members:

Terborgh, George—Machinery and Allied Products Institute, Chairman
Butler, William F.—Chase National Bank
Colean, Miles L.—Consulting Economist
Friend, Irwin—University of Pennsylvania
Hoadley, Walter E., Jr.—Armstrong Cork Company
Simpson, Paul B.—Federal Reserve Board, Secretary

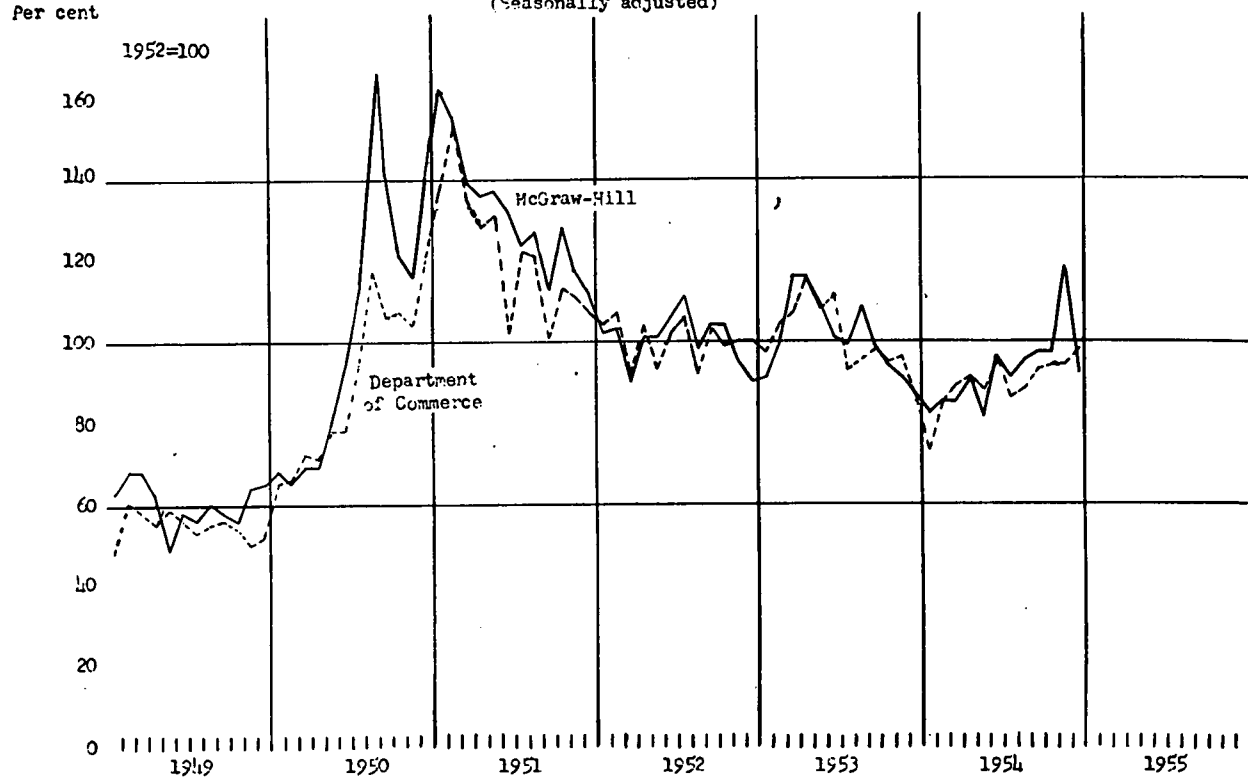
Places and dates of meetings:

Philadelphia, Pennsylvania—November 19, 1954
New York, New York—December 29, 1954
Washington, D. C.—January 27, 1955
Philadelphia, Pennsylvania—April 19, 1955

Principal persons interviewed:

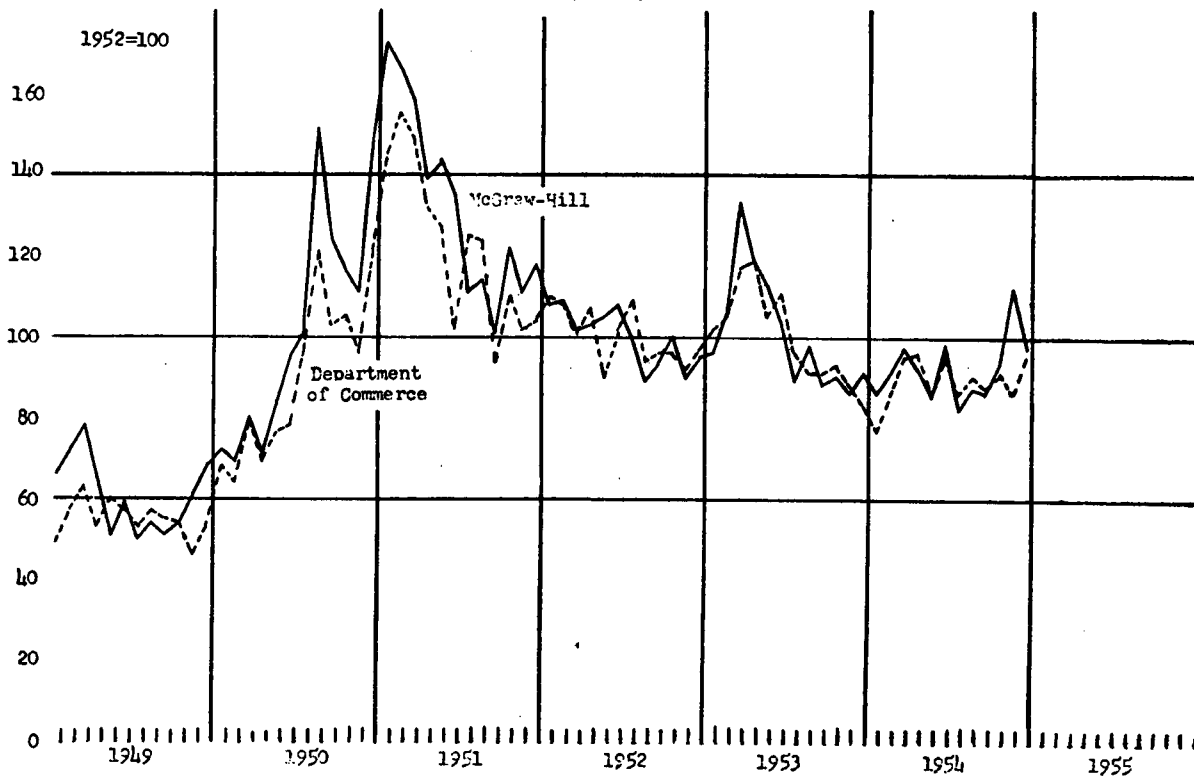
Bridge, Lawrence—Department of Commerce
Byer, Herman—Bureau of Labor Statistics
Cooper, M. R.—Department of Agriculture
Daly, Rex F.—Department of Agriculture
Grove, Ernest W.—Department of Agriculture
Holden, Thomas S.—F. W. Dodge Corporation
Johnson, Frank—Department of Agriculture
Keezer, Dexter M.—McGraw-Hill Publishing Co., Inc.
Koffsky, Nathan M.—Department of Agriculture
Meehan, M. Joseph—Department of Commerce
Natrella, Vito—Securities and Exchange Commission
Newcomb, Robinson—Council of Economic Advisers
O'Leary, James—Life Insurance Association of America
Paradiso, Louis J.—Department of Commerce
Purvis, Edmund R.—American Institute of Architects
Riley, H. E.—Bureau of Labor Statistics
Schneider, Walter—Department of Commerce
Shute, Clyde—F. W. Dodge Corporation
Stauber, Ralph B.—Department of Agriculture

McGraw-Hill and Department of Commerce New Orders for Machinery (except electrical),
Monthly, 1949 - 1954
(Seasonally adjusted)



McGraw-Hill and Department of Commerce New Orders for Machinery (except electrical),
Monthly, 1949 - 1954
(Unadjusted)

Per cent



Mr. Terborgh, will you proceed?

STATEMENT OF GEORGE TERBORGH, RESEARCH DIRECTOR OF THE MACHINERY AND ALLIED PRODUCTS INSTITUTE, WASHINGTON, D. C., AND CHAIRMAN OF THE COMMITTEE ON PLANT AND EQUIPMENT EXPENDITURE EXPECTATIONS

Mr. TERBORGH. Mr. Chairman, perhaps I should start by commenting upon the committee's assignment. We undertook this task on the understanding that it was not to be a research project, that our responsibility was simply to get the judgment of a group of knowledgeable men on the problem and leave to others research and development along the lines of our suggestions. If you have read the report you will observe that most of the recommendations consist of suggestions for further study.

The problem in hand arises largely from the long lead time in the case of capital projects. Normally a project begins with a period of exploratory planning, the plan increasing in clarity and definiteness as time goes on. Finally a decision point is reached at which it is determined to go ahead with the project. Not only is there a lag between the planning and the decision to go ahead; there is another lag between the decision and the making of an actual commitment in the form of a construction contract or an order placed with the equipment supplier.

There is a further lag between this commitment and the actual expenditure of funds. In the case of construction, this normally averages several months, and even in the case of equipment it is substantial. So we have here a long sequence or progression starting with tentative planning and ending finally with the payment of money.

The problem is to tap this progression at the earliest point at which we can obtain reliable data. Ideally, we should tap it at the point at which firm decisions are first made. Conceivably it might be possible to tap it even earlier if we had some means of forecasting decisions, but the obvious target is the decision point.

The committee has construed its problem to be the possibility of getting closer than we now do to the point of decision. You will find that most of its recommendations relate to this problem.

The report is organized in three sections. Following the introduction, section I deals with series on expectations for business capital equipment, section II with expectations for business construction, and section III with anticipated expenditures for construction and equipment combined.

I shall confine my comments to the introduction and section I. Mr. Colean will discuss construction series. Mr. Friend will comment on the series for plant and equipment combined, and Mr. Butler will have something to say on the problem of getting expectation series for agriculture.

In part I of the report, which deals with expectations series for equipment, we make three recommendations. Two of these are for further exploration by somebody with time to devote to the problem. The other is a recommendation of a more definite character for the development of a new statistical series.

Turning now to these three recommendations, the first has to do with the possibility of compiling figures on authorizations or appro-

priations for capital expenditures. Most medium-sized and larger companies now follow the practice of drawing up capital budgets for at least a year in advance. These budgets are implemented as the year goes on by specific appropriations or authorizations. Thus, the question arises whether it is possible to develop a reporting series on these authorizations.

This presents a rather difficult problem, the chief difficulty being to get uniform and consistent reporting. Practice differs widely from one company to another in the treatment of authorizations. In some, for example, authorizations are made tentatively in the large with successive subauthorizations as time goes on. This obviously raises the risk of double counting. Just when is a firm authorization made and for how much?

We are inclined to think that a study would develop such a range of practice in the definition and handling of authorizations that it would be difficult to get a clean and consistent compilation. There is, moreover, another difficulty. There are several authorizing authorities in most companies, depending on the size of the project. The full board of directors reviews large projects; the finance committee of the executive committee of the board decides on intermediate projects; and from there we grade down to authorizations in the power of the senior officers of the company, and to those that can be made by the lower echelons of command. Many companies fail to make a complete compilation of their authorizations and would have to undertake the task if a comprehensive series were called for.

Our own investigation of this point was so limited that we leave the recommendation that the subject be further explored, both as to the possibility of defining authorizations so that they mean the same thing across the board, and as to the possibility of getting data covering all authorizing authorities within the reporting companies.

With this admonition for further study, we pass to the series we do affirmatively recommend, that is, a series on new orders received by equipment producers. It would be possible by taking not more than 100 leading equipment producers to compile more business in orders received than could be reached by reports of authorizations by many times that number of companies. Obviously this concentration offers great collectional advantages.

The receipt of new orders by suppliers can be regarded for practical purposes as virtually synchronous with the placement of the orders by their customers. The question is how far the placement of orders by the customers lags the go-ahead signal, the final decision to undertake the project. Here the answer differs, depending upon circumstances. For large projects the firm decision to go ahead may precede the placement of equipment orders by a considerable period. For routine equipment orders involving replacement of existing facilities, it appears to be the view of the trade that there isn't much of a lag due to the fact that before a project is submitted to the deciding authority the engineering negotiations are usually so well matured that the placement of the order follows promptly after the authorization.

The average timelag of an orders-received series, compared with the possible authorizations series that I have just discussed, is difficult to estimate. My own guess is that in the case of equipment it is not more than a month or two. But to this extent we still have an

incentive to play for the authorization series. We would get a significant lead on the receipt of orders by equipment suppliers.

The new series on orders that we recommend would differ somewhat from the two series now available, one compiled by the Department of Commerce, the other by the McGraw-Hill Publishing Co. The Department publishes new orders for two categories of equipment—electrical and nonelectrical (although just recently the breakdown has been dropped pending improvement of the sample). But these are not orders for capital equipment as such; they are the orders received by companies classified as equipment companies.

Many of these concerns, particularly in the electrical equipment field, straddle a very wide range of business. They make appliances. They are in defense contracting and subcontracting. They do civilian subcontracting on occasion. They produce a large flow of repair parts and they engage in servicing activities. Some of these sources of business are very irregular in their impact on the company's books. For example, defense orders may be individually large, and in a month in which a company books such an order its report runs wild.

We offer no criticism of the Department of Commerce series, which is an across-the-board series covering all industry. Classification by companies rather than by products is probably unavoidable in a series of general coverage. But it does have very serious deficiencies from the standpoint of a reliable lead series on business equipment orders. Not only does it include a large volume of nonequipment business; it is available about the middle of the second month following the month reported. Since the value of a new-order series is primarily in its timeliness, a lag of 6 weeks behind the close of the reported month is a serious handicap.

The McGraw-Hill series comes out more promptly. In fact, it is available about the middle of the first month following, but it covers only nonelectrical equipment and relies, like the Commerce series, on a classification of companies rather than of products. It suffers the same blurring and erratic behavior from the inclusion of nonequipment business.

We have attached to our report a couple of charts which compare the Commerce and the McGraw-Hill series for the period of overlap, 1949 to 1954, both on a seasonally adjusted basis and on an unadjusted basis. It is obvious at a glance that while their general contours are closely similar their month-to-month movements are distinctly different. Indeed, the movement from the preceding month is in opposite directions for the two series in a quarter to a third of the cases. This is certainly due in part to the inclusion of nonequipment business, though in part to differences in the samples used.

What we suggest is that a clean series be developed for business capital equipment based on special reporting by a limited number of equipment producers. Probably not much over 100 companies would be required. These would break out from their total bookings new orders for the categories of equipment that we are interested in. This breakout could be obtained in some cases on a plant or divisional basis. In others it would require special tabulations.

It is desirable not only to get a clean new-orders series that will come out as promptly after the close of the month as possible; it should be accompanied by a comparable series on backlogs and shipments.

We have had enough experience with new-order series to realize that it is extremely difficult to interpret the significance of the indicated movements without these complementary series.

Our recommendation boils down to a proposal that a new series be developed on orders for business equipment, that it be clean, resulting from a breakout of such equipment by the reporting companies, that it be issued as promptly as possible after the close of the month covered, and that it be associated with shipment and backlog figures for the same categories of equipment.

I pass now to the third recommendation which has to do with forecasts of new orders.

Most equipment manufacturers, certainly the larger ones, make a practice of forecasting their incoming business, sometimes as far as a year ahead. The sales departments get reports from the field and put together their best guess as to the business to be expected over the near future. It may be possible to get the respondents who report new orders actually received to report also their forecasts of orders, perhaps a quarter ahead.

If we can develop an orders-forecast series that shows predictive reliability, we will, of course, be several months ahead of the orders-received series. Since lead time is the great desideratum in an expectations series, this is worth trying for.

Fortune magazine has experimented with this approach. They have asked equipment manufacturers to forecast their production for a year ahead by quarters. It is obvious if a company predicts its output for the second, third, or fourth quarter away, it is implicitly predicting its bookings in the intervening period. We are inclined to feel that the practice of predicting orders may have developed now to a point where a useful series can be compiled. If it is maintained for a period of years and compared with the orders-received series, it should be possible to appraise its usefulness and decide whether to go on with it. We recommend that this possibility be explored.

That, I think, is sufficient for the first section of the report, and I now pass the ball to the gentleman on my left, Mr. Miles Colean, who is primarily responsible, along with Walter Hoadley, for the section for construction expectations.

The CHAIRMAN. Thank you very much. Mr. Talle would like to ask a question at this point.

Mr. TALLE. Thank you, Mr. Chairman.

I took note of your statement, Mr. Terborgh, that the work was not completed, there was more to do. I was not surprised at that statement because what you are dealing with is dynamic. So, I did not want to miss this opportunity to appeal again to the Board of Governors of the Federal Reserve System for additional help in the future.

And, secondly, I wondered if some of these problems might not be appropriate subjects for research and study on the mature graduate student level in our universities and technical schools.

Mr. TERBORGH. I think some of them would make good doctoral theses.

Mr. TALLE. Something auxiliary to what you are doing.

Mr. TERBORGH. If our hunches as to the possibilities are any good, they ought to make excellent research projects.

Mr. TALLE. So it seems to me. Of course, we like to have the job done as quickly as possible, don't we, Mr. Chairman?

The CHAIRMAN. Surely.

Mr. TALLE. Thank you.

The CHAIRMAN. Mr. Colean.

Mr. COLEAN. Mr. Chairman, and Mr. Talle, when this part of the report was prepared, we had high hopes, which have since proven vain, that by this time we would have some very important and badly needed improvements in our basic statistics on construction activity, particularly in the field of nonresidential construction with which this report is concerned.

Those expectations have not been fulfilled, because the Congress was not adequately convinced of their importance. Consequently, we are in a difficult situation in discussing statistics on expectations when we don't know just exactly where we are to start with. However, we can hope that perhaps next year, if we keep working, those programs which we discussed a year ago, when you asked me to appear before your committee—

Mr. TALLE. If I may interrupt, as one of last year's panelists, you did help to convince the President of the correctness of your position.

Mr. COLEAN. I wouldn't go so far as to say I was responsible for that. It takes an awful lot of work by a lot of people to get this thoroughly into the mill.

So, we are left here discussing expectations on an inadequate foundation from which to start. But, be that as it may, we have undertaken to do what we can.

The bases on which we can develop any such program at the present time are largely two: Reports on building permits and reports on contract awards.

The permit reports, of course, are gathered by the Bureau of Labor Statistics. The contract awards are the product of private agencies, mainly the F. W. Dodge Corp. and the McGraw-Hill Co.

The permit statistics give us a point of departure pretty far after the time of the original decision to build, so they do not give us a great amount of lead time over the actual starting of work, and they are, moreover, late in publication. We really do not get them until the work has probably started, if it is to start; and they do not cover, of course, a lot of construction. They take in very little outside of the building field; and there are many areas in which large work goes ahead in which building permits are not required.

Therefore, while the development of better permit statistics is desirable—and we have so recommended—it still would leave us with the problem of not actually having a satisfactorily early point from which to judge our future.

The contract awards figures are of a somewhat different nature. Contract awards often are made before permits are granted, so there is frequently a little more lead time. They also can cover a wider range of projects and a wider geographical area.

At the present time, however, the awards data are not adequate. The F. W. Dodge Corp., which is the most important agency in this field, has, up to the present time, only covered 37 States east of the Rocky Mountains. The Engineering News-Record, which is a McGraw-Hill publication in the construction field, tries to cover a broader geographical area, but it has a much higher cutoff point on the values on which it gets reports, so that a lot of small work and medium-sized work is lost. Both of these organizations are at the present time

endeavoring to improve their statistics, and the Dodge Corp. in particular is doing a very costly job—I would think, from its point of view, in attempting to broaden its geographical area and to improve the nature of the reporting throughout its coverage.

But again we run into this problem of a fairly late point. The actual decision to go ahead with the particular operation has been made perhaps months before a contract award has been made. Our endeavor was to find some means of getting further back in this stream of decisionmaking so that we would have a better point for prediction.

In the course of that study we found that the Dodge Corp. does obtain, through its regular reporting service, reports on work in progress in architects' offices. The company has never developed those reports in a statistical way because it had some question of their dependability, and also some question as to the demand for that particular type of statistics.

Examining those figures, however, which are admittedly of a rather crude nature, we found that in certain fields there was a very good possibility that a much longer lead on our predictions could be made by some such device. That has led to a number of discussions with both the Dodge Corp. and with the American Institute of Architects, which is interested in this problem, and we hope and we have reason to believe that both of these agencies will proceed to explore it further.

I think they will need some help, however, from other statistical agencies in the development of their procedures; but the idea seems entirely feasible for a good many types of construction, and among that I would place construction of income-producing property—especially stores, mercantile buildings of various sorts, office buildings—and private institutional buildings, which, while not capital investment in the ordinary sense, still are very important from the point of view of consuming construction materials and construction labor.

Our suggestion is that these studies be based on reporting of the time at which an authorization for the commencement of working drawings is made. When working drawings are ordered, a decision has been made of considerable firmness, because at least the architect will have to be paid a substantial amount from that time on, and the project has probably been pretty thoroughly considered.

We believe that, with some study as to the amount of lapses and so on, that would give us a pretty good clue as to what is going on. One of the problems, of course, is that we don't know how much work is handled by architects, and some inquiry into that would have to be made.

Another area that I think would give us an important clue to future decisions is that of financial commitments made by the large lending institutions, mainly the life-insurance companies and the large mutual savings banks. A project of the nature that we are discussing does not ordinarily go ahead until its financing has been arranged. It is very unlikely even that working drawings would be ordered unless the sponsors of a particular development were reasonably confident that the money would be in hand when they were ready to proceed.

Again this would be particularly true for income-producing property, which is generally financed with mortgages. It would be less true of industrial buildings. But the area of income-producing properties—mercantile buildings and apartments—is a very large one,

and it would be very important to get a clue of this sort if we could arrange it. There is nothing available in this area at the present time, although certain exploratory work is being done.

Our recommendation is that the whole area be studied cooperatively between the lending institutions involved and an appropriate agency, presumably the Federal Reserve Board, in seeing whether the series cannot be developed in a way that would yield the kind of results that we are discussing.

That is the substance of this section of the report, Mr. Chairman, and I think that unless there are questions, we may proceed with the remainder.

The CHAIRMAN. Before we proceed, I would like to state that Mr. Talle is in the position which I described to you earlier. He has another committee which is in the process of voting on some highly controversial matters. I want to make that apology for him, because he felt badly about having to leave.

Please continue.

Mr. FRIEND. The main bulk of my discussion will relate to improvements in the existing series on plant and equipment expectations.

While the data on plant and equipment expenditure expectations are subject to a number of limitations, they have made a significant contribution to our understanding of trends in investment and of trends in the economy generally.

In a short time they have become one of the best known indicators of business conditions. As a matter of fact, I think one of the first things a business forecaster does is look at the series on plant and equipment expectations. I am not implying, of course, that he does not do anything else.

There is almost universal agreement that this series constitutes the most useful data available on projecting short-term movements in plant and equipment. Predictive errors have been fairly small. This represents a very creditable performance, for two reasons: First of all what we are trying to do here is predict the most dynamic element in a dynamic economy, and economists have heretofore considered that this might represent the major stumbling block to successful economic forecasting.

Secondly, of course, we have lived with this series for a relatively short time, and presumably its performance should improve as it ages.

In view of this performance it seems desirable to remedy the more important gaps and deficiencies which characterize the series at the present time, particularly where these gaps and deficiencies can be remedied at rather moderate cost.

Moreover, we feel that this series constitutes an almost unique opportunity to delve into the nature of and the factors determining investment decisions, and that the data could be used to cast needed light in this field for policy as well as predictive purposes.

Now, I think the best way of proceeding would be to turn to page 5 of the report, where we give our recommendations for the relevant section of the report.

I will discuss fairly briefly the first six recommendations. The seventh, which relates to farmers' intentions to invest in plant and equipment, will be handled by Mr. Butler.

The first recommendation is that the sample coverage of the data on plant and equipment expectations should be expanded to fill in the more significant gaps, and the desirability of modifying blowup procedures should be investigated.

The more important part of this recommendation simply relates to the fact that there are certain major industry groups where the data are pretty sadly deficient and where we feel the gap should be taken care of.

In addition to limitations imposed by inadequacy of industrial coverage, another type of limitation that we had in mind here was that posed by the fact that new firms are not covered by these surveys so that we basically get the trend in investment of established firms.

The second recommendation is that detailed tests should be carried out periodically to check the predictive accuracy of the data.

Now, obviously, the usefulness of such data lies largely in their predictive value, not exclusively, but largely. If they could not predict, they would not be very interesting.

So, we felt much more work should be done than has been done to continuously evaluate predictive accuracy of these data.

If you will look at the data as a whole, in the past 5 years they have had an average error of perhaps 2 percent in predicting capital expenditures for a period of close to a year ahead, which is quite good, but the performance has not been nearly as good in a number of industry groups.

Moreover, when you look at the data on an individual company basis, there is so large a margin of error that we would want to study very intensively the reasons therefor before we could feel comfortable about assuming that this series will continue to perform as well in the future as it has in the past.

The third recommendation is that special surveys should be conducted to study the factors affecting the predictive accuracy of the data, as well as factors affecting investment decisions generally.

We have already found on the basis of analysis to date that the predictive accuracy of the data is influenced by such factors as size of firm, amount of investment, age of existing assets, and the level of unanticipated sales, which we know as we collect data on sales expectations as well as on plant and equipment expectations. We have found a number of other factors which affect the accuracy of these data.

On the other hand, we haven't gone nearly far enough in this direction. We should look further into the effect of a number of factors not now covered by these surveys, for example, the effect of anticipated prices on the accuracy of prediction of plant and equipment expenditures, the effect of financial arrangements, and so forth.

To give one other example, we do not even know the answer to such an elementary question as this: "What is the effect of the mechanical nature of a company's forecasting procedures on its ability to forecast?"

Thus we find certain types of companies, notably the very small ones, do not seem to forecast any better than some random forecasting device.

The reason could be, I feel, that such companies do not have any investment budget; do not have any formalized scheme or systematic

means of forward capital planning or forecasting, and simply supply the data to the Government as a matter of courtesy.

We have done virtually nothing along these lines to find out the relationship between how a company goes about setting up these investment expectations and the accuracy of the forecast.

Finally, in connection with this recommendation it is extremely important to analyze the factors affecting investment decisions, not only to help protect business investment but also to analyze the effect of given policies and institutional arrangements on investment.

To give just one illustration, you could use these data to determine the extent to which lack of adequate financing, by which I mean financing in various forms under specified conditions, deters capital expansion. The whole category of problems of what affects investment could be investigated through these special surveys.

The fourth recommendation is that the feasibility of providing additional breakdowns of plant and equipment expenditure expectations should be investigated, with initial emphasis on improving the available data segregating plant and equipment.

I might note that the first three recommendations are broader or more basic in a sense than the fourth.

The first three relate in large part to providing adequate data for investment as a whole. The fourth relates to supplying additional breakdowns of the aggregate figures.

We think that generally it is much more important to obtain as reliable and as fast as possible, estimates of aggregate capital outlays in the future than to obtain data on the details of such capital outlays. We feel, however, there may be one exception to this general rule and that is in the area of plant versus equipment.

We would like if possible to use these anticipatory surveys to segregate plant from equipment, the two now being combined in the Government series.

We indicate in the report some of the difficulties involved but we point out that it may be possible to do this at least on a limited basis.

I might note briefly a couple of the breakdowns which we definitely do not recommend at this stage, since a number of business economists have indicated an interest in getting this additional information. We do not recommend getting detailed industrial breaks or regional breaks, both having a lot of appeal, obviously, for individual businessmen. The first reason we didn't recommend doing this at the present time is—the reason I indicated earlier—that we feel that the availability of these data to predict aggregate trends is much more important than their ability to predict trends in any one field or area.

Secondly, the amount of resources that would be required would be extremely large, since you would need very large samples to get adequate data of this nature, and, moreover, you would have to get the data on a completely different basis. They would have to be on a plant rather than on the present company basis.

Clearly, you would be burdening both the companies and the Government collection agencies much more than you do now.

The fifth recommendation notes the desirability of exploring the timing of collection of the annual survey data on expectations, and the period covered by the quarterly surveys.

It points out that as a minimum these matters should be explored, since it is perfectly obvious that for anticipatory data of this sort you

want the data to be as up to date as possible. You want major changes in plans to be reported as promptly as possible. And, of course, you want the data to cover as long a time period ahead as they can.

To some extent the present timing of the surveys is a reflection of the way businessmen get up their budgets, and to this extent it may be difficult to change.

On the other hand, the present timing is to some extent fortuitous and it may very well be you can enhance the value of these data by altering the timing of, and period covered by, the surveys.

The sixth recommendation is that the predictive value of longer term capital programs, that is, those covering more than 1 year, should be further studied.

It is not contemplated here that the Government agencies involved conduct regular surveys of long-term capital programs, but simply they would look further into the value of such data, and, secondly, assuming they turn out to be valuable for certain purposes, which we are inclined to think is true, to conduct special surveys of this nature from time to time.

I think that is all on the first six recommendations, and Mr. Butler will want to summarize the seventh.

Mr. BUTLER. In talking about farmers' intentions to invest, we are exposing one of our areas of ignorance. I can do that pretty quickly.

We have at the present time no current reporting of what farmers actually are spending for new plant and equipment, nor do we have any surveys of their intentions to spend in the future.

This is obviously an important area. I think it runs to something on the order of \$5 billion a year. Consequently, it is our recommendation that we explore the possibility of collecting information on farmers' intentions to invest.

This might be done by broadening the scope of Survey of Consumer Finances, which has some farm families in the sample. Farms, of course, are in general relatively small units, and we have discovered that small manufacturing companies in general do not plan ahead, or if they do, do not plan accurately, so you would probably have the same problem in attempting to get accurate intentions from farmers as from small companies. But I think the problem might be explored and it would be of great service if you could at the same time collect information on what they are actually spending, which we lack now.

The CHAIRMAN. Do other members of the panel who have not spoken wish to comment?

If not, I would like to call on Mr. Young to ask questions or make any comment that he wishes to.

Mr. YOUNG. Mr. Chairman, in response to your committee's request we undertook to bring together the very best talent that this country has available in the several fields which the committee requested us to cover. I think that this report and the quality of the people in front of you testify to our success in that endeavor. They have done a very excellent job.

The second thing that I would like to stress in connection with the work of the committee is the very fine cooperation we received from all groups, especially the Government agencies that have an interest or a responsibility for statistical information in this field, particularly the Department of Commerce and the Bureau of the Budget, and also

the different business organizations that have an interest both directly as users and suppliers of information.

The work of the consultants' committee has been carried on in very favorable climate, and the outcome of their report is definitely on the constructive side. The report points out that we need or could very well profit by having much improved information in this area of plant and equipment expenditures, and in particular of expectations regarding those expenditures with respect to the importance of the field in terms of the level of business activity, and level of employment, there can certainly be no question.

We have, in setting up these consultant committees, turned the responsibility for the conduct of the work over to them under the general feeling and impression that they were comprised of extremely competent and expert economists with regard to their areas of information. Accordingly, they have had a free hand to move ahead within the terms of reference that we laid down or to some extent were self-imposed by the committees themselves in view of the time schedule to which they were restricted.

They have developed their recommendations on an independent basis. They represent, I think, a thoroughly considered and wise judgment. They are very helpful.

The CHAIRMAN. Thank you, Mr. Young.

Mr. Bowman, do you wish to make any comments?

Mr. BOWMAN. Thank you, Mr. Chairman. I think at the very beginning I would like to express the gratification that my office, the Office of Statistical Standards, has that you were able to induce the Federal Reserve Board to undertake the gathering together of these expert committees to formulate improvements in very important statistical areas.

The reports that I have read to date are quite excellent. This one shows the expertness of its authors in the fields covered; and their recommendations stand out quite clearly.

The Office of Statistical Standards welcome these recommendations in particular because it is going to try to stress and highlight in the coming year the improvement and development of series which can act as economic indicators.

It seems to me the reports of all of these committees are directly in line with the Office of Statistical Standards assessment of important areas needing attention. In many cases this does not mean the development of new series but merely the improvement of series we already have. It should also be recognized that cooperation should continue between Government and private industry in the development of these series and that not all statistical series have to be prepared by Government.

It is also rather obvious that improvement of statistical programs requires attention to several elements that have been stressed by this report, that is, the accuracy of the series, the accuracy of the series and the extent to which it allows us to anticipate the movement in other series.

I am very hopeful that this work can really be implemented in the year ahead but I think I would be falling short of my responsibility if I did not point out, as it has been partially pointed out already, that these improvements require an expenditure of funds. Most of the improvements in statistics covered by this report were included in the

President's budget for 1956. Many of these requested appropriations have been denied by the Congress. OBE in particular was budgeted for a small increase of \$100,000, which was denied. All of the contemplated improvements in construction statistics were likewise denied. In the light of these factors our program in 1956 has to be carried forward with the resources that are at our disposal. This will be quite difficult.

With respect to the specific recommendations, I think I have only minor suggestions. I presume that the emphasis of the committee in the first section of its report on new series covering shipments, new orders, and unfilled orders is not so much an emphasis on the need for new series as it is to getting the breakdowns or breakouts that will allow the special uses they have in mind. I think our inclination is to get the breakouts and this may lead to the development of new series but our emphasis would be on improving the present series on shipments and orders. I think it can be done, but it is a job that OBE will have to do.

A demand for improved series is often interpreted as a criticism of existing data. Our Advisory Council on Federal Reports has also indicated that these order series need major improvements. I am sure that OBE would agree to these needs but it is understandable that they are limited in making the necessary revisions because of the costs involved.

I will skip over the section of the report dealing with construction because I have already noted the difficulty of doing much in this area during the coming year, although we will certainly try.

With respect to the third area of the report, it seems to me it is a very interesting area. It has been developed to the point where to go further requires us to assess what really has been accomplished. For this purpose we need more research studies. I think that is one of the things Mr. Friend emphasized. Personally I was well pleased when I examined the quarterly series on anticipated plant and equipment expenditures and made some attempts to use it to describe what has happened over the past. In other words, I took the final quarterly figures and saw to what extent, if I used those, I got different estimates of ups and downs than if I used the anticipatory series. The results did not indicate perfection—I think there were 6 out of 26 cases in which they moved in different directions—but on the whole this seems to be a promising area for further work.

Results to date, in the light of the limited resources that have been put into this work, seem to me to warrant considerably more than we have been able to give it. It looks promising and I think we should continue it.

I do want to emphasize that while it looks promising, there is no certainty that it will prove entirely satisfactory. Many things can happen to make what looks promising not turn out to be so promising, particularly if you are going to use it for forecasting purposes.

I think that is all, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Bowman.

Gentlemen, before Congressman Talle left he handed me some questions which he wished me to ask you.

The first one is:

In a memorandum on statistical needs submitted by the Council of Economic Advisers during this subcommittee's hearings last summer,

question was raised about the possibility of speeding up the reporting of certain series. The suggestion in regard to value of orders and shipments was as follows:

Weekly data on new orders and shipments would be a very helpful source of information on current trends in economic activity. It would appear to be statistically feasible to select a sample of key companies in manufacturing which could report weekly the dollar value of the new orders they receive and the shipments they make, thereby significantly supplementing the monthly data now available.

Would members of the panel give us their comments on the usefulness and feasibility of this proposal?

Mr. Terborgh?

MR. TERBORGH. My first reaction is to observe that the inflow of orders is so erratic that weekly reports would be extremely difficult to interpret. I doubt if there is any point in trying for a period shorter than a month. Obviously even monthly bookings are very erratic and my own inclination is—this does not prejudge the question for the other members of the committee—to proceed as we suggested, getting a clean monthly series and getting it out if possible by the middle of the following month.

The CHAIRMAN. Do others of you wish to comment?

MR. FRIEND. I wish to underline Mr. Terborgh's comments. Even with monthly data, as indicated by the two monthly surveys discussed in our report, the order series are uncomfortably erratic. Whereas I would have no objection to exploratory work on trying to get weekly reports on orders, I think it would be rather foolish to attempt any real full-blown collection program. I would also guess—but perhaps I shouldn't without the exploratory work—that satisfactory weekly data could not be compiled.

The CHAIRMAN. Would there be any disagreement with Mr. Terborgh and Mr. Friend? That generally represents the view?

Congressman Talle's next question is: How would you, the panelists, be helped in your own work if some or all of your suggestions for improved statistics were carried out?

MR. TERBORGH. First, I can speak from my own standpoint. I happen to be in an organization primarily concerned with capital goods, and I would like nothing better than a good monthly series of the kind we have outlined.

The CHAIRMAN. I take it this would make a significant contribution.

MR. TERBORGH. Yes, indeed.

The CHAIRMAN. Does anybody else have any comments which they care to make on?

I gather that Congressman Talle wanted to get a range of views on these questions.

MR. BUTLER. I have to prepare regular business forecasts, so, obviously, it would be of very great help to have this information.

I would like to stress particularly the timing problem. We have to make a forecast of general business activity for the year ahead not later than the first of December, so we need by that time some reading of capital expenditure plans.

The fact that the Commerce Department figures give us a very excellent result the following March is not of particular service in our efforts, but if the timing could be altered so you could get some sort

of reading in the late fall, I think it would be of great help to almost everybody in this unfortunate business of business forecasting.

Mr. COLEMAN. I am being asked to forecast right now these series which come out 4 months later and are not of much utility.

The CHAIRMAN. This emphasis apparently is not just a matter for academic study, but is a matter of very urgent and important means to a great body of decision-making people, in effect.

Mr. COLEMAN. There is no question about it. The apparent dependence of businessmen on forecasting is very grave. Certainly their appetite for it is certainly almost insatiable.

The CHAIRMAN. The panel has compiled a series of excellent suggestions in the broad area of statistics dealing with expectations for the purchase of plant and equipment, and capital expenditures in total. What would you consider the minimum balanced program to be undertaken if this area is to be covered adequately for the purpose of making general economic projections such as the Joint Economic Committee must use in its work?

Mr. TERBORGH. We undertook this task under two specific directives: First, we weren't to finger any particular agency as the presumptive agency to perform the suggested assignments. Second, we weren't to concern ourselves with budgetary or financial requirements of the program. Our job was simply to go over the field and suggest leads that we thought promising. For that reason we are caught without any budgetary program or any priorities for our proposals. I certainly wouldn't like to speak for the committee without a conference.

The CHAIRMAN. Would it be possible, without embarrassing anybody, or pursuing that too far to get here individual views, not committee views, as to ranking, or would that lead to embarrassment? I certainly don't want to embarrass any members of the panel.

Mr. TERBORGH. I think the committee members would be willing to respond by letter individually after they consider this question.

The CHAIRMAN. I think that would be fine.

(The following letters were subsequently received for the record:)

NEW YORK, July 22, 1955.

HON. RICHARD BOLLING,

Chairman, Subcommittee on Economic Statistics,

Joint Committee on the Economic Report,

Washington, D. C.

DEAR MR. BOLLING: This memorandum is written in response to your request that members of the Committee on Plant and Equipment Expenditure Expectations send you their individual views on priorities among the various recommendations submitted in the committee's report.

Before setting forth my views, may I point out that it is extremely difficult to assign meaningful priorities to projects of one field of economic statistics without far greater knowledge than is at my command of the problems in other fields. For instance, it would not appear wise to develop anticipation surveys to a high degree if such efforts held back needed improvements in statistics on actual performance.

The prime case in point is the present need for improvements in statistics on current construction activity. Personally, I would assign top priority among all new programs in the general field of Government statistics to this area. I believe the Budget Bureau program, which was recently rejected by Congress, is a well worked out and constructive one. While it would be relatively costly (my understanding is that \$800,000 a year is involved), I believe the benefits to the Nation as a whole would repay the program's cost many times over.

To turn to the specific recommendations in the committee's report, I would rate as most urgent the improvement in the sample coverage of the Commerce-SEC survey of plant and equipment expenditures expectations. To my mind, the need for special surveys to study the factors affecting the accuracy of the Commerce-SEC survey is intimately related to the need for an improved sample. We need to know far more than we know now about the factors behind investment decisions before we can interpret these surveys intelligently. We would need adequate samples to make meaningful analyses. While I am in no position to make an accurate estimate of the budget requirements involved, I would guess that the rough dimensions might run to about \$100,000 a year.

In the next place I would put the proposal for a monthly series on orders, shipments, and backlogs for capital equipment. If this can be done as part of the Commerce Department's "industry survey" the additional cost should be moderate. However, the timing of the Commerce survey would have to be speeded up considerably to make the results of greatest value to users. Even if a special survey is needed, it should be possible to work with a small sample of companies so the cost should be moderate (say \$10,000 a year). I see no reason why the questionnaire on new orders, shipments, and backlogs should not include a question asking each company to forecast its new orders for the quarter ahead. If this were done the only additional cost would be a small amount for tabulation.

Similarly, I should think a program to improve the Commerce-SEC plant and equipment survey should make it possible to get a breakdown of plans for plant construction at very little added cost. Done properly, this should provide a greatly improved measure of industrial construction.

In the field of construction expectations, I would place greatest emphasis on developing a survey of State and local government plans and exploring the possibility of obtaining mortgage commitment data. However, Messrs. Colean and Hoadley are far more experienced in this field than I, so I would defer to their judgment.

I would place at the bottom the proposals for exploring the possibility of a series on authorizations for capital commitments from business and a series on anticipated expenditures from farmers. While I feel that both areas will be explored, perhaps by graduate students working on dissertations, I doubt that regular surveys would yield results that match their costs.

My personal views can be summed up this way:

(1) The major and immediate problem is to get reasonably accurate statistics on current construction activity. This is the most costly program in the field of fixed investment statistics, yet it is the most necessary.

(2) Then we should work to improve existing expectations data—the Commerce-SEC plant and equipment survey, and possibly the capital equipment new orders component of the Commerce Department's industry survey. The required outlay should be relatively moderate. I feel strongly that a relatively small investment in improving these data and in developing our analysis of the underlying decisions to invest should yield very great returns in improving our knowledge of one of the key areas of the economy. What is needed is imaginative analysis and interpretation—oddly enough, these commodities come cheaper and yield greater benefits than do vast new statistical surveys.

(3) We should, however, be exploring new methods and techniques all the time. Much of this work might be done in universities, in private research organizations, or any other private agencies. But much of it should be done, or supported, by Government agencies. I feel that the recommendations of our committee offer some very promising leads in the field of plant and equipment.

May I take this opportunity to commend you and your associates on the joint committee for the constructive approach you are taking to the crucially important problem of improving the Nation's economic statistics. Better statistics can play a very great, though little appreciated, role in the difficult task of keeping our economy prosperous and growing.

Respectfully yours,

WILLIAM F. BUTLER.

WASHINGTON 6, D. C., July 26, 1955.

HON. RICHARD BOLLING,

Chairman, Subcommittee on Economic Statistics, Joint Committee on the Economic Report, Washington 25, D. C.

DEAR MR. BOLLING: Responding to your request for opinions as to relative importance among the several recommendations made by the Committee on Plant and Equipment Expenditure Expectations, I offer the following views:

1. *Improvement in the basic data on construction activity.*—Because the committee's report was concerned primarily with data on expectations rather than current activity, and because, at the time the report was prepared, there was the possibility of approval by the Congress of an adequate program for current construction statistics, the report was silent on this subject. Now that this program has been rejected, I want again to emphasize its importance. It is indeed fruitless to talk of dependable measures of future activity until we have reliable information on current activity. A program for statistical work to be done by the Departments of Commerce and Labor, as carefully reviewed by industry advisers and approved by the Bureau of the Budget, would cost between \$800,000 and \$1 million.

2. *Improvements in the data on plant and equipment expenditures.*—As our best developed statistical series in the expectations category, high priority should be given its further improvement and development as proposed in section III of the committee report. I would place especial emphasis on the recommendation to provide estimates on plant and equipment separately. I understand the entire program as outlined in section III would not come to more than \$100,000.

3. *Data on orders, shipments and backlogs of producers' equipment.*—This series, if it could be developed as recommended, promises to provide an exceedingly sensitive indicator of future activity. Mr. Terborgh has estimated the cost of carrying on this series at about \$10,000 a year.

4. *Exploratory projects.*—Encouragement and guidance should be given such studies as those suggested for obtaining information from architects about pending activity and from farmers as to their prospective investments in buildings and equipment.

I appreciate the opportunity of appearing before your subcommittee and for making this further expression of my opinions.

Very sincerely yours,

MILES L. COLEAN.

PHILADELPHIA, July 20, 1955.

HON. RICHARD BOLLING,

Chairman, Subcommittee on Economic Statistics, Joint Committee on the Economic Report, Washington, D. C.

DEAR MR. BOLLING: This letter is in response to your suggestion yesterday that members of the Committee on Plant and Equipment Expenditure Expectations send you individually their views on priorities among the recommendations made by the committee.

I want to indicate initially that I feel that the area of plant and equipment data in which the committee has been working is one in which the pay dirt in recent years has been unusually rich and where a relatively small amount of additional resources would pay a high rate of return. As a result I would like to see all of the committee's recommendations implemented. However, I recognize the need for establishing priorities even among desirable ends.

The recommendations, other than those of an exploratory nature, which I consider most urgently in need of implementation are: (1) The expansion of the sample coverage of the data on plant and equipment expenditures to fill in the more significant gaps in the Commerce-SEC series, including the grossly inadequate data for certain industry groups and the absence of data for new firms; (2) the development of a new monthly series on orders, shipments, and unfilled orders for capital equipment; and (3) the improvement of construction statistics, including those on building permits and contract awards. All three of these recommendations would require additional resources, but the amounts involved should be quite small except for the last item.

Equally important in my view are three essentially exploratory or research recommendations made in the committee's report: (1) The conduct of special surveys to study the factors affecting the predictive accuracy of the expectations

data, as well as factors affecting investment decisions generally; (2) an exploratory survey of farmers' intentions to invest in plant and equipment; and (3) an exploratory survey of anticipated capital expenditures by State and local government bodies.

I think that with comparatively small amounts of new funds allocated to the Government agencies involved substantial progress could be made. This will especially be true if optimum use is made of the work now being done by private statistical organizations. In addition, the Government agencies might be able to "subcontract" to universities and other private research organizations, at little or no cost, part of the fairly extensive exploratory work which the committee has recommended. However, much of the work, including coordination, can only be done by the Government agencies and, in my opinion, further progress will be rather limited in the absence of appropriations for this purpose.

Sincerely yours,

IRWIN FRIEND.

LANCASTER, PA., July 28, 1955.

HON. RICHARD BOLLING,

*Chairman, Subcommittee on Economic Statistics, Joint Committee on the Economic Report, Congress of the United States,
Washington, D. C.*

DEAR MR. BOLLING: Although I was unable to meet with your committee to consider the report of our Committee on Plant and Equipment Expenditure Expectations, I am glad to have the opportunity to express my views on the priorities to be assigned on the committee's recommendations.

Since our committee was unanimous in its views, it is clear that we urge serious consideration for each of the recommendations. No doubt because of my long-standing interest in and great concern about construction statistics I must assign top priority to improvement in basic construction data. As has been stated many times previously, there are major deficiencies in this field, not alone in the area of expectations but certainly among measures of current activity. The best cost estimates for needed improvements range between \$800,000 and \$1,000,000.

Inasmuch as efforts to win congressional approval of these needed funds have proved unsuccessful for several years, I believe a new approach must be taken to this matter. Frankly, those of us who are deeply worried about the implications of inadequate construction data for both public and private policymaking must learn in detail why so many Members of Congress fail to appreciate the need for better information in the building field. Ours is no special plea but an effort to insure that policy decisions, particularly in Government, affecting construction will be in the best interests of the Nation. Obviously up to now there has been utter failure in building or stating the case for improved construction data. Is the issue being confused by the fact that several Government agencies requesting separate appropriations are involved? Is the root of the problem to be found in some inherent suspicion of appropriations for "statistics?" Is there some feeling that the available data are "all right" under present conditions of high building activity? Or just what is the basis for lack of interest or support for better construction information? It seems unwise to start down the long road toward another year's appropriation without answers to at least some of these questions.

My interest, of course, is not concerned solely with construction and I would assign a very high priority to improvements in the statistical series dealing with plant and equipment expenditures as outlined in section III of our committee report. The cost involved here is probably in the neighborhood of \$100,000.

Other important recommended improvements worthy of particular attention in my judgment include strengthening of the series on orders, shipments, and backlog of producers' equipment.

As much as I am keenly interested in furthering exploratory work in expectations statistics, I am convinced that the biggest job to be done at the moment is to improve the series currently in effect so that the Nation will not suffer from policy decisions based upon inadequate data. I am firmly convinced that the business cycle remains a serious problem despite many commendable measures which have been taken in Congress, elsewhere in Government, and business. Accordingly, I believe it is essential that economic intelligence in the areas of

current activity and expectations be improved so that errors in scope and timing of policy decisions with respect to the business cycle can be held to a minimum.

Once again, I am sorry that company business prevented me from being on hand at your recent committee meeting.

Thank you for your interest.

Sincerely yours,

WALTER E. HOADLEY, Jr.

WASHINGTON 6, D. C., July 19, 1955.

HON. RICHARD BOLLING,

Chairman, Subcommittee on Economic Statistics,

Joint Committee on the Economic Report, Washington, D. C.

DEAR MR. BOLLING: During the report this morning of the Committee on Plant and Equipment Expenditure Expectations, the suggestion was made that the members of the committee send to you individually their views on priorities among the recommendations of the committee, and on the budget demands implied in these recommendations.

It should be understood that in this letter I am speaking only for myself, not for the committee. I assume that other members of the committee will speak for themselves.

Let me make one preliminary observation. While the committee deliberately refrained from indicating the agencies most appropriate for carrying out its recommendations, it should be obvious that not all of the projects suggested would fall on the Federal Government. Some of them, particularly the exploratory studies, could well be carried on under the auspices of universities and private research organizations. Others fall logically to existing commercial agencies already compiling data in the field. So far as the work can be adequately performed in this fashion it should be encouraged. The Federal Government might serve in such cases as a catalytic and coordinating agency.

With this cautionary comment, let me turn to projects that will presumably devolve upon Government agencies. Here I have no intention of attempting a systematic priority ranking, but I may suggest a few projects that seem particularly urgent. One is the project mentioned in section I of the report, the development of a new series on orders, shipments, and backlogs of producers' equipment. Another is the basic program for the improvement of existing Government statistics in the construction field which I understand has twice been proposed by the Bureau of the Budget and twice rejected by Congress. Still another is the improvement of the sample coverage of the Commerce-SEC series on plant and equipment expenditure expectations and the provision of a breakdown between plant and equipment (recommendations 1 and 4 under sec. III).

As for the probable cost of these projects, I can offer only conjectures. It seems to me that the setting up of the proposed series on equipment orders, shipments, and backlogs, should not run over \$10,000. Once set up, it should be inexpensive to maintain. As for the basic program for the improvement of construction statistics, the estimates of the Bureau of the Budget are better than any I could make. These you have at hand. The two improvements mentioned in the Commerce-SEC series would presumably cost a moderate amount, best estimated by the two agencies concerned. I can only say that it does not seem to me a big-money project.

My thought is that if the Federal Government would make a start along the three lines just indicated, would enlist the cooperation of universities and research institutions in the pursuit of our exploratory recommendations, and would encourage private collectional agencies now in the field to improve their own product from the standpoint of public use, the result would be solid progress in the direction we have indicated.

Respectfully yours,

GEORGE TERBORGH.

The CHAIRMAN. This brings up, one of the purposes of the initial request. It has been stated a number of times both directly and indirectly that the programs which now exist are not now necessarily supported by the Congress. At least part of the reason for the original action of the subcommittee in requesting this information and still very much its purpose is not to accept these very fine reports and just forget about them. One of our great dilemmas is making this field, which is not necessarily very well understood by a large number of Members of Congress, either as to its importance or as to its general outlines, much less as to its details, comprehensible not only to Members of Congress but to a broader segment of the people of the country, on the theory that the wider the understanding, perhaps the greater support for expenditures of funds. The more we, as individual members of the committee, show real interest in the field, the more we are able to demonstrate the practical utility of this series or that series in certain functions of a specific committee of the Congress, or to the Congress in its relationship to the needs of labor, of industry and of business generally—obviously the better chance we have of gradually building up an understanding and a sympathy on the part of the people charged with appropriation matters in committees in Congress and the Congress as a whole. That is why I raised this question, which I suspected at the outset might be a widely embracing one. We need—and it is understood this is obviously not the particular function of your group—hooks to hang our arguments on in pursuit of the objectives of the program recommended by the President. That is why I asked that question.

Mr. TERBORGH. May I make one observation, Mr. Chairman?

The CHAIRMAN. Yes.

Mr. TERBORGH.—A great many of our suggestions will not come as a surprise to the Government agencies compiling the statistical series discussed. I suppose most of them have been thought of, but have failed of execution for budgetary reasons. We do not imply criticism of these agencies in suggesting improvements in their present procedures.

The CHAIRMAN. I would appreciate it if it is possible and feasible and you consider it proper, if we could have individual responses on what are the most important, new programs in relation to the function of the Joint Economic Committee. If that proves embarrassing to anyone I will understand if no response is given.

How much of a burden on the reporting firms would be created by the proposal on pages 8 to 12, for a new monthly series on equipment orders if you break out even to the detail suggested?

Mr. TERBORGH. I am not aware of any attempt to do exactly this, and one can only conjecture as the difficulty it will entail for the respondent companies. My own feeling is they shouldn't be harassed into doing a lot of expensive bookkeeping. If there are some lines

of their production that readily break out and are appropriate for inclusion in the series, well and good. Companies should be encouraged to break out what they readily can even though they cannot do a complete job.

As I said in my formal remarks, many breakouts can be made for plants and division, which have their own books. There will be other cases where breakouts call for new compilations of the company's records. Since the object is to get a representative sample of equipment, breadth and variety are more important than the sheer volume of coverage. It should be possible to avoid undue harassment of cooperating companies.

The CHAIRMAN. You feel that it could be accomplished, I gather, without any undue burden if it were approached reasonably and cooperatively?

Mr. TERBORGH. I think so.

The CHAIRMAN. On pages 12 and 13 you talk about quarterly forecasts of equipment orders. How far ahead would you expect to go?

Mr. TERBORGH. We would get just the pending quarter. The forecast would be collected shortly before the beginning of the quarter. Of course, we might get it somewhat earlier, depending upon when the quarterly forecasts have crystallized. Practice differs here. I am sure we would find some companies that have pretty well developed forecasts 2 or 3 months prior to the quarter, and others that wait until they are pretty close to it. We would have to take a timing that would conform to the convenience of the bulk of the respondents.

The CHAIRMAN. Are there any further comments the members of the panel would like to make?

Mr. TERBORGH. I should like to reciprocate the compliments Mr. Young paid the committee and say that our relations with the Federal Reserve Board left nothing to be desired.

It has been a pleasure to be associated with the Board and its staff in this work.

The CHAIRMAN. I would like to express the thanks of the subcommittee to the members of the panel and all the agencies concerned for their cooperation and very excellent work, and assure the members of the panel that at least insofar as the subcommittee is concerned—and I am sure this applies to all the other agencies involved—this excellent work will not gather dust on somebody's shelves. We intend to pursue it as assiduously as our capacities and facilities enable us. I am sure each of us—and I think I can safely speak for every member of the joint committee—is profoundly concerned that we improve, in fashions that are feasible and practicable, the basic economic information on which so many decisions have to be made. This subcommittee is now, as I understand it, a permanent subcommittee, and we have a series of other hearings planned in the future. The next one is on savings and business inventories statistics, and will be held on July 26, at 10 a. m. in room 1301, New House Office Building.

The subcommittee now stands adjourned.

(Whereupon, at 11:45 a. m., the subcommittee recessed to reconvene at 10 a. m., Tuesday, July 26, 1955.)

REPORTS OF FEDERAL RESERVE CONSULTANT COMMITTEES ON ECONOMIC STATISTICS

TUESDAY, JULY 26, 1955

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT COMMITTEE ON THE ECONOMIC REPORT,
Washington, D. C.

The Subcommittee on Economic Statistics of the Joint Committee on the Economic Report met at 10 a. m., Hon. Richard Bolling, chairman; presiding.

Present: Representatives Richard Bolling and Henry O. Talle.

Others present: Ralph A. Young, Director of the Division of Research and Statistics, Federal Reserve Board; Raymond T. Bowman, Office of Statistical Standards, Bureau of the Budget; and John W. Lehman, clerk.

The CHAIRMAN. The subcommittee will be in order. This is the second of a series of five panel discussions to be held by the Subcommittee on Economic Statistics for the purpose of presenting the findings of consultant committees or task groups sponsored by the Board of Governors of the Federal Reserve System, to review statistics of inventories, savings, consumer expectations, plant and equipment expectations, and general business expectations.

Last week the subcommittee heard from the task group reviewing statistics of plant and equipment expectations. Today we are meeting with a panel of distinguished analysts who have examined the statistics on savings. We are grateful to the Federal Reserve Board for organizing this study and especially, appreciate the cooperation of the members of the panel.

In addition to the members of the group which prepared the study, we have asked Mr. Ralph Young, Director of the Division of Research and Statistics, Federal Reserve Board, and Mr. Richard T. Bowman, Office of Statistical Standards of the Bureau of the Budget to sit with us this morning.

At this point I should like to insert in the record the report of Consultant Committee on Savings Statistics organized by the Board of Governors of the Federal Reserve System at the request of the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, July 1955.

(The material referred to follows:)

STATISTICS OF SAVING

REPORT OF CONSULTANT COMMITTEE ON SAVINGS STATISTICS

*Organized by the Board of Governors
of the*

Federal Reserve System

at the request of

the Subcommittee on Economic Statistics

of the Joint Committee on the Economic Report

July 1955

LETTERS OF TRANSMITTAL

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM

July 11, 1955

The Honorable Richard Bolling, Chairman,
Subcommittee on Economic Statistics,
Joint Committee on the Economic Report,
House of Representatives,
Washington (25) D. C.

Dear Mr. Bolling:

In fulfillment of the request made of the Board by your Subcommittee for an evaluation of gaps in available statistical information covering the fields of savings, business inventories, and business and consumer expectations, there are enclosed copies of the reports of three of the five task groups which the Board organized for the purpose.

The completed task group reports transmitted with this letter are:

1. Report of the Consultant Committee on Savings Statistics;
2. Report of the Consultant Committee on Plant and Equipment Expenditure Expectations;
3. Report of the Consultant Committee on Consumer Expectations.

The report of the Consultant Committee on General Business Expectations is scheduled for completion by August 1. The report of the Consultant Committee on Inventory Statistics is expected to be completed by October 1. These reports will be transmitted to you as soon as received.

The reports are in the same form as submitted to us by the consultant committees concerned. Prior to the hearings to be held by your Subcommittee, the task groups may wish to make minor modifications or editorial changes, but the text will remain substantially unchanged.

If it would be helpful to your Subcommittee in getting the widest circulation and use of these reports, the Board would be glad to

consider publishing them in pamphlet form, apart from the hearing publication. This form of publication would make the reports more readily available to interested public and private organizations and to university and other interested specialists and individuals.

Sincerely yours,

(Signed) W_M. McC. MARTIN, JR., *Chairman*

June 27, 1955.

The Honorable Wm. McC. Martin, Jr., Chairman,
Board of Governors of the
Federal Reserve System,
Washington 25, D. C.

Dear Mr. Martin:

The Committee on Savings Statistics, set up in accordance with your letter of November 22, 1954, herewith submits its report adopted at the meeting of June 16, together with the accompanying appendices. Some of the limitations of the report are indicated in Section I. The Committee is aware that a few of the subjects with which the report deals have also been covered by one or more of the other four Committees that are now reporting to you, but has not had an opportunity to examine the findings of the other Committees on these points of common interest.

The Committee wishes to express its thanks to the Board of Governors for having made available the services of Mrs. Dorothy Projector as the Secretary, and for assistance in many other directions.

Sincerely yours,

(Signed) RAYMOND W. GOLDSMITH, *Chairman*

SOLOMON BARKIN

SIMON KUZNETS

JAMES J. O'LEARY

ROY L. REIERSON

EDWARD SHAW

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STATISTICS OF SAVING

SUMMARY

Although statistics of saving have been considerably improved since their first appearance less than twenty years ago, their users in business, universities, and government seem to feel that the figures now available do not reveal changes in saving with the promptness, in the detail, and with the reliability that their importance for the analysis of the economy demands. Users have asked for greater accuracy, fewer revisions, speedier appearance, more detail, greater flexibility in concepts, and greater consistency among the different estimates now available; and their specific demands have differed greatly in accordance with their needs. While not all these demands can be satisfied, the Committee feels that substantial improvements are necessary to make the statistics of saving an adequate tool of economic and business analysis, and that such improvements do not require major changes in our basic economic and financial statistics.

Adequate statistics of saving are needed because they provide the most important information on one crucial aspect of our economy's growth, the sources from which growth is financed, and the channels through which flow the funds necessary for growth. Detailed and reliable information on the saving process is required for the study of structural changes in the rate and pattern of economic growth. It is also essential, and should be promptly available, for an analysis of the capital market as well as for current observation of business cycles. Information on the saving process in all these aspects is of great value in making policy and operational decisions by private business and government. In the private area, saving statistics are of particular value in determining investment policies and appraising availability of funds from the capital market. In the field of public policy saving statistics are of importance in the formulation of tax, monetary, and credit policy; in debt management; and in the operation of social welfare programs.

The Committee feels that more rapid progress in the field of saving statistics has been impeded by two factors, lack of aggressive sponsorship and inadequacy of funds.

Measured in terms of the importance of the information, the funds now being spent within the Federal Government on statistics of saving are extraordinarily small. They apparently are not much in excess of \$20,000 per year, and they seem to have been declining. The substantial and necessary improvements in the statistics of saving cannot be achieved unless these allocations are markedly enlarged. The great importance of adequate statistics of saving does, in the Committee's view, fully justify such increases.

Provision of sustained leadership presents a more difficult problem which is aggravated by the fact that statistics of saving generally are only a by-product and minor activity and hence sometimes a stepchild of the different agencies that produce them. The Committee, therefore, recommends that the responsibility for formulating and developing programs in the field of saving statistics and their sponsorship be lodged in *one* place within the Federal Government—not necessarily in one of the agencies now producing statistics of saving—but that the actual compilation of statistics be continued on the present decentralized basis. It is beyond the Committee's responsibility to suggest the exact form which such arrangements could or should take, but the principle of centralization of responsibility is, in the Committee's opinion, essential to the realization of its objectives.

The Committee's report contains a number of recommendations for the improvement of saving statistics which are summarized below. While in the report the recommendations are divided into those that can be carried out in the near future and with small effort, and those that will require a longer time and substantial additional funds, they are grouped here according to the major types of saving to which they refer: personal saving, corporate saving, and government saving.

1. **Personal saving.** Of the statistics now available in the field of personal saving, further development and expansion of the estimates of aggregate saving and its components by the balance sheet approach (used, e.g., by the Securities and Exchange Commission) give most promise of meeting the demands of business, government, and university users. To permit intelligent analysis of the figures, much more of the underlying data, as well as detailed descriptions of methods and sources, should be currently made available to users.

a. *Monthly indicators of saving.* In addition to the present quarterly and annual statistics, a set of monthly indicators of personal

saving should be developed. They would not be as comprehensive or as elaborate as the data now made available, but could be released within three to four weeks after the end of the month.

b. *Saver groups.* (i) The statistics of personal saving need to be presented separately—in the aggregate and by components of saving—for at least four groups of savers—nonfarm households, farmers, unincorporated business firms, and private nonprofit institutions—all of which are now commingled in one aggregate for personal saving.

(ii) Among the steps which should be explored in effecting this separation is the breakdown, on the basis of institutional records, of items like saving through bank deposits, savings and loan associations, life insurance, U. S. savings bonds, and common stocks.

(iii) Of the different groups of savers, the saving statistics of unincorporated business firms are most urgently in need of thorough improvement. This may require development of current financial reports from a sample of such firms.

c. *Forms of saving.* (i) Need for improvement in the statistics is greatest for saving through real estate other than one- to four-family dwellings, through privately held mortgages, and through securities that are not distributed by the investment banking machinery.

(ii) Some forms of saving not now segregated should be shown separately, particularly saving through private pension funds and pension funds of State and local governments.

(iii) Estimates should be provided of personal saving in the form of consumer durables.

(iv) The statistics should show, wherever possible and relevant, the gross flows of funds involved in the saving process—e.g., purchases and sales of a given type of security—rather than only the net balance of transactions.

(v) Saving through retirement of outstanding debt should be estimated separately from dissaving in the form of incurrence of new debt, particularly in the case of mortgage debt.

(vi) Contractual forms of saving, including contractual debt repayment, should be shown separately in the statistics.

d. *Sample surveys of household saving.* While these surveys hold out great promise for a better understanding of saving practices of households, considerable additional experimentation will be required before the value of survey data as supplements to measures of aggregate saving can be regarded as established. This will call for a number of special studies designed to test reliability of the data and to explain apparent discrepancies with estimates of saving from other sources. These studies are particularly needed for households in the upper and very low income groups.

2. *Corporate saving.* The estimates of sources and uses of funds, which are now available only on an annual basis for all nonfinancial groups together, should be developed to the point where (a) they can be put on a semiannual and later a quarterly basis; (b) figures are available separately for major industry groups; and (c) they can be presented separately for large, medium-sized, and small corporations. Probably the most promising approach is the expansion of the *Quarterly Financial Reports*, now collected by the Federal Trade Commission and the Securities and Exchange Commission for manufacturing corporations, to include corporations in trade, mining, and service industries, and possibly in construction and real estate, and the collection of similar data for different groups of public utility and financial corporations with the assistance of the supervisory agencies.

3. *Government saving.* Estimates should be prepared on the saving of Federal, State, and local governments along methods parallel to those now applied to the saving of households, corporations, and unincorporated business firms. This will involve the segregation of capitalizable expenditures (separating those of military character) and the development of depreciation allowances for the different types of tangible assets owned by the government. Once these figures are at hand, estimates of aggregate national saving, not yet available on a consistent basis, will become possible.

I. SCOPE AND PURPOSE OF REPORT

1. *Organization and membership of committee.* The Committee on Saving Statistics was appointed by the Board of Governors of the Federal Reserve System in accordance with the request of the Subcommittee on Economic Statistics of the Joint Committee on

the Economic Report to “. . . explore, in cooperation with executive agencies, the adequacy of present statistics in three basic areas: (1) inventories, (2) savings, and (3) consumer and business expectations.”¹ The scope of the Committee’s work was set forth in a letter of November 22, 1954, by Chairman Wm. McC. Martin, Jr., which is attached as Appendix A.

The members of the Committee were:

Raymond W. Goldsmith, Member of the Research Staff of the National Bureau of Economic Research, and Professorial Lecturer, American University; Chairman

Solomon Barkin, Research Director, Textile Workers Union of America

Simon S. Kuznets, Professor of Political Economy, The Johns Hopkins University

James J. O’Leary, Director of Investment Research, Life Insurance Association of America

Roy L. Reiersen, Vice President, Bankers Trust Company

Edward S. Shaw, Professor of Economics, Stanford University, and Research Associate, Brookings Institution

Dorothy Projector, Division of Research and Statistics of the Board of Governors, served as the Committee’s Secretary.

The Committee held five meetings in Washington and New York with groups of producers and users of statistics of saving within the Government, business, and universities. A list of participants will be found in Appendix B. These meetings were based on documents which the participants, as well as some experts unable to attend in person, had prepared in response to the Committee’s questions regarding participants’ experience with the existing statistics of saving and their suggestions for improvements. A tabulation of recipients’ answers to a questionnaire (attached as Appendix C), distributed by the Committee to supplement other submissions, is given in Appendix D. Two members of the Committee visited the Survey Research Center at the University of Michigan, which conducts the Survey of Consumer Finances, to confer with the staff and to

¹ U. S. Congress, House, 83d Cong., 2nd Sess., *Report No. 2628*, p. 6.

obtain a first-hand impression of the Center's operations. In addition, the Committee met five times to discuss the progress of the inquiry and the text of this report. The Committee has also examined the literature on saving statistics and suggested improvements, in particular the reports and some documents of the Inter-agency Committee on Savings Estimates which was operative in 1954-55 under authority of the Office of Statistical Standards of the Bureau of the Budget.

These discussions and documents, together with the practical experience of the Committee members with the problems of saving statistics, constitute the basis of this report. The Committee is fully cognizant that, in the relatively short time available, in view of the other duties of its members, and given its limited staff, it could not fully comply with the request of the Joint Committee on the Economic Report for ". . . basic research into, concepts, existing data, sources and procedure for improving . . ." the statistics of saving, but hopes that it has discharged its duty of making "a thorough review" of these matters.

2. Arrangement of report. This report, apart from its short introductory section, is divided into three parts. Section II deals with the concepts and objectives of statistics of saving. The Committee felt that a brief discussion of the position of saving within systems of national accounts that are now widely used in economic analysis; of the concepts of saving that are relevant for statistics of saving; and of the main objectives to which statistics of saving have been put, was indispensable for a full understanding of the Committee's recommendations. The summary of the main problems involved given in the pages immediately following (subsection 3) may, however, suffice for many readers.

Some familiarity with the character and scope of the existing statistics of saving was likewise regarded as necessary for understanding the Committee's recommendations and for putting them into appropriate perspective. A brief sketch of these statistics is therefore given in Section III, and a more detailed and technical description is provided in Appendix E for readers who want to make a closer study of the statistics now currently available.

Finally, Section IV contains the Committee's recommendations. It starts with a discussion of the principles that have guided the

Committee in selecting its recommendations and in formulating them. This is followed by the individual recommendations, set forth in sufficient detail to indicate their nature and the reasons for them, but without as a rule entering into the operational problems involved in putting the recommendations into practice, although these have been given due consideration in the Committee's deliberations.

It may be well to state at this point that the Committee has regarded it as its main task to propose an integrated long-range plan for the supplementation and expansion of the statistics of saving now available, that would satisfy all reasonable demands from business users and from economic analysts. The minor and more technical improvements in the statistics that can be made without serious difficulties have been treated summarily or passed by altogether. This could be done the more easily as they have been covered adequately in the recent report of the Interagency Committee on Savings Estimates, as well as in some of the documents submitted to the Committee, that are available to the interested Government agencies.

3. Significance of statistics of saving. The importance of statistics of saving for an analysis of short-term business fluctuations as well as for the study of long-term trends in the economy rests primarily upon the fact that they show how the process of economic growth of the economy is being financed. These statistics should identify the groups in the community (households, business enterprises, governments) which ultimately pay for the new tangible assets (primarily structures, equipment, and inventories) that represent the increase in national wealth, and that constitute one of the main conditions of an increase of production in the future. They should also indicate the channels—such as the banking system, the securities markets, and the mortgage market—through which the funds required to finance the growth in national wealth flow. It is mainly the fact that changes in the volume of saving, in its origins, and in the channels through which saving flows, have great influence on the rate of economic growth and on its fluctuations, i.e., on business cycles, which has led to the demand for statistics that would permit business observers and economic analysts to identify significant changes in the saving process speedily and with a fair degree of reliability.

In the modern American economy households, business enterprises, and governments typically do not spend their total current income on consumption in the case of households, or on cost of operation in the case of business and government. The fact that most households and business enterprises have an excess of current income over current expenditures, i.e., that they save, is at the same time a reflection of the high level of output attained by the American economy and a precondition of the relatively rapid rate of growth that has characterized our economy. This excess must necessarily appear as a net increase in the unit's assets and/or a decrease in its liabilities.

Economic units, of course, save in very different forms. The two main categories of outlets for saving are the acquisition of tangible assets such as houses, other real estate, and equipment; and of intangible or financial assets, i.e., claims in their numerous forms (which include money) and equities (mainly common and preferred stock). All such acquisitions of assets constitute saving for the individual household, business enterprise, or government organization; while the sale of assets, as well as allowances for depreciation on tangible assets, may be regarded as dissaving. Similarly, the incurrence of debt or the issuance of stock is a component of dissaving from the individual unit's point of view, while the repayment of debt or retirement of stock is an element of saving. (In actuality, of course, acts of saving and dissaving often go together, e.g., the purchase of a home, a reduction in bank balance, and the incurrence of a mortgage debt.) For each individual unit net saving during any one period is the difference between the acquisition and disposition of assets, tangible as well as intangible, less the sum of net increase in debt and depreciation; and this difference is equal not only to the excess of current income over current expenditures, but also to the change in the unit's earned net worth.

From the point of view of the nation, however, only the acquisition of new tangible assets less capital consumption allowances (plus the net increase in claims against foreigners) is net saving. This correspondence of national net saving to the increase in tangible assets is not the result of an arbitrary reclassification of what constitutes saving. It is due simply to the fact that the acquisition of a financial asset or an existing tangible asset by one member of the community—the saver—is necessarily matched, and hence offset

in the calculation of national net saving, by either the sale of the same asset by another member of the community, or by his incurring a liability of the same amount (issuance of stock being regarded as equivalent to a new liability). This does not mean, it must be emphasized, that the acquisition of claims or equity securities by individual units is less important for economic growth or stability than the purchase of tangible assets. In every modern economy there exists a division of labor—though not without overlapping—between the units that produce the new tangible assets, primarily the enterprises in the construction and machinery industries; those that use the new tangible assets in the process of production (factories, railroads, etc.), or as a source of continuous services (e.g., households owning homes or consumer durables); and those that furnish the saving which permits these additional tangible assets to be brought into being. This division of labor between savers and the producers and users of new tangible assets, and the existence of organizations that bring these groups together by means of transactions in financial assets, are as essential for economic growth as is the division of labor among producers of different types of commodities and services, and among workers engaged in different tasks within one organization. It is the statistics of saving that permit us to follow this process, and to identify changes in it, that may be of very great economic importance.² The smooth and prompt balancing (within the limits of tolerance of the economic system) of saving as it accrues with expenditures on new assets—economists' "investment"—by means of the operations of the financial mechanism is a prerequisite, though not a guarantee, of steady economic growth.

II. CONCEPTS AND OBJECTIVES OF STATISTICS OF SAVING

1. **Concepts of saving.** Saving is a term used both by the man in the street and by the financial analyst and the economist. This widespread use is one of the reasons for confusion as well as for problems which we face in developing a satisfactory system of saving statistics.

To the man in the street saving probably is a rather simple, though

² All statistics of saving discussed in this report deal with the process of saving and its results as they are observed from the outside. The analysis of savers' motives which belongs to the field of individual or social psychology was regarded as falling outside the scope of the Committee's assignment, even in so far as the problem of what makes savers behave in the way they do has been, or may be, treated by statistical methods.

somewhat fuzzy, concept—the excess of his cash income from whatever source received over his cash expenditure on consumption, calculated without bothering about allowances for depreciation on the assets he owns, let alone about the more recondite bookkeeping adjustments for accruals and imputations of noncash income and consumption expenditures. The financial analyst is likely to look at saving from the point of view of the accountant who takes care of the books of business corporations, and is thus inclined to regard it as the equivalent of undistributed net earnings.

It is among economists that the concept and the measurement of saving have been studied most intensively. Economic analysis has, during the last decades, developed a number of partly complementary and partly contradictory terms and methods of approach to the estimation of saving. This has occurred primarily within the branch of applied economics that has worked out detailed measurements of national income and product, and more generally an articulated system of national accounts for all economic units domiciled within the country, a system similar to that employed for centuries in business enterprises, but not bound to business accounting methods in all details. It therefore seems best to approach the clarification of basic conceptual and measurement problems in the statistics of saving through a consideration of the role of saving within a system of national economic accounts.

a. *Saving within a system of national economic accounts.* In a system of national economic accounts the basic definition of saving is “change in earned net worth.” This change can be measured in two ways. The first is to take the difference between current income and current expenditures (including distributions to owners); the second, the difference between the net increase in assets and the net increase in liabilities (including paid-in capital). These two measures are conceptually equal for individual economic units as well as for groups of them if a consistent set of definitions is used. There are thus two operational approaches to the measurement of saving in a system of national economic accounts—one through the income account and the other through the balance sheet. The numerical result of both operations is necessarily equal if a full and consistent set of accounting data is used. In practice, differences between the two approaches are found, sometimes of substantial size.

The theoretical equality of the two measurements, however, remains a potent check and an indication of the extent of the imperfections in the statistical data.³

The relations discussed in the previous paragraph apply equally to individual economic units, to groups of units, and to the nation as a whole. National saving thus is equal to the change in earned net worth of all economic units domiciled (or operating) within the country. It may be measured either from the national income account or from the national balance sheet. In the first case it is equal to the excess of national income over current national expenditure. If national saving is derived from the balance sheet, it is calculated, first, by separately determining the change in each type of asset and liability (paid-in capital being treated as a liability); and, second, by adding changes in assets and netting against them changes in liabilities. Again both measures of saving are necessarily equal save for statistical imperfections.

National saving as a constituent of a system of national economic accounts, however, has one important characteristic which is not shared by saving of individual units or even by saving of groups of units. This is the equality in a closed economy of national saving and national investment, the latter understood in the economist's sense of expenditures on newly produced tangible assets and net increase in inventory. The reason for this equality is easily seen from the following two relations:

- (1) National saving = national income — national consumption
- (2) National investment = value of total national output — value of output of nondurable goods and services purchased by consumers and government.

National income and the value of total output are necessarily equal since they are only two expressions for the same thing, the aggregate of commodities and services being produced within the economy during an accounting period. So also national consumption, i.e., ex-

³The equality is based on the fact that the excess of current income over current expenditure (including distributions to owners) during an accounting period, must be reflected in an equally large increase of the excess of assets over liabilities (including paid-in capital) provided that both the balance sheet and income account (a) exclude all valuation changes—an objective that can be attained, e.g., by valuing assets consistently at original depreciated cost; (b) use the same distinction between current expenditures that do not appear in the balance sheet and capitalized expenditures that do; and (c) apply the same methods in calculating accruals, particularly capital consumption allowances.

penditures on nondurable goods and services by consumers and by the government, is but another expression for the value of output of nondurable goods and services purchased by consumers and government. If national income is thus equal to the value of national output, and national consumption is equal to the value of output of nondurable goods and services purchased by consumers and government, national saving must necessarily be equal to national investment for any accounting period if all transactions are viewed after they have been completed. Although the equality between national saving and national investment follows necessarily from the definitions adopted, it provides an additional check on the estimates of national saving which is very helpful to statisticians.

The equality of saving and investment, it is very important to realize, holds only for the nation as a whole. For individual units or groups of them, this equality is replaced by another significant relation:

$$(3) \text{ Saving} = \text{investment} + \text{net purchases of existing tangible assets} + \text{net placement} - \text{net borrowing}$$

where "placement" is meant to indicate acquisition of old and new financial assets. This relation is of particular importance in the statistical analysis of the capital market, because it indicates which units and groups of units contribute funds—namely those units that have a net placement—and which units absorb them; and because it permits the measurement of the size of the flows that constitute supply and demand in the various sectors of the capital market.

For the nation as a whole another important relation holds, viz:

$$(4) \text{ National saving} = \text{change in national wealth excluding valuation changes (where national wealth is understood in the usual sense of the value of all tangible assets plus net foreign balance).}^4$$

This relation follows from the equality of national saving and national investment, together with the fact that if valuation changes on existing assets are excluded, changes in national wealth can only be the result of net investment.

⁴Since the current value of national wealth reflects the effects of valuation changes (including unrealized capital gains and losses) as well as of net investment, changes in it are not, or only by coincidence, equal to national saving.

The same relation may also be expressed, and possibly more simply, in the language of accounting:

(5) National wealth = earned net worth in the consolidated balance sheets of all economic units domiciled within the nation, and

(6) Change in national earned net worth = national saving.

b. *Alternative definitions of saving.* The equality of saving measured from the income account and from the balance sheet, of course, does not ensure that there is only one "correct" way of measuring saving within a system of national economic accounting. On the contrary, there are within such a system as many defensible definitions of saving as there are reasonable definitions of the constituent elements in the definition of saving, e.g., of current income and expenditures, of assets and liabilities, and of depreciation allowances and other accruals. Nonetheless, whatever definition of these constituent elements is used, the two approaches to the measurements of saving will yield the same figures if the definitions are applied consistently and if there are no imperfections in the statistical data.

Among the many points on which definitions of saving may vary, the following are probably of the greatest practical importance:

(1) The range of economic units whose saving is included in the estimates.

The main distinction—though of course not the only one of economic significance—here is between national saving, which includes all groups of economic units, private and public, operating within the national territory; and personal saving, practically speaking the most important subtotal. The latter, in turn, may be understood either in the broader sense which includes the total saving of consumers, including the business saving of proprietors of farms and unincorporated enterprises, of nonprofit organizations, and of private pension funds, or in the narrower sense of the saving of consumers only, exclusive of business saving.

(2) Determination of the types of assets and liabilities—or, in the income account, of expenditures and receipts—that are taken into account in the calculation of saving.

The most important types of assets (or objects of expenditure) that may be included in or excluded from saving, and thus give rise

to alternative definitions, are consumer durables; owner-occupied homes; structures and durables of military character; soil improvements; goodwill, patents, copyrights, and similar semipermanent intangibles.

(3) Treatment of capital consumption allowances.

Here the first decision is whether or not to include capital consumption allowances in the calculation of saving. When capital consumption allowances are taken into account in the calculation, the resulting estimate is usually distinguished by the name of net saving, while disregard of these allowances leads to a figure for so-called gross saving.

When net saving estimates are prepared, the question arises as to the method by which capital consumption allowances are calculated. Of the many alternative solutions probably the most important ones are original cost or replacement cost as the basis of capital consumption allowances. Each of these cost bases may utilize either (a) the straight line method which results in equal annual allowances over the useful life of the asset subject to depreciation, or (b) curvilinear methods which imply varying and generally declining annual allowances. Further alternative definitions result from the inclusion or disregard of allowances for depletion of natural resources, particularly mineral deposits, but possibly also for soil fertility.

(4) The treatment of other accruals.

Alternative definitions result from the decision whether to include or to disregard in the calculation of saving, accruals for debits and credits (other than capital consumption allowances) attributable to the accounting period but not yet paid for or received at its end. The most important accruals, the treatment of which may give rise to differences in the definition of saving, are those for taxes and interest, e.g., on U. S. savings bonds and on life insurance policies.

(5) The treatment of the cost of distribution of saving.

This problem, which is of a rather technical nature, arises from the business accounting practice of carrying assets at original cost to the holder, and this cost includes commissions paid to brokers and dealers, stamp and turnover taxes, and similar charges incidental to the acquisition of an asset. If the same

principle is accepted in national accounts, these costs of acquisition must be included in the calculation of saving (and incidentally also that of investment).

(6) Inclusion or exclusion of realized and unrealized capital gains and losses.

This is the most important example, both in theory and practice, of the problems raised by valuation changes. One possibility is strictly to exclude from the definition of saving all changes in the valuation of assets of every type that do not represent physical changes, including wear and tear. In this case not only unrealized but also realized capital gains and losses, including inventory profits and losses, are excluded from saving. The second alternative is to include both realized and unrealized valuation changes; the third is the intermediate position, taken for instance in the present tax law, of including realized capital gains and losses in income and hence in saving, but of excluding all unrealized valuation changes.

(7) Choice between saving in current values and in alternative units of account.

As a rule all entries made in books kept in accordance with business accounting principles are expressed in one unit of account, in this country in dollars. No consideration is given to possible changes in the economic content of the unit of account so long as it retains its legal identity. Business accounting, in other words, adheres to the principle of dollar = dollar irrespective of the time at which the entry is made. It is, however, conceivable—disregarding for the moment the theoretical and practical difficulties involved—to adopt an accounting system that dispenses with the assumption of the unchanging character of the legal unit of account, and instead expresses all entries in an alternative unit, for instance in dollars of the purchasing power of a given base period. Accounts kept in such an alternative unit, of course, lead to estimates of saving which differ numerically from the usual figures for saving calculated in current dollars.

On each of these points several solutions can be defended theoretically. A number of different definitions of saving have actually been applied at one time or another to measure and analyze saving, and the use of various other definitions could well be supported.

In this situation it is important to realize, first, that the choice among the plethora of possible definitions depends to a large extent on the objective that statistics of saving are to serve in a specific case. Since the statistics are able to serve numerous objectives, the most important of which will be discussed in the next section, it is to be expected that we shall have to work with several different definitions of saving. A second consequence of the multiplicity of possible definitions of saving is the need for a high degree of flexibility in saving statistics to permit analysts to derive from the basic estimates figures which correspond to the specific concept of saving that is peculiarly fitted to their objective. This requirement of flexibility has played an important role in the formulation of the Committee's recommendations.

2. Objectives of statistics of saving. The calculations of saving may be an integral part of keeping a system of national accounts, and saving certainly is a concept much used in popular as well as academic discussion of economic problems. What, however, is the use that can be made of quantitative estimates of saving in economic analysis and in the formulation of economic policies for enterprises and the government? Further, how should saving be defined and measured in order to be most useful to economic analysts, to business management, and to government?

The answer to these two questions is complicated by the multiplicity of uses to which statistics of saving can be and have been put. Among the many objectives four, however, seem to stand out—their role in the analysis of business cycles, of long-term changes in economic structure, of developments in the capital market, and of saving habits. It would therefore seem sufficient to discuss the uses of saving statistics from these four angles, even though they do not cover the whole compass—they ignore, e.g., the use of saving statistics in other fields of economic analysis or in related disciplines like sociology. While these discussions of objectives are important for purposes of orientation in as complex a field as saving statistics, it is recognized that the different purposes are interrelated. In general, improvements of statistics of saving that are undertaken for the sake of one objective will also increase the usability of the figures for other objectives.

a. *Analysis of short-term economic fluctuations.* The importance of statistics of saving for the analysis of short-term economic fluctua-

tions, or business cycles, stems primarily from the fact that saving needs to be offset smoothly and continuously by new investment (in the sense of expenditure on newly produced tangible assets or addition to inventories) if an interruption of the circuit flow of income is to be avoided, an interruption which would result in a decline in national income and the volume of production and which might even lead to a cumulative downward movement in the economy.

This danger naturally exists only for that part of saving which is not immediately (a) offset by investment within the unit itself (e.g., by improvements to farm buildings made by the farmer, or by construction on force account), or (b) used for the acquisition of newly produced tangible assets from other units. In other words, the danger of interrupting the circuit flow of income is present only when the unit has an excess of current income over current expenditures plus investment and net purchases of existing tangible assets, i.e., when it supplies funds to the market. In this case the unit accumulates claims against other units (including money and equity securities), and the circuit flow of income is endangered unless somewhere in the economic system another unit or units spend on current output at a rate exceeding their incomes.

From this point of view interest does not attach primarily to figures for aggregate national saving. It is rather saving in the form of deposits with financial institutions and of securities, and the offsetting capital expenditures by borrowers and issuers of securities which are of interest. Further, interest is in a segregation between units that supply funds to the market and those that absorb funds from the market. Finally, for the analysis of business fluctuations the distinction between the forms of saving, which by their very nature have a high degree of short-term stability, and those that are subject to sudden and sharp fluctuations becomes essential. This distinction is similar to the separation of contractual saving (in the form of increases in life insurance and pension reserves, and in repayments on amortized mortgages and on instalment contracts) from free saving, though it is not identical with it and probably is more difficult to translate into actual estimates.

For the current observation of short-term fluctuations and for their assessment from the point of view of economic policy, it is obviously essential to have figures that are up to date. Practically

speaking, estimates of saving that are more than a few months—and possibly more than one month—old, are of limited value for the current analysis of the business situation. In fact, what is needed for this purpose is, in addition to up-to-date data on supply and absorption of funds during the recent past, information, first, on prospective flows of funds into various institutions; secondly, about the intentions of various groups of lenders to increase or decrease the supply of funds to different sectors of the market; and, thirdly, about the commitments of financial institutions to make loans or acquire securities, and the plans of other business enterprises to undertake capital expenditures out of borrowed funds (including the sale of stock) or by reduction of their own liquid assets.

b. *Study of long-term economic developments.* Quite different are the demands made upon saving statistics for the study of long-range developments and structural changes in the economy. Here statistics of saving have the primary objective of indicating how the growth of the nation's stock of capital, one of the basic factors in economic expansion and progress, has been and is being financed—i.e., who saves, how much, and in what forms. Interest is in continuous historical records of comprehensive character that permit discovery of long-term trends. Annual data will usually suffice for this purpose, and it is not too serious a defect if they are a few years late.

Since the relation of saving to the increase in national wealth is a crucial objective, all concepts of gross saving are inappropriate as they fail to take account of capital consumption. Their use would even after only a few years give an entirely misleading picture of the growth of the capital stock in the economy. For long-term analysis net saving, therefore, is the only concept that can be considered. Similarly, replacement cost rather than original cost must be used as a basis of depreciation allowances. Otherwise estimates of saving would overstate the increase in the capital stock in periods of rising prices (and would understate it when prices are falling). For the same reason the concept of saving must include all types of assets that are regarded as part of the national stock of wealth. This consideration argues strongly for inclusion of saving through consumer durables—and, of course, of saving through owner-occupied houses—as well as of saving through durable tangible

assets owned by the Government. Exclusion or inclusion of military durables will then be determined by whether they are regarded as part of national wealth, and this in turn depends on whether military expenditures are visualized as part of the normal operation of an economy. Exclusion of all valuation changes is also a corollary of this point of view. Clearly transactions that do not lead to a change in the stock of capital should not be a part of national saving.

Emphasis on the explanation of changes in national wealth also requires that the statistics cover all groups of units within the economy, since only then will saving be equal to the change in national wealth (excluding valuation changes throughout). The practical consequence is that it becomes essential to estimate the saving of government units on the same basis as that of business enterprises and households.

Since one of the main purposes of statistics of saving in long-term analysis is to help understand the process by which economic growth and particularly the expansion of the country's stock of capital is financed, it is important to develop estimates of saving separately for the main groups that habitually make funds available and those that absorb them, and in addition to show in as much detail as possible the flow of these funds from savers through financial intermediaries to investors. This calls for separation among households of savers and dissavers, and among business enterprises for breaking out those that usually have an excess of investment over their own saving. Possibly the most adequate form of bringing home the relation of saving on one hand, and investment and change in national wealth on the other, is a combination of sources-and-uses-of-funds statements with balance sheets for the main financial and non-financial sectors of the economy.

Finally, in long-term analysis, price movements, or the changes in the purchasing power of the unit of account, become much more important. Long-term analysis usually cannot be content with a series of annual estimates of saving that is expressed in current values, since no economically meaningful measure for long periods can be obtained by simply adding annual figures once the price level shows a substantial upward or downward trend. It will then be necessary to reduce the annual estimates of saving to a common

price base in order to measure rates of growth in saving, and to take advantage of the equality of cumulated national saving over a period with the change in national wealth.

c. *Capital market analysis.* The third major use of statistics of saving calls for estimates that put the emphasis even more strongly than in the two preceding approaches on the flow of funds through the capital market, particularly through its organized sectors. This calls for finer sectoring, particularly a more detailed breakdown of financial institutions, than is required for business cycle or structural analysis; and for distinguishing a substantially larger number of assets and liabilities that form the object of the capital market, e.g., for separation of the main groups of corporate security issues and of loans and securities of different maturity. On the other hand, capital market analysis can get along with much rougher and less detailed figures on saving through new tangible assets and of saving of those groups of economic units that are close to financial self-sufficiency and, hence, make only little use of the capital market.

Probably the most distinctive feature of saving statistics for the purpose of capital market analysis, however, is the need for figures on a grosser basis than is required for the two other approaches. For a thorough analysis of the capital market it is not sufficient to have information on net flows of the relevant types of funds, e.g., net saving of households through savings and loan associations or net purchases of corporate bonds by life insurance companies. It is desirable, and sometimes even necessary, to split each net flow into its two gross components, i.e., purchases and sales in the case of securities, advances and repayments in the case of loans, and debits and credits in the case of accruals. This means distinguishing between downstream movements (money flows from saver to investor) and upstream movements (flows from investor to saver). This split is particularly important for long-term loans and securities, e.g., the distinction between mortgage loans made and repayments on outstanding loans, between premium payments and benefit receipts under life insurance contracts, between offerings and retirements of corporate bonds, and between sales and redemptions of investment company stocks. The distinction, however, is also important for certain types of short-term obligations, e.g., instalment loans.

Closely connected with the emphasis on gross flows is the much

greater attention devoted in capital market analysis to changes of ownership of outstanding assets, particularly financial assets but also residential and commercial structures, as distinguished from transactions that affect newly created tangible and intangible assets, which are the center of attention in both business cycle and economic structure analysis. Indeed, satisfactory capital market analysis probably requires separation of transactions in new and outstanding assets and of the flows of funds that finance them. This would, for instance, call for separation of mortgage loans made on newly constructed and on old structures, and of loans on newly issued and on outstanding securities. All these transactions in existing assets have usually been of less interest in the other two approaches since they cannot show a net balance on a national basis (disregarding net international transactions) as transactions in newly created assets will. This emphasis on changes in ownership of outstanding assets, however, is not without economic significance because it is these changes which, to a great extent, determine the nature of the capital market, and which thus have substantial, though indirect, influence on the creation and distribution of new assets that provide outlets for net saving.

d. *Analysis of saving habits.* The three objectives of statistics of saving discussed in the preceding sections deal primarily with the saving process as it unfolds over time. The fourth objective centers on the identification of savers and dissavers; on the discovery of the saving or dissaving practices of different strata of the population, strata that may be distinguished by their occupation, residence, and other social characteristics; and on the effect of the combination of these saving and dissaving practices with events like employment history, inheritances, and windfall gains and losses, that are reflected in the wealth of groups of households at various points in their life cycle. Data of this type are of importance for the formulation of policies both by the Government, such as in the fields of taxation and social security, and by business insofar as they are of value in market analysis. Material of this character also helps economists to understand short- and long-term fluctuations in saving.

The main source of data on saving and dissaving practices is provided by cross-section studies on a sample basis such as the Survey of Consumer Finances and the studies of the Bureau of Labor Statis-

tics. Since saving practices and basic characteristics of the financial situation of different strata of the population do not change rapidly, it is generally sufficient to take cross-section surveys at intervals of several years. The sample should be large enough to produce statistically significant results not only for all households, but also for fairly fine groupings of them; and the information should be collected in sufficient detail to permit effective analysis of differences in the use made of various forms of saving and of the factors influencing them.

There are however two aspects of the study of saving habits for which continuous surveys, or surveys covering longer periods of time, are essential. The first is the analysis of the influence of business fluctuations on saving habits. This requires either data covering a full cycle, or at least surveys taken during different phases of the cycle which generally will not coincide with the usual calendar year basis of the surveys. The second subject requiring continuous data is the study of life cycles in saving and estate accumulation, a hitherto almost unexplored field. This study can be approached, although only for a fraction of the population, through the analysis of estate tax statistics and of probate records. These problems could also be investigated with the help of the survey technique, although the attempt apparently has never yet been made.

III. EXISTING STATISTICS OF SAVING IN THE UNITED STATES

This section provides a short nontechnical description of the statistics of saving in the United States. The first part, dealing with statistics currently compiled and released, is limited to estimates that cover aggregate national or personal saving or large parts of it, but does not deal with statistics that are used in one form or another in building up the estimates of aggregate saving. Readers who are interested in a more detailed technical description of these series are referred to Appendix E. The second part of this section indicates very briefly the character and coverage of statistics of saving available for the study of the trend and cyclical fluctuations of saving in the past, and for the analysis of structural changes in it. Extent and nature of the description of both current and historical statistics of saving are determined by this section's function of serving as a

basis for the Committee's recommendations that will be presented in Section IV.

1. **Current statistics of saving.** At the present time, and for several years past, the following statistics of saving have been available currently:

- (a) Aggregate personal saving calculated by the Department of Commerce as part of its national income estimates.
- (b) Saving by individuals compiled by the Securities and Exchange Commission.
- (c) Aggregate personal saving calculated by the Securities and Exchange Commission.
- (d) Data on consumer saving collected as part of the Survey of Consumer Finances conducted for the Board of Governors of the Federal Reserve System.
- (e) Statistics of corporate saving.
 - (i) Tabulations of Internal Revenue Service.
 - (ii) Estimates of Department of Commerce integrated with its national income calculations.
 - (iii) Estimates of sources and uses of funds of all (Department of Commerce) and 298 large nonfinancial corporations (Federal Reserve Board).

An additional set of statistics that contains the elements of estimates of saving is the Federal Reserve Board's flow-of-funds study, annual data from which are scheduled for release in the near future. This structure is described briefly under f below. Of these series, the sources, content, and availability of which will be described in the following pages, a and b and e(ii) are released quarterly, while c and d and e (i) and (iii) are available only on an annual basis.

The listing indicates that no estimates of government saving are available on a current basis. The national income estimates of the Department of Commerce include a component "Government surplus on income and product transactions" of all Federal, State, and local governments together. This series, which is the result of rather complicated calculations, covers some of the items that would

have to be included in an estimate of government saving following business accounting principles, or paralleling the calculations of personal saving. However, the series does not include government expenditures on construction and other durable assets, treating them like current expenditures; and consequently makes no allowance for depreciation of government property. As a result of the lack of current figures for government saving we do not as yet have estimates of aggregate national saving.

a. *Aggregate personal saving (Department of Commerce)*. This series is derived by the National Income Division of the Department of Commerce in the framework of its regular national income calculations as the difference between personal income and the sum of personal consumption expenditures and personal tax and nontax payments, each of which is built up painstakingly from numerous sources of varying character and reliability. Because of its derivation this difference cannot be subdivided either by forms of saving or by groups of savers. For the same reason the accuracy and revisions of this estimate of personal saving depend entirely on those of aggregate personal income and expenditures.

The scope of economic units covered by the statistics of personal saving is rather broad. They include, in addition to households and unattached individuals living alone or in institutions: unincorporated business enterprises; personal trust funds and private pension funds; most types of nonprofit institutions, in particular, churches, hospitals, educational institutions, foundations, eleemosynary institutions; and several business-type organizations such as mutual life insurance companies, mutual savings banks, savings and loan associations, and credit unions. The saving of these groups cannot be ascertained from the national income accounts because their income and expenditures are not available separately.

For an understanding of the estimates it is further necessary to keep in mind that personal expenditures include those on consumer durables, but not those on houses. Moreover individuals' net rental income (i.e., cash rent receipts plus imputed rent on owner-occupied houses less current expenditures including depreciation connected with the operation of these properties) as well as the net income of unincorporated business enterprises (excluding inventory profits and other capital gains and less capital consumption allowances) are

part of personal income. Hence the Department of Commerce's series on personal saving measures, in effect, the net saving of households, unincorporated business enterprises, nonprofit institutions, etc., if it is understood that expenditures on consumer durables are regarded as current rather than as capitalizable expenditures. A companion series for personal gross saving can be obtained by adding capital consumption allowances, estimates for which are available from Table 6 of the *National Income Supplement to the Survey of Current Business*.

Estimates of personal saving are prepared on a quarterly basis and are made available approximately two months after the end of the quarter, first in the form of a press release by the Office of Business Economics, and shortly afterwards as a part of the quarterly statistics of national income in the February, May, August and November issues of the *Survey of Current Business*.

In the *Survey* the figures are shown both on an unadjusted and a seasonally adjusted basis. The seasonally adjusted figures are derived as the difference of seasonally adjusted disposable personal income and personal consumptions expenditures, each of which in turn is the sum of numerous components individually adjusted for seasonal variations. As a result, the relation between the unadjusted and seasonally adjusted personal saving of each of the four quarters is not constant, but changes from year to year.

A preliminary estimate of personal saving for the preceding year is available in the February issue of the *Survey of Current Business*. A revised annual estimate is released about half a year after the end of the year and is published either in the July issue of the *Survey of Current Business* or in special publications, the last of which is the 1954 *National Income Supplement to the Survey*. These publications contain a fairly detailed description of the derivation of the personal saving estimates and a discussion of their reliability.⁵

Since many of the figures that have to be used in the first derivation of the quarterly and, to a lesser extent, the annual estimates of aggregate personal saving are of a preliminary character, revisions are made as additional data become available. Table 1 shows revisions made in the quarterly estimates for 1945 to date. It indicates that revisions have been substantial, particularly in the first few

⁵ See, for instance, the 1954 *National Income Supplement*, pp. 51, 52, 65.

TABLE 1. PERSONAL SAVING—DEPARTMENT

[Seasonally adjusted quarterly totals at

Date of publication	1945				1946				1947				1948				1949			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1947																				
July	34.5	34.1	27.4	20.1	16.6	15.5	13.1	13.1												
August									12.6	11.0										
November									11.7	8.9	12.7									
1948																				
February									11.9	7.8	12.1	11.2								
May													12.9							
July	32.5	31.9	24.2	17.9	14.2	11.8	10.0	10.6	11.6	4.1	9.4	9.7	11.8							
August													11.7	12.2						
November													12.0	11.7	15.2					
1949																				
February													11.4	12.9	16.1	18.4				
May																	21.2			
July	34.1	32.5	26.7	18.8	13.0	11.8	9.3	6.7	6.1	.7	7.0	6.1	6.7	10.8	15.0	15.3	18.5			
August																	17.1	16.0		
November																	16.3	14.8	13.3	
1950																				
February																				
May																				14.8 12.1 9.8 10.8
July					15.3	14.1	10.1	8.5	5.9	.4	4.1	5.2	5.5	10.5	12.8	14.8	12.5	9.8	6.2	6.2
August																				
November																				
1951																				
February																				
May																				
July													5.2	10.3	13.3	13.0	10.3	6.7	4.8	3.4
August																				
November																				
1952																				
February																				
May																				
July																				10.1 7.1 5.6 3.9
August																				
November																				
1953																				
February																				
May																				
July																				
August																				
November																				
1954																				
February																				
May																				
July	34.9	33.4	26.8	19.5	15.8	14.4	9.8	10.1	6.7	.3	4.4	4.6	4.2	10.6	12.6	12.3	11.8	8.6	6.7	3.2
August																				
November																				
1955																				
February																				
May																				

Source.—Department of Commerce, *Survey of Current Business*.

quarters after the first release of the estimates; and they have generally been in a downward direction. In recent years revisions have been less frequent, in part because the policy has been adopted of making revisions (except in the quarter following original release) only after a substantial period has elapsed, and final figures can be utilized for most components involved in the estimates of personal income and expenditures.

Annual and quarterly estimates of aggregate personal saving have been regularly released in virtually their present form since 1942.⁶ Comparable figures have been compiled on an annual basis back to 1929 and on a quarterly basis back to 1939, and are now regularly shown, in the national income statistics as presented in the *Survey of Current Business*.

b. *Saving by individuals (Securities and Exchange Commission)*. This series employs, to use the terminology of Section II, the balance sheet approach to the calculation of saving rather than, as aggregate personal saving of the Department of Commerce, the income approach. The items covered by this series are shown in Table 2 both for the date at which the series was originated and for its present form. It will be seen that changes in the items covered over the period of 13 years during which the figures have been released have been small.

The scope of this series is very close to that on aggregate personal saving of the Department of Commerce, i.e., it includes not only households, but also unincorporated business enterprises, pension and trust funds, and nonprofit institutions. The coverage of the SEC series is narrower than the Department of Commerce's personal saving, mainly because the series excludes certain transactions of farm and unincorporated business enterprises—expenditures on tangible assets, depreciation charges, and net incurrence of debt—which are implicitly covered in the Department of Commerce series. On the other hand, government pension and insurance funds are included in the SEC, but excluded from the Department of Commerce series.

With regard to saving through claims and equities (up to recently

⁶One major revision in the personal saving series, resulting from both conceptual changes and statistical revisions in personal income and expenditures, occurred in 1947. These revisions are discussed in the July 1947 *National Income* Supplement, p. 11.

TABLE 2
SCOPE OF SECURITIES AND EXCHANGE COMMISSION
QUARTERLY STATISTICS OF SAVING BY
INDIVIDUALS

Type of saving	April 1942	January 1955
1. Currency and bank deposits	x	x
a. Currency	—	¹ x
b. Demand deposits	—	¹ x
c. Time and saving deposits	—	¹ x
2. Savings and loan associations ²	x	x
3. Insurance	x	x
a. Private	x	x
b. Government	x	x
4. Securities ³	x	x
a. U. S. savings bonds	—	⁴ x
b. Other U. S. Government	x	x
c. State and local government	x	x
d. Corporate and other	x	x
5. Liquidation of mortgage debt ⁵	x	x
6. Liquidation of debt not elsewhere classified ⁶	x	x
7. Total liquid saving ⁷	x	x
8. Nonfarm dwellings ⁸	x	x
9. Other durable consumers' goods (expenditures)	x	x
10. Total gross saving	x	x

x Shown.

— Not shown.

¹ Breakdown introduced in release of Oct. 5, 1952.

² Shares and deposits.

³ After deducting change in bank loans made for the purpose of purchasing or carrying securities.

⁴ Shown separately beginning with release of Feb. 24, 1943.

⁵ Mortgage debt to institutions on one- to four-family nonfarm dwellings.

⁶ Largely attributable to purchases of automobiles and other durable consumers' goods, although including some debt arising from purchases of consumption goods.

⁷ Renamed "change in net claims" beginning May 1955.

⁸ Construction of one- to four-family nonfarm dwellings less net acquisition of properties by nonindividuals; also includes a small amount of construction of non-profit institutions.

called liquid saving), the SEC series represents net increases in financial assets less net increases in certain debts of individuals. Thus reductions in individuals' financial assets are offset against increases, and increases in debt are deducted either directly from net changes in the relevant assets, as in the case of loans on securities, or are carried as separate items in the statistics, as is the case for mortgage debt and consumer debt. At the present time the SEC series does not show individuals' net saving in the form of tangible assets since

TABLE 3. TOTAL LIQUID SAVING—SECURITIES AND

[In billions of

Date of publication	1945				1946				1947				1948				1949			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
June 1945	8.4																			
Oct. 1945	8.6	10.0																		
Jan. 1946	8.8	10.0	10.0																	
Apr. 1946	8.7	9.8	9.8	8.6																
July 1946	8.7	9.8	10.0	8.7	2.9															
Sept. 1946		9.9	10.2	8.7	2.8	5.7														
Dec. 1946			10.3	8.5	3.0	5.3	4.3													
Mar. 1947				8.4	2.8	5.3	4.0	3.7												
June 1947					2.7	5.0	4.0	3.3	1.4											
Oct. 1947									.8	1.8										
Dec. 1947									1.6	2.4	2.9									
Mar. 1948									1.4	2.1	2.9	2.5								
July 1948									1.4	2.1	2.8	2.0	-.4							
Oct. 1948										2.0	2.9	1.8	-.5	.9						
Dec. 1948											3.0	1.7	-.3	.6	3.1					
Apr. 1949												1.7	-.6	.8	2.8	1.8				
June 1949													-.6	.9	2.4	1.9			.6	
Sept. 1949														.8	2.7	1.4			.7	1.0
Dec. 1949															2.8	1.5			.8	.9
Apr. 1950																1.5			.8	.9
July 1950																			.9	.9
Oct. 1950																			.8	1.6
Dec. 1950																				1.4
Apr. 1951																				.5
July 1951																				.9
Oct. 1951																				.9
Jan. 1952																				1.5
Apr. 1952																				1.0
July 1952																				.8
Oct. 1952																				.9
Dec. 1952																				1.7
Apr. 1953																				1.8
July 1953																				.8
Oct. 1953																				.9
Dec. 1953																				1.8
Apr. 1954																				.8
July 1954																				.9
Oct. 1954																				.9
Jan. 1955																				1.5
May 1955 ¹	8.3	10.3	10.7	8.1	2.1	4.9	3.6	3.1	1.6	1.4	2.2	1.4	-1.1	.4	2.3	1.4	.5	.6	1.4	.4

* Less than 50 million dollars.

¹The May 1955 release presents quarterly data for 1954 only. Revised quarterly estimates for other years have not been published by the SEC but were made available for this comparison.

no allowance is made for depreciation on nonfarm dwellings or other durable consumer goods. (These allowances were made in the first release of April 1942 but were immediately abandoned.) The series therefore now provides estimates of (a) individuals' saving through financial assets net of certain debts and (b) individuals' gross saving through selected tangible assets, viz., one- to four-family nonfarm dwellings (plus nonprofit institutional structures) and other durable consumer goods.

The figures are available only in seasonally unadjusted form. Table 3 shows the revisions made in subsequent releases in the quarterly estimates beginning with 1945. Since quarterly figures are published for only about a year after original release, revisions made later are unavailable to the public. Hence, the final version of the quarterly figures is not known, although annual aggregates continue to be revised as need arises and are included in their revised form in later releases.⁷

The SEC series was first released in April 1942, showing figures for the four quarters of 1941 and for the calendar year 1940 as a whole. However, similar calculations on an annual basis had been made for several earlier years.⁸ The Commission has never provided an official description of the series, its sources, and the methods of estimation used. However, Part II of *Individuals' Saving* by Irwin Friend with Vito Natrella, published in 1954, may be regarded as a reliable guide to the series as it stood at the end of 1952.

c. *Aggregate personal saving (Securities and Exchange Commission)*. This series is available on an annual basis back to 1933 and has been provided regularly since 1947 as Table 6 of the national income accounts published in the *Survey of Current Business* approximately seven months after the close of the year. The items covered by this series are listed in Table 4.

As can be seen from the table, the series is essentially a combination of the SEC series for individuals' liquid saving with estimates for net saving (i.e., expenditures less estimated depreciation allowances) through the tangible assets of individuals and for debts of farms and unincorporated business enterprises. The result is a fig-

⁷ The figures in the bottom line of Table 3 which represent the final form (as of May 1955) of the quarterly estimates were furnished by the Securities and Exchange Commission.

⁸ *Studies in Income and Wealth*, National Bureau of Economic Research, 1939, Vol. III, pp. 217 ff.

TABLE 4

SCOPE OF SECURITIES AND EXCHANGE COMMISSION
ESTIMATES OF PERSONAL SAVING

-
1. Personal saving in forms other than changes in equity in real property and unincorporated enterprises ¹
 2. Increase in equity in nonfarm residences and in real property of nonprofit institutions ²
 - a. Nonfarm dwellings
 - b. New construction by nonprofit institutions
 - c. Less: Increase in mortgage debt to corporations and financial intermediaries
 - d. Depreciation
 3. Increase in equity in nonfarm unincorporated enterprises ²
 - a. Increase in inventories
 - b. New construction and producers' durable equipment
 - c. Less: Increase in bank and insurance company debt
 - d. Increase in net payables to other corporations
 - e. Depreciation
 4. Increase in equity in farm enterprises ²
 - a. Increase in inventories
 - b. New construction and producers' durable equipment
 - c. Net purchases of farms from corporations and financial institutions
 - d. Less: Increase in mortgage debt to corporations and financial intermediaries
 - e. Increase in other debt to corporations and financial intermediaries
 - f. Depreciation
-

¹ SEC liquid saving less changes in government insurance and pension reserves and Armed Forces leave bonds (both of which are ascribed to the government sector), and less liquidation of mortgage debt. See Table 2 for components of SEC liquid saving (now called "change in net claims").

² Represents changes in specified assets and liabilities only. Certain financial assets of these institutions and enterprises are included under group 1.

ure for aggregate net personal saving, excluding consumer durables and Government insurance funds, which is closely comparable in the scope of the economic units included and the types of assets covered to aggregate personal saving derived by the Department of Commerce as the difference between personal income and personal consumption expenditures and taxes.⁹ Indeed, the series was originally developed for comparison with the Department of Commerce's personal saving series, and at the present time the comparison of the two series made by staffs of the National Income Division and the Securities and Exchange Commission before their publication in the

⁹ As in the case of the SEC's statistics of individuals' saving through financial assets, no official description of the series has been provided, but a brief one is available in Part I of *Individuals' Saving* by Irwin Friend with the assistance of Vito Natrella, Wiley and Sons, 1954, pp. 31ff.

annual national income statistics, represents an important step in checking the reliability of both series.¹⁰

d. *Data on consumer saving (Survey of Consumer Finances)*. The data on consumer saving, collected by the Survey of Consumer Finances as part of a more comprehensive survey, differ in one basic respect from all other currently available statistics of saving.¹¹ The Survey data are based on personal interviews with members of 3,000 to 3,500 spending units throughout the United States, who are selected by a process of random sampling carefully worked out on the basis of probability theory, a process which gives unbiased estimates of the proportion of different types of spending units.¹² The data obtained annually from this sample are then combined to furnish estimates of saving during the preceding year by spending units in the Survey universe at the time of interview.¹³ It is also possible to obtain separate figures for the saving, in the aggregate or by components, of spending units of different income level, occupation, age of head, family size, location of residence, and various other characteristics.¹⁴

In contrast to the Survey data, all other estimates of saving are based on statistics that either cover all relevant units or at least a large part of them, but do not permit the segregation of saving attributable to different types of units within the sector covered. On the other hand, the basic definition of saving is similar to that used in the saving statistics of the SEC in that it is derived as the sum of the change in different assets and liabilities.

¹⁰ While differences between the two estimates have occasionally been substantial, they have averaged only \$1 billion from 1933 to 1953. This average difference is about 10 per cent of average Department of Commerce estimates of personal saving. The relative differences—annual differences as per cents of annual Commerce personal saving—average about 50 per cent, although when the years 1933 and 1934 are omitted the average drops to 15 per cent. See 1954 *National Income* Supplement, p. 166 (Table 6), lines 32, 33, and 34.

¹¹ The Survey of Consumer Finances is sponsored by the Board of Governors of the Federal Reserve System, and operated by the Survey Research Center of the University of Michigan.

¹² The consumer spending unit is defined as all persons living in the same dwelling and related by blood, marriage or adoption who pool their incomes for major expenses.

¹³ Descriptions of the methods of the Survey of Consumer Finances will be found in the *Federal Reserve Bulletin* of March 1947 and July 1950; and in G. Katona, *Psychological Analysis of Economic Behavior*, McGraw-Hill Co., 1951, (particularly Part 2); L. Festinger and D. Katz, eds., *Research Methods in the Behavior Sciences*, Dryden Press, 1953, Chaps. 1, 5 and 8; and L. R. Klein, ed., *Contributions of Survey Methods to Economics*, Columbia University Press, 1954.

¹⁴ The Survey usually distinguishes the following nine occupational groups: professional and semiprofessional; managerial; self-employed; clerical and sales; skilled and semiskilled; unskilled and service; farm operator; retired; other.

The derivation of aggregate estimates of saving, or components of saving, from the sample data is not regarded as the primary objective of the Survey of Consumer Finances, but is subordinated in the design and operation of the Survey to the study of relations between saving or its components and other factors in the economic or demographic situation of the different types of spending units.

The Survey of Consumer Finances has been conducted annually since 1946, usually in January and February, to cover the preceding calendar year. However, questions permitting the estimation of total saving of consumers have been included only in the Surveys conducted in the years 1947 through 1951. For 1946 and again beginning with 1952, information has been obtained on only part of assets and liabilities, although on many important ones. It is therefore not possible for these years to derive estimates of total consumer saving from Survey data. Table 5 indicates, with some simplifications, the individual components of saving that have been covered each year by the Survey.

The coverage of the Survey of Consumer Finances is somewhat narrower than that of the personal saving statistics of the Department of Commerce or the SEC. It is limited to the population residing in private households, and thus omits members of the armed forces living on military reservations, residents in hospitals and other institutions, and the floating population (residents in hotels, tourist camps, large boarding houses). Moreover, the Survey does not cover the activities of nonprofit institutions, mutual business organizations, personal trusts or pension funds.

In addition to these discrepancies, there are other differences between Survey saving and personal saving of the SEC and the Department of Commerce. Thus, the Survey regards premium payments rather than the increase in policyholders' equity as the measure of saving through life insurance and, similarly, uses payments to pension funds rather than increase in assets as the measure of saving through such funds. The Survey includes some saving through social insurance funds—government employee retirement funds and government life insurance—whereas personal saving excludes all saving through social insurance funds. The Survey disregards personal currency holdings and capital consumption

TABLE 5
 COVERAGE OF SAVING DATA IN SURVEYS OF CONSUMER
 FINANCES, 1946-55

[By year Survey was conducted]

Component	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955
Consumer saving.....	-	x	x	x	x	x	-	-	-	-
Change in liquid asset holdings (increase, +; decrease, -):										
Total holdings.....	x	x	x	x	x	x	x	(1)	-	x
U. S. Government bonds.....	x	x	x	x	x	x	x	-	-	x
Checking accounts.....	x	x	x	x	x	x	x	-	-	x
Savings accounts ²	x	x	x	x	x	x	x	-	-	x
Change in short-term consumer debt (increase, +; decrease, -):										
Total debt.....	-	x	x	x	x	x	(4)	-	-	-
Automobile debt.....	-	x	x	x	x	x	-	-	-	-
Debt on purchases of other goods.....	-	x	x	x	x	x	-	-	-	-
Other personal debt ⁴	-	x	x	x	x	x	-	-	-	-
Nonfarm unincorporated business saving:										
Profit left in (+) or net loss (-).....	-	x	x	x	x	x	x	x	-	x
New investment (+) or liquidation (-).....	-	x	x	x	x	x	x	x	-	-
Contractual payments:										
Retirement funds (excluding OASI).....	x	x	x	x	x	x	x	-	x	-
Life insurance premiums.....	x	x	x	x	x	x	x	x	x	-
Mortgage payments:										
Total.....	-	x	x	x	x	x	-	-	x	x
On principal.....	-	-	x	x	x	x	x	-	-	-
Miscellaneous forms of saving:										
Nonfarm house purchase less debt incurred (+).....			x	x	x	x	x	x	x	x
Farm purchase less debt incurred (+).....			x	x	x	x	x	-	-	x
Other real estate purchases less debt incurred (+).....	x	x	x	x	x	x	x	-	-	-
Sales of houses and other real estate less debt retired (-).....			x	x	x	x	x	-	-	-
Additions to houses (+) ³	-	x	x	x	x	x	x	x	x	x
Farm machinery less debt incurred (+).....	-	x	x	x	x	x	x	-	-	-
Change in ownership of securities other than U. S. Government bonds (increase, +; decrease, -).....	-	x	x	x	x	x	x	-	-	-
Change in loans to other individuals (loans made, +; repayments received, -).....	-	x	x	x	x	x	-	-	-	-
Lump sum insurance settlements (-).....	-	x	x	x	x	x	x	-	-	-
Gifts or inheritances received (-).....	-	x	x	x	x	x	x	-	-	-

x Covered.

- Not covered.

¹ Can be obtained from about one-half of the sample which was reinterviewed.

² Includes accounts with banks, building and loan associations, postal savings, and credit unions, except in the 1949 Survey when accounts with credit unions were omitted.

³ Can be obtained from two general questions on amounts borrowed and amounts repaid.

⁴ Includes debts to individuals.

⁵ Includes only estimated improvements; expenditures on repairs and maintenance are excluded. Covers farm and nonfarm houses and for years 1947-51 also includes additions to farm buildings.

allowances on nonfarm nonbusiness and farm real estate, whereas personal saving statistics cover these items.

Both the Survey and SEC and Commerce data include saving through farm enterprises and nonfarm unincorporated businesses. However, for nonfarm business the Survey obtains only a "profit left in or net loss" figure and "new investment or liquidation" whereas SEC personal saving as presented in Table 6 of the *National Income Supplement* shows changes in various assets and liabilities of nonfarm unincorporated businesses although transactions in financial assets are combined with similar transactions of the other groups covered by personal saving. In the Survey respondent businessmen were unable in some cases to report their business liquid assets separately from personal holdings so that these business assets are included with liquid assets rather than with business saving.

With respect to farm saving, no attempt is made in the Survey to distinguish transactions of the farm household from those of the farm business, so that farm business transactions are included in the various items presented in Table 5. Thus, any liquid assets held for the farm business are reported with the farm family's holdings. The major implication of this treatment for comparison with the SEC Table 6 estimates (which treat the saving of farm and nonfarm enterprises similarly) is that the Survey does not obtain data on farm depreciation allowances or changes in farm inventories.

The results of the Survey of Consumer Finances are published in a series of articles in the *Federal Reserve Bulletin*. The data relating to saving in the sample spending unit schedules have in addition been analyzed repeatedly at the Survey Research Center. (See Appendix E for selected listing.)

e. *Statistics of corporate saving:*

(i) *Tabulations of Internal Revenue Service.* Although the annual tabulations of corporate tax returns by the Internal Revenue Service published in *Statistics of Income* are not primarily directed towards facilitating the calculation of corporate saving, they provide the basis for all attempts at measuring this magnitude. The reason is that these statistics provide the only source of information on a fairly comparable basis for the balance sheets and income accounts of most corporations in the United States. The tabulations, however, are available only a considerable period after the close

of the period to which they refer and necessarily are based on the concepts used in revenue legislation. At the present time it takes about two years for the preliminary result of the statistics of corporate tax returns, from which corporate saving can be calculated, to become available, and about three years until the full detailed tabulations can be studied.

As *Statistics of Income* provide aggregate figures for corporations in different industries, different size groups, and a few other characteristics, it is possible to derive figures for the saving of many different groups of corporations. The unpublished Source Book, which can be studied at the headquarters of the Internal Revenue Service, furnishes even more detailed breakdowns. The details given in *Statistics of Income* also permit the derivation of figures following different concepts of corporate saving, e. g., including or eliminating capital gains and losses.

(ii) *Estimates of Department of Commerce.* The Department of Commerce prepares estimates of net corporate saving on both an annual and a quarterly basis. Except for recent years the annual series is derived by adjusting data from *Statistics of Income* to a basis appropriate for the national income accounts. It is several years late, the figures in the 1954 edition of *National Income*, for instance, being presented only through 1951. Quarterly statistics of corporate saving and also the recent annual estimates which are published about 4 to 5 months after the end of the period are based on less complete data and are of a preliminary character.¹⁵ These data are of a comprehensive and reliable character for manufacturing because of the availability of the *Quarterly Financial Report: United States Manufacturing Corporations* prepared jointly by the Federal Trade Commission and the SEC, which is released approximately four months after the end of the quarter, as well as for a few other sectors, particularly public utilities and some financial institutions. For some other sectors, particularly trade, service industries, construction, and real estate, the estimates are rather precarious and subject to considerable revision.

The final estimates of corporate saving of the Department of Commerce differ conceptually on several points from those obtained

¹⁵ A preliminary estimate for the preceding year is available in February. For a description of sources and methods, see 1954 *National Income* Supplement, pp. 95-97.

from tax returns. The more important adjustments made by the National Income Division are: the addition of profits disclosed by audit (less taxes on them); the elimination of inventory profits and losses and other capital gains and losses; the removal of depletion allowances from expenditures; the addition of profits of the Federal Reserve Banks; and the removal of the profits of mutual insurance companies.¹⁸ Since several of these adjustments are of large size and not offsetting, the estimates of corporate saving of the Department of Commerce differ, sometimes considerably, from the figures derived from *Statistics of Income*.

In the preliminary annual and the quarterly estimates of corporate saving the adjustments have to be based on preliminary estimates and not all of them can be taken into account.

(iii) *Estimates of sources and uses of corporate funds.* Statements of sources and uses of corporate funds as published by the Department of Commerce record annual data on uses of funds for capital expenditures and net increases in financial assets and the sources of such funds, i.e., retained corporate profits; depreciation, net new stock issues, and borrowing. In general, the data cover all U. S. corporations included in *Statistics of Income* tabulations except banks and insurance companies. No breakdown by industry is available other than a funds statement for manufacturing corporations for the years 1946-1953 published in the December 1954 *Survey of Current Business*.

The Commerce Department statement of corporate sources and uses of funds is presented annually in the *Survey of Current Business* in a special article. Heretofore the article has appeared sometime between 2 and 7 months after the close of the calendar year, but Commerce now plans to publish it 7 to 8 months after year-end since data published earlier than midyear are subject to substantial revisions.

The *Federal Reserve Bulletin* each year, usually in a midyear issue, publishes corporate funds statements for 300 (now 298) large corporations based on annual reports to stockholders. Statements are shown separately for ten manufacturing industries, three utility industries, and for retail trade.

¹⁸ For full list of adjustments and for reconciliation with data in *Statistics of Income* for the period 1929 through 1951, see 1954 *National Income* Supplement, Table 38.

f. *Flow-of-funds system of national accounts (Board of Governors of the Federal Reserve System)*. This set of statistics has up to now not been published and hence has not been used outside of the Board. However, with the imminent publication of the data for the years 1939 to 1953, and the planned regular release of current figures on an annual basis six to nine months after the end of the year, it may be expected that this body of statistics will become an important tool in the analysis of saving.¹⁷ Its use in this capacity may be expected, even though the flow-of-funds statistics as now arranged do not include specific estimates of saving, as they contain virtually all data necessary for the calculation of saving in each of the private sectors.

The flow-of-funds system of accounts records all transactions that involve at least two separate economic units and which are effected through transfers of credit or money.¹⁸ The system divides the economy into a number of sectors and for each sector provides sources and uses of funds statements recording all transactions—current and capital, financial and nonfinancial—that the sector engages in.

The sector and subsector groupings are as follows:

- (1) Consumers
- (2) Corporate business
- (3) Nonfarm noncorporate business
- (4) Farm business
- (5) The Federal Government
- (6) State and local governments
- (7) The banking system
 - a. Commercial banks
 - b. Mutual savings banks and Postal Savings System
 - c. Federal Reserve Banks
 - d. Treasury monetary funds

¹⁷ Similar data for the years 1936 to 1942 have been available since 1952 in Morris A. Copeland, *A Study of Moneyflows in the United States*, National Bureau of Economic Research, 1952.

¹⁸ The structure is described in detail in *The Flow of Funds in the United States, 1939-1953*, a forthcoming publication of the Board of Governors of the Federal Reserve System.

- (8) Insurance companies
 - a. Life insurance companies
 - b. Self-administered pension plans
 - c. Other insurance companies
- (9) Other institutional investors
 - a. Savings and loan associations
 - b. Nonprofit organizations
 - c. Other financial institutions
- (10) The rest of the world

The following types of transactions are distinguished:

<i>Nonfinancial transactions</i>	<i>Financial transactions</i>
Payments and receipts for:	Changes in:
Payroll	Currency and deposits
Interest	Gold and Treasury currency
Dividends and branch profits	Trade credit
Rents and royalties	Bank loans other than mortgages
Insurance premiums	Federal obligations
Insurance benefits	State and local obligations
Grants and donations	Corporate securities
Taxes	Mortgages
Tax refunds	Miscellaneous financial assets and liabilities
Net withdrawals by proprietors	
Real estate transfers	
Other goods and services	

For the private sectors, capital expenditures—construction, equipment, inventories, and real estate—which are included in the “other goods and services” and the “real estate transfers” categories, are presented separately.

There are no series in the system labelled as saving. However, enough information is provided to permit calculation of a variety of concepts of saving—either in terms of the net between certain receipts and expenditures or of the net accumulation of certain assets less the net incurrence of certain debts.

Because of the limitation on transaction coverage of the system, some concepts of saving are not directly derivable from the system as such. An important example involves depreciation, which is an internal transaction between different accounts of the same trans-

actor, and is not recorded as such in the accounts. This means that gross business saving concepts, but not net business saving concepts, are derivable from the accounts proper. However, measures of depreciation charges are provided in the business sector statements as memoranda items.

2. **Historical statistics of saving.** This brief enumeration is limited to series that cover aggregate national or personal saving, extend over a period of substantial length, and are available up to a relatively recent date. This reduces the list to two series, the estimates of annual national saving and its components for 1897 to 1949 in Goldsmith's, *A Study of Saving in the United States*, and the figures for personal saving and its components for 1929 to 1952 in Friend and Natrella's, *Individuals' Saving*, Chapter 5.¹⁹

Friend and Natrella's series is conceptually identical with the SEC's annual estimates of personal saving for 1933 to 1952; but extends that series to the years 1929 through 1932.²⁰

The estimates in *A Study of Saving in the United States* follow the balance sheet approach except for corporate saving which is estimated from the income account. They provide for each year from 1897 to 1949 estimates of aggregate national saving; total saving of seven sectors (nonfarm households; farmers; unincorporated business enterprises; corporations; Federal Government; State governments; local governments); and of the components of saving—from one to three dozen of separate items depending on the sector—except for corporate saving for which no breakdown by form of saving is given. The forms of saving distinguished in the study are listed in Table 6.

The main conceptual differences between Goldsmith's saving estimates and those of the SEC, which are also derived from the balance sheet, are:

(a) Coverage of saving by Federal, State, and local governments, and corporations, which permits calculation of aggregate national saving.²¹

¹⁹ For a description of other series of saving, covering either shorter or less recent periods, see *A Study of Saving in the United States* (Princeton University Press, 1955) Vol. II, Chap. 5, and *Individuals' Saving*, pp. 93-97.

²⁰ The fact that the figures in *Individuals' Saving*, p. 32, differ from those in the 1954 and the 1951 editions of *National Income* is due to the fact that they incorporate some, but not all, of the revisions made in Table 6 of *National Income* between these two editions.

²¹ As has been noted above, corporate saving estimates are prepared by the Department of Commerce.

TABLE 6

COMPONENTS OF PERSONAL SAVING DISTINGUISHED IN
 "A STUDY OF SAVING IN THE UNITED STATES"¹

 Assets

Nonfarm construction ²
Residential
Nonresidential
Farm construction ²
Consumer durables ²
Producer durables ²
Inventories
Currency
Commercial bank deposits
Savings bank deposits
Credit unions and cooperatives
Savings and loan associations
Mortgage holdings
Life insurance reserves
Pension and retirement funds
U. S. Government
State and local
Private
Securities
U. S. Government
State and local
Corporate and foreign bonds
Stocks (common, preferred)
Share in saving of foreign corporations other than U. S. subsidiaries

Liabilities

Nonfarm mortgage debt on
Residential structures
Nonresidential structures
Farm mortgage debt
Debts to banks and other institutions
Borrowing on securities
Consumer and other debt
Tax liabilities

¹ For instance, Vol. I, Table T-6.

² Figures are given gross and net of depreciation allowances.

(b) Separation of personal saving into that of nonfarm households (including nonprofit institutions), farmers, and nonfarm unincorporated business enterprises.

(c) Provision of a separate estimate for saving through consumer durables.

(d) Inclusion of several items not regarded as parts of saving by the SEC, particularly net soil improvement (improvement expenditures less erosion), business capital expenditures charged to current account, and brokers' and dealers' commissions and profits on change of hands of existing assets.

(e) Provision of alternative capital consumption allowance estimates based on replacement cost.

IV. RECOMMENDATIONS

A. GUIDING PRINCIPLES

For several years business, government, and academic users have felt that the available statistics of saving do not permit them to follow the short-term movements or the structural changes in saving with the promptness, in the detail, and with the confidence that their importance for analysis of the economy demands. This feeling has been expressed in hearings before the Joint Committee on the Economic Report,²² as well as within the Government²³ and in the professional literature.²⁴ The inclusion of saving by the Subcommittee on Economic Statistics among the main fields of economic statistics most in need of review, and possibly of improvement, may be taken as another expression of this attitude.

That this feeling is widely held should not be taken as a reflection on the progress made within the last ten to twenty years. It is easily forgotten that the first statistics of saving in the United States that gave more than an estimate of the undivided difference between current income and current expenditures were published only in the mid-1930's,²⁵ and that the first detailed sample inquiry into household saving dates from the same period.²⁶ It is equally difficult to realize now that up to the early 1940's we were without any regular and systematic statistics on the forms of personal

²² See particularly (in chronological order): U. S. Congress, 80th Cong., 2nd Sess., Joint Committee on the Economic Report, Report on *Current Gaps in our Statistical Knowledge*, 1948, pp. 2, 3; U. S. Congress, 81st Cong., 1st and 2nd Sess., Joint Committee on the Economic Report, *Report on the Economic Report of the President*, (S. Repts. 88 and 1843), 1949, 1950, pp. 86, 87 and 114; U. S. Congress, Joint Committee on the Economic Report, 83rd Cong., 2nd Sess., *Hearings Before the Subcommittee on Economic Statistics*, Jul. 12 and 13, 1954, pp. 21, 22, 167, 173, 229, 233, 290, 291, 208-211, 317, 318.

²³ See report of Interagency Committee on Savings Estimates.

²⁴ See, for instance, discussions of G. Colm and R. W. Goldsmith at meeting of the American Statistical Association, December 1952, or *Individuals' Saving*, pp. 15, 16, 98.

²⁵ See estimates in W. H. Lough and M. R. Gainsbrugh, *High Level Consumption* (1935) for 1904, 1914, and 1919 to 1931; J. Marschak and W. Lederer, *Kapitalbildung* (1936), for 1925 to 1930; and R. W. Goldsmith and W. Salant in *Studies in Income and Wealth*, Vol. 3, (1939), for 1933 through 1937.

²⁶ Reference here is to the Consumer Purchases Study of 1935-36, the results of which were published in the late 1930's, insofar as they refer to saving, e.g., in National Resources Planning Board *Consumer Expenditures* (1939), and *Family Expenditures in the United States* (1941).

saving.²⁷ Compared to the dearth of information on saving that prevailed as late as twenty years ago, progress certainly has been notable. As in so many fields of economic statistics, the demonstration that figures formerly held to be beyond reach could actually be produced, has led to the demand for more detailed statistics, for earlier availability of the figures, and for a reduction in the margin of error of the estimates. Such demands are entirely legitimate. More than that, they constitute one of the indispensable pressures that force continual improvement upon our statistics. But they should not obscure the progress made, nor should they be taken to reflect on the zeal, competence, or efficiency of the producers of saving statistics.

One of the Committee's main conclusions is that the statistics of saving in the United States now available are still far from the state in which they must be if they are to play a role corresponding to their importance in the analysis of business cycles and economic trends. The Committee fully appreciates that development of the statistics of saving to this point will require a concerted effort on the part of the Government and those private institutions that have to furnish the basic information; will take several years of preparation and experimentation; and will call for considerable additions to the very meager sums now allocated within the Federal Government to the statistics of saving.²⁸

The Committee has regarded as its primary duty the presentation of a set of recommendations that give promise of providing, not immediately and at one blow, but in steps and after several years of experimentation, a system of statistics of saving that can do the job demanded of them by policymakers in the Government, by

²⁷ The quarterly releases on saving by the Securities and Exchange Commission started in 1942; the more comprehensive annual figures (Table 6 of the national income accounts) began to be published in 1947.

²⁸ While the Committee regards an estimate of the cost of its recommendations and of the means of providing for them as beyond its task and its capabilities, the Committee has been impressed by the fact that, according to information furnished by the Bureau of the Budget, the total amount spent within the Federal Government on statistics of saving is as small as \$21,000 a year, of which the Securities and Exchange Commission and the Department of Agriculture account for about \$8,000 each, and the Office of Business Economics of the Department of Commerce for \$5,000. These figures are based on the additional cost caused by preparing the statistics of saving discussed in this report, and make no allowance for the fact that some of the expenditures for the basic information used might be allocated to the cost of saving statistics to the extent that such information would not otherwise be collected or processed. Even then, however, it seems evident that the amounts now being spent by the Federal Government on statistics of saving are extremely low compared to their importance.

business analysts, and by economists. The Committee's recommendations, therefore, are concentrated on projects which, although some of them are neither easy nor inexpensive, hold out the hope of making a substantial forward step toward that goal. Recommendations of minor improvements of a more technical character that can be fitted rather easily into the statistics now being compiled have been treated summarily or omitted altogether. The Committee felt justified in doing so as this type of recommendation is discussed in adequate detail in the reports of the Interagency Committee on Savings Estimates.

Apart from these very general considerations, the Committee has been guided in its recommendations by the obvious principle that statistics of saving should, like all economic statistics, satisfy the requirements of accuracy, internal consistency, comprehensibility, timeliness, and flexibility.

(1) No set of economic statistics can be absolutely accurate in a field such as the national accounts where a considerable amount of judgment by the units who prepare the basic data and by the statisticians who put the material together cannot be avoided. On the other hand, figures that are clearly subject to wide and erratic deviations from more correct data, which differ by a wide margin from other estimates that are conceptually equivalent to them, or which call for frequent and substantial revisions, may do more harm than good. Thus, while no quantitative standard of accuracy can be set up, there clearly is a margin of error beyond which it becomes preferable not to compile, or at least not to publish, statistics.

Considerations of accuracy are particularly pertinent in the field of saving statistics because so many of them are obtained as residuals between minuends and subtrahends of much larger size. This is the case not only for the statistics of saving from the income account—though it is most pronounced here—but also for many components of personal saving which under the balance sheet approach are obtained as the residual between changes in total outstandings (e.g., of securities of different types or of deposits) and changes in nonindividual holdings. In such a situation a fairly high degree of accuracy in minuend and subtrahend does not insure an acceptable accuracy of the residual. If the error in minuend and subtrahend is only 1 per cent, the error in the residual may be as high as 20

per cent if the residual is only one-tenth as large as the minuend as is the case in the calculation of personal saving from the income account.

(2) The self-evident requirement of internal consistency demands that the statistics be developed from a consistent system of records and, going a little further, requires consistency in methods throughout the compilation. When applied to saving statistics it calls primarily for application of identical concepts to the measurement of saving of different sectors, specifically the application of essentially business accounting methods to households and governments.

(3) The statistics should be understandable not only by specialized experts, but also by people who desire to use them in their own planning, primarily business enterprises, and by policymakers in the Government. This requirement implies three corollaries: sufficient explanation must be provided to enable users to understand the estimates; the statistics must be published in a form that minimizes misinterpretation, even by those who read while they run; and the statistics must be published in sufficient detail to permit careful readers to evaluate their validity and to adapt them to uses not made by their compilers.

(4) While the requirements of comprehensibility, internal consistency, and accuracy apply, although not with equal weight, to saving statistics whatever their use, the speed of collection and publication depends greatly on the objective. It is obviously much more essential for saving statistics used to follow developments in the capital market or in those used to detect changes in the business situation than for statistics required for the analysis of structural changes in saving or of saving habits.

(5) Flexibility is probably a much more important requirement in the case of statistics of saving than in many other fields, partly because of the widely varying objectives of statistics of saving, and partly because of the many, as yet unsolved, differences of opinion about concepts and methods.

Flexibility demands, considering the main objectives of saving statistics, that the figures be made available in a form that permits users to rearrange them to meet all the main alternative concepts of

saving which seem to have broad economic uses. This means, for example, that so far as possible:

(a) Statistics be prepared separately for the saving of all major groups of economic units, specifically including government;

(b) Statistics be prepared for personal saving through consumer durables;

(c) Depreciation allowances, depletion, and other accruals be shown separately so that estimates for gross and net saving can be derived;

(d) Depreciation allowances be calculated both on original and replacement cost basis, and possibly also on curvilinear in addition to straight line basis;

(e) Realized capital gains be shown separately, segregating in particular inventory profits and losses;

(f) Estimates be shown wherever possible for the separate flows that result in net saving of a given form, i.e., for new loans made and loans repaid rather than only for net changes in loans outstanding, for securities purchased and sold rather than for the balance of transactions, and for changes in policyholders' equity and in policy loans rather than for net equity only. This will permit the derivation of saving estimates of differing degrees of netness;

(g) Estimates on the basis of a constant price level be shown in addition to current values.

Even in this summary discussion it is necessary to keep in mind that some of the requirements clash. Thus, for instance, compromises will be necessary between the desire for speed and for accuracy, and possibly also between the desire for flexibility and consistency, and for accuracy and comprehensibility. What weight should be given to each of these requirements in evolving the necessary compromise is a matter of judgment, mainly involving an evaluation of the relative importance of the different objectives which saving statistics serve.

B. THE IMMEDIATE PROGRAM

In this section we are listing recommendations that can be put into effect within approximately one year, and that do not require

the collection of new primary data on a substantial scale. Some of these recommendations, although based on existing data, are rather laborious and many of them may call for moderate additions to the budgets of the agencies now compiling the statistics of saving for which improvements are proposed.

1. Aggregate personal saving (Department of Commerce).

The chief value of this series to users seems to be its early availability—approximately two months after the end of the quarter covered. Its analytical value is obviously limited since it can be derived only in the form of the undivided difference between current personal income and current personal expenditures and tax payments.²⁹ From that point of view the main purpose of the series is to serve as a rough check on aggregate personal saving as it is estimated by the balance sheet approach as the sum of saving and dissaving through numerous separate forms of assets and liabilities.

Improvements in the reliability of this series depend entirely on improvements in the estimates of personal income and of expenditures. Even limited familiarity with the problems involved leads to serious doubts that substantial improvements can be made in short order or without substantial additional effort, i.e., that they can be handled within an immediate program for the improvement of saving statistics.

The only improvement that would seem to be feasible in the near future, and one desired by many users, is the presentation of the estimate of personal saving on an entirely unadjusted basis in addition to the forms in which it is now available.³⁰ Such an en-

²⁹ The second estimate of personal saving as a residual that can be (or could rather easily be) derived from the Department of Commerce's system of national accounts is subject to the same limitation. This is the difference between total national investment (in the sense of expenditures on durable goods and additions to inventories less capital consumption allowances) and the sum of saving of corporations and governments, both derived from their income accounts. This difference must be arithmetically equal to personal saving, since looking at the figures after the close of any period, national investment is necessarily equal in magnitude to national saving during the period.

³⁰ At present Commerce presents both a seasonally adjusted and unadjusted personal saving series. However, what is designated as the unadjusted series reflects certain seasonal adjustments since some components of personal income, e.g., farm and nonfarm entrepreneurial income, are adjusted for seasonal movements.

Adjusted personal saving as now calculated is not the result of the seasonal adjustment of the difference between unadjusted disposable personal income and expenditures, but the difference between seasonally adjusted income and seasonally adjusted expenditures, each of which in turn is the sum of seasonally adjusted figures for numerous components. This character of the adjusted estimates of personal saving makes their interpretation considerably more difficult and strengthens the case for publication of unadjusted figures.

tirely unadjusted figure should be provided for the use of analysts who prefer to make their own adjustments and for comparison with related bodies of data, particularly the Securities and Exchange Commission's estimates of personal saving. The Committee is aware of some technical difficulties in providing unadjusted figures, and of the limited significance of such figures in some fields, particularly agriculture, but nevertheless feels that a determined effort should be made to present this series on an entirely unadjusted as well as on a seasonally adjusted basis.

2. Individuals' saving (Securities and Exchange Commission). Several improvements can be made in this series—both on an annual and a quarterly basis—in the near future and with the expenditure of only relatively small additional effort.

(a) Segregation of saving through private pension funds administered by trustees other than insurance companies.³¹ This substantial improvement in the usability of the estimates is already under way and will be incorporated in the current statistics beginning with the second quarter of 1955. However, improvement of the figures, now based exclusively on pension funds of corporations registered with SEC, by collection of information on other funds—possibly from trustees—is desirable.

(b) Breakdown of saving through corporate securities, now given in one figure, into bonds and stocks and possibly further into common and preferred stock. In view of the substantial differences in the distribution of bonds and stocks among groups of savers, this breakdown, one commonly requested by users consulted by the Committee, seems overdue. A minor problem is created by the allocation of bank loans on securities which are reported without a breakdown as to the character of the collateral (other than U. S. Government securities). Provisionally the assumption, implied in the present statistics, may be made that all such borrowings are made for the purpose of acquiring corporate stock or State and local government bonds rather than corporate bonds. As soon as feasible, however, occasional inquiries should be made which will permit rough allocation of the statistics among these three classes of securities.

³¹ Data on saving through pension funds administered by insurance companies are available from the Institute of Life Insurance.

(c) Segregation of new loans and repayments for mortgage loans similar to the data now available for instalment debt. The need for this breakdown is created by the different character of the two components of the net change in debt outstanding, repayments being to a large extent of a contractual nature while new loans made do not have this character and are usually much more volatile in their movements. Ultimately contractual repayments of mortgages should be separated from prepayments and from repayments in connection with changes in ownership, but a start in improving the present series should be made before this additional refinement can be introduced.

(d) Calculation of net saving through one- to four-family dwellings and through consumer durables. This addition to the saving statistics, which now show only gross saving in these forms, is called for in order to make saving through homes and consumer durables logically comparable with the other components of saving now covered by the statistics. For one- to four-family homes this is facilitated by the availability of the Department of Commerce's annual estimates of depreciation allowances. No conceptual or substantial practical problems should be encountered in the case of consumer durables either. Estimates of personal expenditures are available for a sufficiently long period in the past and enough information is at hand on average length of life of the different types of consumer durables to prepare estimates of depreciation that are not inferior to those now accepted for one- to four-family homes.

(e) Improvement in estimates of net issue of securities by more exhaustive utilization of available sources, particularly as regards retirements and conversions, and by insertion in SEC-FTC *Quarterly Financial Reports* of information on issues and retirements of respondents' own securities and on holdings of corporate securities of nonaffiliated issuers.

(f) Provision of seasonally adjusted figures, in addition to the unadjusted series now released. The adjustment, of course, should be made separately for each of the items suggested in Table 7. The Committee is not unmindful of some practical as well as some conceptual difficulties involved in the seasonal adjustment of financial data, but feels that a serious attempt at working out a practicable and meaningful adjustment is called for.

3. **Survey of Consumer Finances.** As the Survey is taken only once a year and substantial changes in its operation require extended technical preparations that have to be completed several months before the field work is done, no suggestions are made for improvements that could be effected in the near future. However, the discussion in subsection C-4 of improvements that are possible over a longer period of time is of some relevance here, as some of these might be tried out on an experimental basis if the next Survey is taken on schedule, i.e., in January 1956.

4. **Presentation of statistics.** The Committee feels that the usefulness of existing statistics of saving can be considerably increased and their misinterpretation reduced, though not eliminated, by some changes in the methods of presentation that can be accomplished rather easily.

a. *Aggregate personal saving (Department of Commerce).* Consideration should be given to abandoning calling the series "personal saving," and to using instead a more neutral description, possibly "difference between estimated disposable personal income and estimated personal expenditures." Even the new title could not prevent some users from treating the figures as if they constituted a specific estimate of saving, but would at least reduce the Department's responsibility for this interpretation of the figures, and probably would also act as a warning sign to unwary users.

b. *Survey of Consumer Finances.* The available descriptions of the methods used in the Survey of Consumer Finances seem adequate, although more emphasis on the sampling error in the figures is advisable in the light of more recent studies made by the Survey Research Center itself on the effect of the extreme skewness in the underlying data. The Committee, however, finds considerable merit in the suggestion that the data be made available, at least for professional use, in a much less "pre-digested" form than they now appear in the *Federal Reserve Bulletin* where generally only distributions (e.g., the per cent of households with different characteristics which shows saving or dissaving in a given form) and relationships among forms of saving are presented. Indeed, serious consideration should be given to supplying interested and qualified users with a transcript of the replies for each household in the sample, so far as they are in quantitative form.

c. Individuals' saving (Securities and Exchange Commission).

The Committee's main recommendations regarding the presentation of saving statistics pertain to those of the Securities and Exchange Commission. The Committee recommends that the Commission furnish regularly a breakdown of its quarterly and annual figures, both of personal saving through claims and of aggregate personal saving, that would show many more components than are now made available to the public, and provide at appropriate intervals a detailed description of the methods and sources of the estimates.

Up to very recently the numerous users of the Commission's statistics of saving could not inform themselves (save by direct consultation with the Commission's staff) about the coverage of the items shown in the releases, the methods employed in building up the estimates, and the sources used.³² This state of affairs hinders intelligent use of the figures and hampers constructive criticism by users. For the time being an unofficial description of the Commission's estimates for the years 1933 through 1952 has improved the situation.³³ However, this valuable private effort—which necessarily is already getting out of date—cannot be the answer. What is required is, first, the publication each year of all the components used in building up the estimates in at least the detail shown in Part II of *Individuals' Saving*; and, secondly, an official description of method and sources of the estimates, furnished in full detail at fairly long intervals, but kept up to date through supplements so that users have at all times a full account of the derivation of the statistics.

Quarterly releases need not go so far in segregating component series, but there certainly is no reason why a substantially larger number of components than hitherto published should not be shown. Table 7 outlines a presentation that could easily be furnished, since virtually all of the components are available in the Commission's worksheets and the few that are not can be furnished with relatively little additional effort, and that at the same time would meet the more urgent demands of users who want to make an

³² The unofficial description of a very early version of the statistics in *Studies in Income and Wealth*, Vol. III, published in 1939 was already out of date when the Commission began releasing statistics of individuals' saving in 1942.

³³ See *Individuals' Saving*, Part II.

TABLE 7

SUGGESTED PRESENTATION OF SECURITIES AND EXCHANGE
COMMISSION QUARTERLY SERIES OF SAVING BY
INDIVIDUALS IN THE UNITED STATES ¹

-
1. Currency and bank deposits
 - a. Currency
 - b. Demand deposits
 - c. Time and savings deposits
 - (1) Commercial banks
 - (2) Savings banks
 - (3) Postal savings system
 - (4) Credit unions
 2. Savings and loan association shares and deposits
 3. Private life insurance (excluding 4)
 - a. Change in policyholders' equity
 - b. Change in policy loans
 4. Private pension funds
 - a. Administered by insurance companies
 - b. Other
 5. Government insurance and pension funds
 - a. Federal funds
 - (1) Assets
 - (2) Policy loans
 - b. State and local funds
 6. Securities
 - a. U. S. Government savings bonds
 - (1) Sales
 - (2) Interest accrual
 - (3) Redemptions
 - b. Other U. S. Government securities
 - (1) Change in securities outstanding
 - (2) Change in nonindividuals' holdings
 - (3) Change in individuals' holdings
 - (4) Change in individuals' borrowing
 - c. State and local government securities
 - (1) Change in net outstandings
 - (a) New issues
 - (b) Retirements
 - (2) Change in nonindividuals' holdings
 - (3) Change in individuals' holdings
 - (4) Change in individuals' borrowing
 - d. Corporate and other bonds
 - (1) Change in outstandings ²
 - (a) New issues
 - (b) Retirements
 - (2) Change in nonindividuals' holdings
 - (3) Change in individuals' holdings
 - (4) Change in individuals' borrowings ³
 - e. Corporate and other stock (excluding f)
 - (1) Change in outstandings ²
 - (a) New issues
 - (b) Retirements
 - (2) Change in nonindividuals' holdings
 - (3) Change in individuals' holdings
 - (4) Change in individuals' borrowing
 - f. Investment company stock
 - (1) Sales
 - (2) Redemptions

7. Nonfarm 1- to 4-family dwellings
 - a. Expenditures on construction
 - b. Net acquisitions from nonindividuals
 - c. Change in mortgage debt
 - (1) Loans made
 - (2) Repayments
 - d. Depreciation allowances
8. Holdings of mortgages on 1- to 4-family dwellings
(change in individuals' holdings)
9. Consumer durables
 - a. Expenditures
 - b. Change in instalment debt
 - (1) New borrowings
 - (2) Repayments
 - c. Depreciation allowances
10. Personal debt not elsewhere classified
11. Total net saving
(Items 1 through 10)
12. Total gross saving
(Item 11 plus 7d and 9c)
13. Saving through financial assets
(Items 1 through 6 and 8)
14. Liquid saving
(Items 1, 2, and 6)
15. Contractual saving
(Items 3, 4, and 5)
16. Change in assets (net of depreciation)
(Item 11 plus item 17)
17. Change in debt
(Items 3b, 5a(2), 6b(4), 6c(4), 6d(4), 6e(4), 7c, 9b, and 10)

¹ In addition to personal holdings, includes personal trust funds and assets and debts of unincorporated business and of nonprofit institutions in the forms specified.

² Includes, among new issues and retirements, conversions and other exchanges.

³ May initially have to be combined with 6e(4).

analysis of the figures.³⁴ The release of such a table does not preclude the use of an additional shorter presentation that may be tailored for general public use.

The suggested arrangement would:

(i) Be much more informative to users particularly by separation of securities issued and retired, distinction between mortgage loans made and repaid, and segregation of the different forms of borrowing by individuals.

(ii) Be consistent in that saving through one- to four-family homes and through consumer durables is put on a net basis like the other items in the series, and in that construction by private nonprofit organizations, which is now included without the attaching mortgage debt, is eliminated.

³⁴ Many business users have expressed a wish for a breakdown on nonindividuals' holdings of securities (Items 6-b (2), 6-c (2), 6-d (2), and 6-e (2) of Table 7) showing separate figures for each major group of institutional holders. While the Committee is not certain that the publication of these figures on the often preliminary quarterly basis is as yet feasible, it advises addition of this information to the quarterly release as soon as the data appear to be sufficiently reliable.

(iii) Show much more relevant institutional detail, a feature which might stimulate the interest of the institutions covered and help to secure their cooperation in improving the statistics.

(iv) Make it clear that the statistics do not include (insofar as separation is possible) the saving in the form of tangible assets of unincorporated business, agriculture and nonprofit institutions.

(v) Permit the derivation of several alternative estimates of personal saving—some of them indicated under Items 11 to 15—and thus reduce the tendency, injurious to intelligent analysis of the figures, of limiting attention to one total, usually the last line of the table.

(vi) Point the way toward the more detailed annual statistics of saving and can easily be integrated with them.

5. Development of monthly indicator series of personal saving. From the Committee's discussions, and particularly from the testimony of the business users of saving statistics, it is evident that for the analysis of short-term business fluctuations and capital market movements a set of figures like the Securities and Exchange Commission's quarterly releases which appear three to four months after the end of the quarter, i.e., three to eight months after the event, is not satisfactory, even if the figures themselves, once they appear, should provide the users with all the information they want. On the other hand, figures that become available more rapidly probably will have to be simpler and less comprehensive than those now furnished, at least initially. This, however, need not be a serious loss for short-term analysis. For that purpose well selected and sensitive indicator series published promptly may be at least as useful as more comprehensive figures that fit into a system of national accounts, but become available only after substantial delay.

On the basis of the limited exploratory work the Committee has been able to do in this field, it is felt that measures of the following components of personal saving could be made available in one joint release somewhat before the end of the month following the month covered by the report:

(a) Change in deposits in mutual savings banks. Here as under b to k, it will have to be assumed that all of the changes are attributable to the personal sector, an assumption that is not likely to be

seriously in error and that is also made in the Securities and Exchange Commission's quarterly and annual statistics except for items a, b, and j.

- (b) Change in time deposits of commercial banks.
- (c) Change in deposits with Postal Savings System.
- (d) Change in shares and deposits with savings and loan associations.
- (e) Change in shares and deposits with credit unions.
- (f) Change in assets (or policyholders' equity) of private life insurance companies.
- (g) Change in assets of private pension funds administered by trustees other than insurance companies.
- (h) Change in assets of Federal pension and trust funds.
- (i) Change in assets of State and local retirement funds.
- (j) Net sales of U. S. Government savings bonds.
- (k) Net sales of investment company stock.
- (l) Sales to general public of other corporate stock.
- (m) Change in institutional holdings of mortgages on one- to four-family dwellings.
- (n) Change in consumer (instalment and noninstalment) debt.
- (o) Change in individuals' borrowing on securities.
- (p) Change in policy loans.
- (q) Expenditures on one- to four-family dwellings.
- (r) Expenditures on consumer durables.

Items a, b, d, e, g, i, k, and m to p will have to be secured from a sample of institutions—already reporting on a monthly basis in several instances—and the sample figures blown up to cover all institutions of the same type. Comprehensive data are available for items c, f, h, and j. Items c, e, h, and i move with a fair degree of regularity in the short run, or are of very small absolute size, and might therefore be initially left out of the indicator series, though some of them are easily available. Estimates for q and r could be prepared relatively easily.

The only items for which new statistics will have to be collected

are e, g, and i, some of which might, as indicated above, initially be omitted.

To obtain item l, the Securities and Exchange Commission might have to introduce some reporting system under which the managers of new issues will furnish an estimate of sales to noninstitutional buyers. Initially, however, it may suffice to use simply the present estimate of new issues of common stock.³⁵ Similarly, information may later be developed for corporate bonds, but at the present time the relatively small amount of noninstitutional purchases of such bonds probably does not justify inclusion of this item.

An important problem is posed by the seasonal fluctuations in monthly savings data. Many of the components of saving and dis-saving are known to be subject to substantial fluctuations even on a quarterly basis, and these movements are likely to be more pronounced when monthly data are used. Therefore, the monthly indicators should be shown, as has been recommended in the case of the quarterly statistics, on a seasonally adjusted as well as an unadjusted basis. Such an adjustment should not be too difficult to make for those series which have been available for all or most of the last decade (i.e., for items a to d, f, h, j, n to p, and also for l if the present monthly series of new issues of stock is used) so that a seasonal adjustment can be worked out by the customary procedures. Of the remaining items, the necessary back data are obtainable for q and r and probably also for i. This would leave e, g, k and m as the items for which some compromise solution may have to be found.

C. THE LONGER RANGE PROGRAM

The development of statistics of national saving and its components may be based on comparisons of income and expenditures over a period, on balance sheet items for successive points of time, and on cross-section studies of households and other units. The recommendations below will center on statistics of saving using the balance sheet approach and the sample statistics of household saving, but the first recommendation deals briefly with the income-

³⁵ This would mean that the set of indicators would have no information on individuals' saving through net purchases of outstanding common stock. Such information could, however, be developed by using figures on net common stock purchases by institutions, particularly investment companies—figures that are available or could be procured without undue difficulty.

expenditure approach. While the recommendations made below cannot be put into effect immediately, it is felt that they could be realized, given sufficiently energetic sponsorship and adequate funds, within a period of three to five years.

1. Personal saving from the income account—aggregate figures. The main series here is the difference between personal income and personal expenditures and taxes, prepared by the Department of Commerce. This series, available fairly promptly, is used quite widely; and, if only for that reason, improvements in its accuracy are to be striven for. In general, with scarcity of data in the field, the approach from the income account side is not to be neglected. However, since the saving figure here is the difference between two much larger totals, each of them an amalgam of estimates for numerous parts, the Committee can formulate no specific recommendations. Almost all of the Committee's other recommendations, if followed, would in one way or another contribute to the improvement of the estimates in a system of national income accounts, and hence also to improvement of the residual estimate of saving. On the other hand, a direct examination of the income and expenditure totals is a task beyond the purview of this Committee.

The Committee does urge, however, examination of the possibility of splitting the present aggregates for personal income and expenditures and their components among nonfarm households, farmers, nonfarm unincorporated business enterprises, and private nonprofit institutions. Within the period envisaged here in the longer range program, it should be feasible to experiment with separation of at least one or two of the groups suggested (for example, farmers as distinct from others; and perhaps private nonprofit institutions). Were this to be done, the resulting estimates of saving, though still representing undivided residuals between each group's income and expenditures, would become important tools for an analysis of saving. At the same time, the usefulness of the residuals for purposes of checking upon results of saving estimates in other approaches would be significantly enhanced.

2. Personal saving from the balance sheet—aggregate figures. As indicated in the first section, the Committee has concentrated its attention on this series as offering the best hope for improvement that will ultimately lead to a set of saving statistics of satis-

factory reliability and rapid availability, able to serve most of the needs of business analysts and economists. The recommendations therefore center on additions to and improvements in the present Securities and Exchange Commission's estimate of aggregate personal saving as summarized in Table 6 of the *National Income* issue of the *Survey of Current Business*.

a. *Objectives.* The objectives of these improvements are fairly clear. They comprise:

(i) Putting the entire series on a quarterly basis, while ensuring that the figures will be available not more than approximately three months after the end of the quarter. This will mean that a statement similar to that now provided in Table 6 of the *National Income* Supplement (though more detailed and enlarged as suggested below) will be available quarterly, and will permit a quarterly reconciliation with the estimates of personal saving derived from the national income account, thus meeting a demand expressed by many users of saving statistics.

(ii) Segregation, for all forms of saving, into saving by nonfarm households; farmers; brokers and dealers in securities and other selected unincorporated financial enterprises; other unincorporated business; and private nonprofit institutions. A further breakdown of nonprofit institutions might well identify some of the most important groups, such as foundations, educational institutions and labor unions. This segregation is at the present time in effect only for most types of tangible assets, but is missing for saving through financial assets.

(iii) Separation, for all forms of saving where the distinction is relevant, of changes in assets from changes in the debt which is customarily related to the asset. This separation is already being made in many cases, but not in others.

(iv) Segregation, in cases where saving is in the form of changes in debt, of incurrence of new indebtedness from repayment of outstanding debt. This distinction is generally not made in the statistics as they are now being compiled.

(v) Separation of debt on old (outstanding) and new (recently created) assets. This breakdown, not provided in the available

statistics, is relevant primarily in the case of mortgage loans, and secondarily for securities.

(vi) Consistent elimination of valuation changes from changes in assets and debts as derived from balance sheets, in order to approximate as closely as possible the moneyflows that represent saving. This adjustment is already being made for the most important assets of the major institutions.

(vii) Provision of separate figures for purchases and sales in place of the figure for the difference between the two more customarily being used, wherever gross figures are relevant, i.e., primarily in the case of long-term securities. (Similar substitution of gross for net figures in the case of claims like mortgages and instalment loans is already suggested under iv.)

(viii) Inclusion of saving in the form of acquisition of stock in small and newly organized corporations not distributed through the investment banking machinery, a form of individuals' saving now omitted from the statistics although of considerable importance, having been estimated at over \$½ billion per year from 1946 to 1949.⁸⁶

(ix) Considerable improvement in the estimates of personal saving through real estate other than one- to four-family dwellings, for which only very rough figures are now available.

(x) Provision, on the basis of the existing data on saving and/or the additions suggested here, of sources-and-uses of funds statements for the entire personal sector and for its main subsectors.

b. Methods of implementation. While the objectives of the Committee's recommendations are fairly evident and amenable to concise listing, the situation is quite different for the operational aspects of improving aggregate statistics of personal saving by the balance sheet approach. The attainment of, or even the approach to, our objectives will require more intensive utilization of numerous statistics already available and the development of several new series, many of which involve difficult technical problems and often call for a choice between several alternative sources and methods. Even a summary discussion of all these problems is not possible here, assuming that the Committee had had the time to explore them

⁸⁶ *A Study of Saving in the United States*, Vol. I, p. 525.

all to the point where it could in each case form a judgment about their feasibility and advisability. All that can be done, and probably all that is necessary to make the Committee's approach understood, is to discuss briefly the main improvements in and additions to the statistical data that will be required to move towards and finally reach the broad objectives set forth above. This discussion is intentionally limited to a few bodies of data that will be of decisive importance in securing major improvements in the statistics of personal saving—(i) a current survey of unincorporated business enterprises; (ii) the use of institutional records to distribute aggregate personal saving among groups; and (iii) a current survey of real estate.

(i) *Current survey of finances of unincorporated business enterprises.* Reliable knowledge, on anything like a current basis, of the financial situation of unincorporated business is woefully inadequate. Indeed, the lack of trustworthy figures is not limited to current information, but extends to benchmark data. Our almost scandalous ignorance in this field is at the bottom of most of the serious shortcomings of the present statistics of personal saving, and is the main factor preventing separate estimates for the saving of households as well as of unincorporated business.³⁷

A considerable step forward is now being taken by the tabulation, though only in alternate years, of the relevant annual data contained in the income tax returns of partnerships and sole proprietorships which have recently been initiated by the Internal Revenue Service. These tabulations will include the following balance sheet items for partnerships (though not for sole proprietorships since these do not submit balance sheets): cash, notes and accounts receivable; inventories; investments; depreciable assets (gross and net of depreciation reserves); land; other assets; accounts payable; notes and mortgages payable; other liabilities; partners' capital accounts. These tabulations will permit, first, a rough calculation of saving of partnerships—possibly with the assistance of figures on

³⁷ It is not necessary to discuss here in detail the extremely crude estimates that now necessarily have to be resorted to, or the wide differences existing between estimates made by different government agencies; e.g., the Securities and Exchange Commission and the flow-of-funds study of the Federal Reserve Board. (See brief description of SEC estimates in *Individuals' Saving*, pp. 38-41, and discussion in *A Study of Saving in the United States*, Vol. II, Chap. 13.) Any study of the relevant figures and documents will indicate the crying need for improvement.

capital expenditures derived from national income statistics—not only for all partnerships together, but also classified by industry and size. They will also be of considerable help in developing estimates for the saving of nonfarm households as they will considerably improve the estimates for deposits and possibly for securities. The data from the partnership returns for 1953, that are now being tabulated, will not become available before the end of 1955, and a two-year lag apparently is about the minimum that must be reckoned with. Thus this new body of information, invaluable if not perfect for benchmark purposes, is of no use for the current estimation of saving.

What is needed as much as before is a method that will permit us to estimate, with a reasonable degree of reliability and on a current basis, changes in the main assets and liabilities of unincorporated business in a way that ties them in with the benchmark data now being developed by the Internal Revenue Service. This is undoubtedly one of the most difficult assignments in economic statistics and one that goes far beyond the field of saving statistics. It is a subject, moreover, to which so far surprisingly little attention and experimentation has been devoted in view of its importance, indicated, for instance, by the fact that unincorporated business enterprises account for approximately one-fourth of the income originating in nonfarm business, and hold about one-fifth of all assets of nonfinancial business enterprises.

The Committee has devoted considerable attention to this question, but has no easy answer to it. It seems safe to say, however, that the application of the methods of the Survey of Consumer Finances (which will be discussed below in connection with household saving) is not likely to produce satisfactory results. This is not due to the fact that the Survey uses a sample nor to the design of the sample, but reflects the difficulties in getting satisfactory responses to complicated questions in a relatively short interview conducted by persons generally not familiar with business or accounting. It is the Committee's view that a successful system of current information on the financial situation of unincorporated business will probably have to combine sampling of a few hundred, or at best a few thousand, respondents among the four million unincorporated businesses now in existence, with the intensive examina-

tion of respondents' records by interviewers thoroughly familiar with accounting. These interviewers may have to reconstruct respondents' income account and balance sheet, and to calculate saving from these records instead of expecting respondents to produce the required information from memory or with the help of occasional consultation of their papers.

This, of course, will be an expensive way of obtaining the data and should be seriously considered only after extensive preparations and some pilot studies. Should the approach through institutional records discussed in the next section be successful, the scope of this survey in furnishing current data on the financial situation and saving of unincorporated business enterprises could be redefined. It could then be used primarily for a more detailed study of the financial situation of unincorporated business and for checking whether the benchmark data obtained by the Internal Revenue Service from the balance sheets of partnerships are also applicable to sole proprietorships. Both purposes would require such a survey to be made at rather long intervals only.

There is, however, one important group of unincorporated business enterprises for which some extension of statistics now existing or revival of statistics previously available could provide the needed data without too much trouble. These are brokers and dealers in securities. The Federal Reserve Board has for many years obtained semiannually information on the main assets (which unfortunately does not include securities held) and liabilities from New York Stock Exchange firms carrying margin accounts. The Securities and Exchange Commission requires all brokers and dealers registered with the Commission (i.e., the majority of the business excluding mainly those trading solely in tax-exempt securities) to submit balance sheets at approximately annual intervals, but these reports have not been tabulated since 1948. Either extension of the Federal Reserve Board's statistics to include at least holdings of securities, or, what would be preferable, revival of the Securities and Exchange Commission's tabulations, would provide opportunity for considerable improvement in the estimates of individuals' saving through financial assets—since it would be easily possible to separate brokers and dealers in corporate and unincorporated form—even though esti-

mates would have to be made for brokers and dealers not extending credit on securities or not registered with the Commission.

(ii) *Breakdown of aggregate personal saving with help of institutional records.* At the present time personal saving through financial assets or liabilities is generally estimated in two steps. The first is the determination of the change in the aggregate amount of a given asset or liability, e.g., the change in total bank deposits or the change in mortgage debt outstanding, or the amount of net issues of securities. The second step is the deduction of the change in non-individuals' holdings from the change in the aggregate, thus measuring personal saving through the asset or liability in question as a residual. The figures for the change in nonindividuals' holdings, and in some cases also those for changes in the aggregate, are derived—after elimination of valuation changes—from the balance sheets of the holders, chiefly financial institutions, corporations, and government agencies.

The same sources, primarily the records of financial institutions, can in principle also be used to allocate many forms of personal saving among the main constituent groups, i.e., among nonfarm households, farmers, unincorporated business enterprises (sometimes further distinguishing between sole proprietorships and partnerships, and between financial and nonfinancial businesses) and the various groups of private nonprofit organizations. Some of the most important assets of individuals are claims against financial institutions or government agencies, e.g., bank deposits, equity in life insurance contracts, shares in savings and loan associations, and savings bonds. Hence, to the extent that total claims of this type can be allocated from the debtors' records among groups of creditors now included in the "personal" category, it will be possible to derive estimates for the saving of different groups through these claims. The same method is applicable to stocks by utilizing stockholders' records kept by transfer agents or the records of security brokers and dealers.

In practice two approaches may be considered. The first is to let the institutions themselves classify the accounts on the basis of the information which they have about the holders. This generally can be done only on a sample basis by, first, selecting a random sample of individual institutions of the different types, e.g., 100 or

500 commercial banks of the 14,000 in existence; and secondly, by developing within each institution included in the sample a random sample of its accounts. The second approach is to let the institutions included in the sample identify the holders of the sampled accounts by name and address, and then to collect the data necessary for an appropriate classification of the holder by direct inquiry, probably by personal interview. Which method to use will depend on the degree to which institutions will cooperate, on their ability to classify accounts, on the nature of the classification wanted, and on the funds available. Obviously, the institutions themselves generally will be able to perform only very simple and unequivocal classifications. Whether they will be in a position to segregate accounts of nonfarm households, farmers, sole proprietorships, partnerships, and nonprofit organizations, will be the crucial question in the application of this approach, although there should be little doubt about the possibility of their identifying at least the accounts of partnerships and of nonprofit institutions—if only from the signature cards. Experience with classifications of this type by the institutions themselves (e.g., in the Federal Reserve Board's annual demand deposit survey) makes it doubtful whether an occupational breakdown can be obtained with a reasonable degree of reliability, and rules out any more difficult classification such as by age, income, or wealth level of the account holder.³⁸ Hence this approach will probably require contact with the account holders or shareholders.

The method is also applicable to saving and dissaving that takes the form of borrowing from (or repayment to) institutions on mortgages, consumer credit, or commercial credit. What is required in this case is the classification of borrowers, and this should be much easier to accomplish satisfactorily for the lending institutions as financial institutions always have more information in their files about their debtors than about their creditors. Indeed, such a classification has at times been undertaken on a wide scale, the outstanding, though unfortunately now outdated, example being the 1946 Federal Reserve survey, "Business Loans of Member Banks."³⁹ The Committee is convinced that fairly frequent surveys of this

³⁸ Cf., however, results of the detailed classification of demand deposits by means of this method, undertaken in 1942-43 by the Securities and Exchange Commission (*Survey of Current Business*, June 1944).

³⁹ See *Federal Reserve Bulletin*, 1947, March, May, June, July, and August issues.

type are needed—not only in the interest of saving statistics—and would want to see them extended, at least on a sample basis, with the cooperation of the relevant supervisory agencies, to other lenders, particularly to commercial banks not members of the Federal Reserve System, savings banks, savings and loan associations, insurance companies, credit unions, finance companies, mortgage companies, and small loan companies. Separate information should be collected on the different forms of loans so that the survey would make a substantial contribution not only to the breakdown of aggregate personal saving into that of households, business, and nonprofit institutions, but would also lead to better estimates of total personal saving or dissaving through various forms of debt and through the ownership of real estate. In the latter field it would be appropriately supplemented by the current survey of real estate described in the next section.

Direct collection of information relevant for the classification of the several groups now commingled under the heading of “personal” saving along the lines just discussed will be rather expensive since there will have to be as many samples as there are types of claims and hence of institutions which participate in the survey. It will therefore be advisable to begin by testing very carefully what information on the holders of accounts can be obtained from the records of the financial institutions themselves.

It should be noted that even if this information on the characteristics of holders of accounts is obtained and total personal saving through these claims allocated on this basis among the different groups of savers, it will not be possible to use this material for studying the structure of saving and of assets and liabilities of individual households or of groups of them, the analysis of which is the main advantage in the field of saving statistics of an approach exemplified by the Survey of Consumer Finances.

Notwithstanding these questions and difficulties, the breakdown of some of the main types of personal saving through financial assets, particularly through bank deposits, savings and loan shares, life insurance contracts, and net purchases of common stocks, is important enough for the improvement of the statistics of saving, even if only a few groups of savers can be distinguished, to lead the Committee to endorse a considerable amount of experimentation

with this approach.⁴⁰ Obviously large-scale inquiries along this line should be postponed until pilot studies have established that the figures obtained in this way are sufficiently reliable. A similar approach for saving through real estate and mortgages is discussed in the next section.

(iii) *Current survey of real estate.* Next to unincorporated business, real estate is probably the field in which improvements of statistics are most needed in the interest of a satisfactory measurement of personal saving. In particular, there is need for filling the gap now created by the absence of reliable data on the saving of individuals invested in new structures other than one- to four-family dwellings; on changes of ownership of existing structures of this type; on mortgages on any structures but one- to four-family homes; and on noninstitutional mortgages on even such homes.

Some of these gaps can be closed by collecting information from lending institutions on the distribution of mortgage loans made and of repayments by type of structure and by type of mortgagor. This could probably be done only on a sample basis, but this should be satisfactory for the purpose. If the sample were sufficiently small, the figures obtained from lenders could be strengthened by going to the mortgagors, once they are identified by the lenders, for supplementary data on the structures and on their own characteristics. Such an approach, however, would still leave unbridged one of the main gaps, the absence of information on mortgages made by noninstitutional lenders which, according to the statistical data now being used, account for about one-fifth of all nonfarm mortgages outstanding and one-seventh of mortgages on one- to four-family homes. Moreover, this approach would give no information on changes of ownership of properties not involving refinancing by institutions.

There is another approach, recently proposed within the research staff of the Federal Reserve Board, which would cover these gaps while providing most of the information that could be obtained from

⁴⁰ In this case a serious problem is posed by the necessity of tracing the holders represented by nominees, who on the average account for about one-fourth of all shareholdings. Such attempts were made, apparently with reasonable success, in the surveys of stock ownership made almost twenty years ago by the T.N.E.C., (*Monograph No. 29*, pp. 170-172), and more recently and extensively by the Brookings Institution (L. H. Kimmel, *Share Ownership in the United States*, 1952, pp. 47-62.)

lending institutions and which appears to the Committee to merit serious attention.

The essence of this approach is the development of a nationwide random sample of nonfarm residential and commercial structures, kept up-to-date with regard to new structures, and the derivation of statistics, both of a benchmark and current character, on the characteristics of each property included in the sample on the basis of the land records kept in the offices of recorders of deeds or similar local government organizations. Among the recorded characteristics relevant to the measurement of saving would be: type and age of structure; type of owner; original cost; assessed valuation; mortgages on property, distinguishing rank and type of mortgagee; later changes in ownership; sale price; and changes in the amount of the mortgage and in mortgagees. Since the sample can be relatively small, it should be possible to supplement the information obtained from land records by mail inquiries (and where these are unsuccessful possibly by interviews) from owners and mortgagees. If required, and if funds permit, the estimated value of the property and improvements during a given period could also be ascertained by independent appraisers to strengthen the estimates. It will depend on the size of the sample, and hence on the funds available, whether the figures could be used to derive estimates for the entire country only on an annual basis, or also for quarterly statistics.

3. Flow-of-funds statistics. Although the flow-of-funds statistics do not yield specific estimates of saving, they contain, as has been indicated in Section III-1, virtually all the data necessary for the derivation of such estimates, and contain some of them in a form that seems most adequate for several types of statistical analysis of saving. It is therefore pertinent to suggest a few changes in the present coverage and arrangement of the statistics. These suggestions may be very brief since, in general, the recommendations made for statistics of personal saving from the balance sheet apply here too.

For the short-term analysis of saving probably the most important recommendation is the supplementation of the present annual statistics with comparable data on a semiannual or preferably quarterly basis.

Even before such supplementation the value of the flow-of-funds statistics for capital market and structural analysis would be con-

siderably enhanced by, first, increasing the number of different types of assets and liabilities for which flows are separately shown. Among the most important additions are the breakdown of corporate securities into bonds, preferred and common stock; the segregation of mortgage loans into farm mortgages, mortgages on one- to four-family dwellings, other residential mortgages, and nonresidential nonfarm mortgages. Secondly, certain flows now omitted should be included to complete the picture, e.g., loans among individuals. Thirdly, as far as possible flows in different directions should be shown separately rather than only as net flows, e.g., in the case of mortgage loans and of transactions in securities. Fourthly, the figures should more and more be derived from true flow data rather than from changes in holdings, thus reducing the necessity of making the always precarious adjustments for valuation changes in the available data on holdings. Finally, the tie-in between the flow-of-funds statistics and the statistics of saving from the balance sheet should become much closer in order to avoid substantial differences between the estimates of the same flows in the two sets of statistics, a difference which now is pronounced, for instance, in the case of intangible assets and liabilities of unincorporated business enterprises.

4. Cross-section data. The Committee has found it more difficult to formulate its recommendations in this field than for any other aspect of saving statistics.

On the one hand, cross-section data derived by personal interview from a small sample of households hold out the promise of providing information on a number of subjects which are of the greatest importance for the analysis and understanding of individuals' saving, information that could not be obtained at all or as well from aggregate time series. Among these subjects are the structure of saving, i.e., the interrelations and changes in them over time among the different forms of saving and dissaving of households that differ with respect to important economic characteristics; the interrelations between saving, in the aggregate or by components, and factors such as income, wealth, age and occupation of head, and location; and the connections between saving and savers' attitudes and expectations. While these achievements are as yet largely in the nature of promises, substantial progress has been made in some

directions in the decade during which cross-section data have been regularly collected.

On the other hand, the Committee cannot ignore the fact that the sample data on saving and asset holdings, when appropriately blown up, yield estimates relating to all households in the United States which differ greatly from the figures shown for the same items by over-all statistics of the type used in the Securities and Exchange Commission's estimates of saving. This is a serious matter even though the derivation of such aggregate figures is not regarded as one of the chief objectives of these surveys. Not only have the differences in total consumer saving, when adjusted to a comparable basis, been substantial, but the discrepancy between the two sets of figures has been still more pronounced for financial and tangible assets taken separately and for a number of components of saving—such as time deposits, U. S. savings bonds, savings and loan association shares, and consumer debt—for which the margin of error in the over-all estimates is not likely to be very large. While the estimates of saving through financial assets and liabilities derived from a blowup of survey data have almost always been below those derived from over-all statistics,⁴¹ the difference has been far from constant and rather erratic in its annual changes. It is, therefore, not difficult to understand that, when these differences continued from year to year, some experts have become increasingly skeptical of the value of survey data as a means of deriving or supplementing statistics of aggregate personal saving.⁴²

A decision would have been easier if experts were agreed about the reliability of the relations among different components of saving and between saving and other variables as distinguished from the accuracy of absolute figures. Some experts contend that the failure

⁴¹ When the distribution of the basic data sampled is as skewed as it is in the case of saving and its components, mathematical considerations lead one to expect most of the time an understatement in aggregates derived by blowup even if no other downward bias is present. Under such conditions it is not possible to estimate the sampling error without detailed knowledge about the upper part of the distribution of saving and assets, which cannot be obtained from surveys. It is, however, almost certain that the sampling errors are so large that one cannot be sure that the observed discrepancies exceed them.

⁴² These doubts do not refer to the competence or ingenuity of the statisticians who have conducted these surveys. On the contrary the Committee, as well as others who have studied these operations in greater detail, have come to the conclusion that very good use has been made of the potentialities of the method within the limitation of available resources which, while substantial in absolute amount, are rather scarce compared to the task.

of blown-up totals from survey data to agree with aggregates derived from presumably more reliable over-all statistics is no argument against the reliability of relationships. Others are inclined to suspect that since there are such large and continuous differences between blown-up survey and aggregate data, and since there are systematic relationships between forms of saving and other economic characteristics of respondents, the relations derived from survey data, and not only the blown-up aggregates, are likely also to be affected. The Committee has not been presented with evidence that would enable it to decide this question in its own mind one way or the other.

Notwithstanding disagreement among experts on details, three main conclusions are probably shared by all those who have worked closely with survey data.

The first conclusion is that the surveys in their present form cannot provide satisfactory information on saving and financial position of consumers in the high income and wealth groups; of people with complex financial affairs; of farmers; and of the owners of unincorporated business enterprises. Thus the present surveys as a means of measuring and analyzing saving are essentially limited to ordinary consumer households, i.e., households of low- and medium-income consisting entirely or predominantly of wages and salaries. This group, of course, contains the majority of the 50-odd million spending units in the United States—possibly as much as nine-tenths of them. Households of this type, however, account only for a fraction of total household saving—possibly for as little as one-fourth. For some forms of saving they are responsible for only a small fraction, e.g., for saving through common stock, corporate bonds, and demand deposits, although they account for a substantial fraction, or even the majority, of saving in some other forms such as pension funds, life insurance, time deposits, homes, and consumer durables.

Secondly, since the importance of continuous data at equal intervals is limited for cross-section data—while it is essential for aggregative time series—it is not necessary to conduct such surveys, insofar as saving data are involved, every year, or for annual periods. Fewer but more detailed and thorough surveys are probably preferable.

Thirdly, survey data on saving are of only little use in capital mar-

ket analysis and, since they are presently on an annual basis, are not of much help in the short-term analysis of business cycles. Survey data, on the other hand, will undoubtedly be of considerable value in the analysis of structural changes in saving once they are available over a substantially longer period, and provided they prove sufficiently accurate in reflecting relationships among forms of saving. The main value of survey data on saving, however, clearly lies in two other fields, and it is always emphasized by proponents of this approach that these are the fields for which survey data should be used primarily. The first is the uncovering and explanation of the saving habits of different strata in the population; the second, the establishment of quantitative relationships of stable character, and therefore of predictive value, between saving, in total or by forms, and some other economic variables (such as income, assets, and other observable characteristics of households), certain attitudes of consumers, or broad factors that affect the entire economy like changes in the price level.

In this difficult situation the Committee has reached the following conclusions which refer primarily to cross-section surveys as now conducted and which, of course, deal only with the information on saving, assets, and liabilities in the surveys. The Committee wants to emphasize that confident recommendations in this field would require not only much more intensive review of the available material, published and unpublished, than the Committee has been able to make, but also additional investigations specifically designed to test whether it is possible to overcome certain limitations of the survey method which now appear to mar the results from the point of view of an analysis of aggregate saving.

The Committee definitely feels that the benefit of doubt should be given the surveys, until it becomes evident beyond serious dispute that they cannot satisfactorily perform the task of providing reliable quantitative data on saving habits and on the relation between saving and other factors in different strata of the population. The promises of the surveys in these directions, even though they are as yet far from realized, are too great to justify abandoning the attempt at this point.

However, the Committee also feels that a continuation of the surveys essentially along the lines followed in the past is difficult

to justify in terms of the contribution to the whole field of saving statistics insofar as information on saving, assets, and liabilities is involved. The surveys here need substantial improvement. The Committee, therefore, recommends that serious consideration be given to an extensive program of methodological experimentation, specifically designed towards testing and improving the reliability of the saving data that can be produced by the survey method. Such a program should be initiated, even if this means suspension of the regular surveys in the saving field for a year or two, because these experiments seem to be more important for the development of over-all statistics of saving from cross-section data than the material on assets and liabilities that is now being provided by the surveys. Once the results of these experiments are known it will be possible and appropriate to decide on a long-range program in this field.

The experiments include the following possibilities, most of which were suggested by experts who have worked closely with survey data, and some of which have already been explored on a limited scale by the Survey Research Center and the Bureau of Labor Statistics. The items listed under (a) to (e) refer to the Survey of Consumer Finances in approximately the form it is now being conducted, whereas the suggestions listed under (f) to (j) deal with possible supplementary surveys.

(a) Improvements in the design of the sample of households included in the survey, primarily directed towards improving blown-up aggregates derived from the samples. This includes, for instance, still higher over-sampling of households in upper income areas; means of including spending units that moved or dissolved during the reporting period; and alternative sources from which to draw samples of upper income households.

(b) Improvements in interview techniques. In view of the methods of operation of the survey and the rather satisfactory nature of its sampling procedures, this is probably the crucial point. Included here are reinterviews; development of additional internal checks in the household schedule which guides interviewers; search for methods to induce respondents to consult their records instead of relying on their memory; and more intensive training of inter-

viewers who now generally seem to be rather inexperienced in accounting and financial matters.

(c) Reduction of the time period covered by the interview, primarily to reduce memory errors that appear to be responsible for a good deal of the shortcomings of the data now being collected.

(d) Concentration of the entire interview on saving asking only such supplementary questions as are essential for information on other factors that have been shown or may be assumed to be connected with saving. This may be one of the most important experiments to make, since it will increase substantially the time available for questions about saving, assets and liabilities, and may clear up many of the ambiguities now found in the household schedules.

(e) Development of outside checks against the accuracy of replies. This would require asking respondents for the name of the institution with which they keep their deposits, or with which they have insurance, or in which they own stock, and would, of course, presuppose cooperation of these institutions.

(f) A special intensive survey for households in the upper income groups. Such a survey would probably have to use a different basis for drawing the sample; a different type of interviewer, i.e., people financially more sophisticated and socially closer to the respondents; and would have to cover aspects of the financial situation of respondents which are essential for the understanding of the saving habits of upper income households, although they may not matter for the bulk of households and may therefore be disregarded in nationwide surveys. Among these subjects are the splitting up of family income among family members; gifts—outright and in trust; realized and unrealized capital gains; stock options; pension plans; and pro rata share in undistributed earnings of corporations, particularly closely held corporations, in which respondents have a substantial investment. Without coverage of these items a study of the saving of upper income groups has very little meaning and may create more confusion than enlightenment.

(g) A special survey for people in the lowest income groups, directed primarily towards elucidating the ways in which they manage to cover the difference between their income and their expendi-

tures. This will involve more intensive probing into borrowings and contributions from family members, friends and neighbors, and other nonstandardized forms of debt, and may well call for special selection and training of interviewers who can establish rapport with this type of consumers.

(h) Specialized surveys limited to one, or a few, types of saving. Such surveys may be the only way of obtaining adequate information on some rather complex types of saving, such as saving through life insurance contracts, where individual policies have to be investigated to obtain meaningful results; ownership of stock of closely held corporations; participation in unincorporated business enterprises; and operation of multi-family and commercial real estate.

(i) Use of identical households for a number of consecutive years—obviously a very long range project, the outcome of which ought not to delay decisions on other improvements in the surveys.

(j) Substitution of records kept by respondents under guidance of survey staff for interviews as source of sample data. An experiment along this line—which is basically different from the Survey Center's approach and as yet untried in the financial field—is now under consideration.

5. Corporate saving:

a. *Objectives.* The importance of estimates of corporate saving for a satisfactory set of saving statistics is obvious from the fact that in the last five years, according to the calculations of the Department of Commerce, corporate saving has averaged almost \$10 billion compared to personal saving (excluding consumer durables) of not quite \$18 billion. Considerable progress has been made in developing estimates of aggregate saving of all corporations, calculated as the difference between net income and cash dividend payments. The economist and the business analyst, however, are not primarily interested in a figure for aggregate corporate saving which is comparable in character and derivation to personal saving calculated as the undivided residual between disposable personal income and personal expenditures. They are rather interested, insofar as additional information is concerned, first, in the forms of corporate saving, i.e., in an estimate of corporate saving from the balance sheet paralleling the Securities and Exchange Commission's

estimates of personal saving; and, secondly, in the distribution of aggregate corporate saving among industries and among corporations of different size.

The demand for figures of corporate saving for individual industries or for corporations of different size is answered, and in great detail, by *Statistics of Income* provided only one figure for aggregate saving is wanted and the questioner is able to wait for two years. The second, and probably more important, demand for a breakdown of corporate saving by form can be satisfied by the recently developed sources-and-uses-of-funds statement. Such a statement shows among uses of funds the increase in different types of assets held as well as decreases in various types of liabilities; while decreases in individual assets and increases in various forms of liabilities (including equity securities) are shown among sources of funds. Since these changes abstract from valuation changes they can immediately be rearranged into a statement of net corporate saving by forms of saving. The statement also indicates the way in which the increase in assets was financed—from external or internal sources; by borrowing or by the issuance of equity securities; by long-term or by short-term debt—and shows the forms in which any surplus of funds was made available to the capital market.

A combined sources-and-uses-of-funds statement for all nonfinancial corporations, in rather summary form, is being prepared annually by the Department of Commerce and published in the *Survey of Current Business* about seven months after the end of the year. What is needed for a more thorough analysis of corporate saving is, apart from the distinction of a larger number of types of assets and liabilities:

(i) Breakup of the aggregate statement into similar separate statements for a few—say 5 to 10—major industry groups, and for a few size groups of corporations (in the beginning the three groups—large, medium-sized, and small corporations—might suffice);

(ii) Putting the aggregate statement on a semiannual or quarterly basis.

Neither of these two basic steps can be taken with the data now available. They would require the collection of additional statistics which present very substantial technical problems, that can only

be hinted at below, and apparently would call for substantial additional expenditures.

b. *Methods of implementation.* There seem to be primarily three approaches by which the required additional data could be obtained:

(i) Acceleration of tabulation of corporate income tax returns by the Internal Revenue Service. It is difficult to see how in this way figures could be obtained earlier than twelve months after the end of the year, even if the tabulations were restricted to corporations with a fiscal year ending at any date during the calendar year and if they were based for medium-sized and small corporations on a rather small sample. We understand that the Internal Revenue Service is now working on speeding up the tabulations, and has already reduced the lag between the end of the fiscal year and the appearance of the preliminary version of *Statistics of Income* to about twenty months. The lag could be reduced a few more months if each report included corporations with fiscal year ending at any date within the calendar year instead of the present practice of covering corporations with fiscal year ending between July 1 and June 30 of the following year. It is doubtful whether additional efforts at acceleration are worth while from the point of view of statistics of saving.

(ii) Extension of the *Quarterly Financial Reports* of the FTC-SEC—though possibly in somewhat simplified form—which are now limited to manufacturing corporations, to all other nonfinancial corporations, particularly trade, service, construction, mining, and public utilities. Similar reports for most types of financial corporations, and possibly some public utilities, could probably be obtained more easily through supervisory agencies. This extension of the present reporting system would be quite expensive—though, of course, it would serve many needs beyond those of the statistics of saving—and in some fields where small corporations predominate would present difficult sampling problems. Nevertheless, this is in the long run probably the most promising approach if relatively reliable estimates are wanted rapidly—the reports now becoming available three to four months after the end of the quarter. A particular advantage of this approach is that addition of a few

items to those now included in the report (particularly on holdings of tax-exempt securities and stocks and bonds of nonaffiliated corporations, and on issue and retirement of own securities) would permit considerable improvements in the estimates of personal saving.⁴⁸

(iii) Extension of the Federal Reserve Board's statistics of corporate income accounts and balance sheets, which are now limited to 298 large corporations in industry, trade, and public utilities, to cover large corporations in other nonfinancial sectors and to include a sample of medium-sized corporations. The possibilities of this extension, however, are limited since the compilation is based exclusively on published reports. So far the figures have been compiled only annually, and it is doubtful that sufficient coverage to justify blowing up to corporate aggregates, could be secured, and sufficiently detailed figures obtained if a similar attempt were to be made on the basis of published quarterly reports.

In this situation the Committee is inclined to recommend that the attempts at improving the statistics of corporate saving, particularly for business cycle and capital market analysis, should be centered on extending and strengthening the FTC-SEC quarterly reports. Detailed structural analysis will have to rely, as before, primarily on *Statistics of Income*. The analytical value of *Statistics of Income* would be substantially improved if it were possible to add a few items to the corporate tax schedule, particularly information on issue and retirement of own securities, which would permit recasting the data into the form of a sources-and-uses-of-funds statement.

There are, in addition, two improvements in the statistics of corporate saving which, the Committee feels, should be made before long since they will substantially improve the analytical value of the figures, and can be made with the basic data now available and without substantial additional expenditures. They are the recalculation of corporate depreciation allowances on a replacement cost basis, and of depletion allowances on the basis of actual development cost. Both series would be presented as alternatives to the present estimates

⁴⁸ As a temporary substitute for this extension of the FTC-SEC quarterly reports, consideration might be given to advance tabulation of a sample of tax returns from these industries that might become available with a lag of about a year, and that, of course, could provide only annual data.

made by the Department of Commerce which are based on corporate tax returns.

The need for estimates of capital consumption allowances at replacement cost has been reinforced by the rapid increase in their volume which now amounts to more than \$10 billion a year for corporations alone, so that differences in the method of calculation may easily affect corporate and even national saving to a significant extent; and still more by the violent changes over the last decade in capital consumption allowances permitted under the Internal Revenue laws, which are more and more separating the allowances entered in corporate tax returns from those that represent economically meaningful figures comparable over time. What is required is the calculation of depreciation allowances, on the basis of both original and replacement cost, that are in principle independent of those shown in tax returns, but are instead based on capital expenditures—including some expenditures now charged to current account—and on rates of depreciation applied uniformly to all expenditures of the same type. What these rates should be and whether they should be straight or curvilinear in form (such as decreasing balance, sum-of-digits or other methods imply) are matters that can be settled only after substantial research into depreciation practices and actual length of life and loss of value of different types of structures and equipment. Research is also required for deriving the series of capital expenditures to which the rates are to be applied. The great advantage of this approach is that it will yield estimates of depreciation allowances that are based on consistent assumptions which are maintained unchanged, and that they can be adapted to different economic or accounting concepts of depreciation. Their drawback is that they can be derived only for all corporations together, or at best for very broad groups of them, since the data on capital expenditures are not detailed enough to permit a fine industrial breakdown.

In the case of depletion allowances, the new series is intended to permit taking account of them in the estimation of corporate and national saving without having to use the allowances in tax returns which have no economic meaning.

While this recalculation of capital consumption allowances would involve a departure from the present general policy of the Depart-

ment of Commerce of basing statistics on reports as they are submitted by business enterprises to stockholders or tax authorities, the Committee is of the opinion that in this case modification is necessary to make the figures meaningful for economic analysis, and feels that the deviation does not go beyond what is already being done on other points by the Department of Commerce, e.g., the elimination from national income and saving of inventory profits and capital gains, the addition to reported corporate profits of profits disclosed by tax audits, and the omission of depletion allowances from expenditures.

6. **Government saving.** The Committee feels that in view of the importance of the figures for developing estimates of aggregate national saving and of the intrinsic interest which the figures have, arrangements should be made at an early date for the regular preparation of estimates of saving—and also of sources-and-uses-of-funds statements—of Federal, State, and local governments, at annual intervals, and in the case of the Federal Government also on a quarterly basis.⁴⁴ Examination of the problems involved, review of previous attempts, and discussion with experts in this field indicate to the Committee that such estimates can be developed without unreasonable difficulty or effort.⁴⁵ There are, however, a few conceptual and practical problems which deserve brief discussion.

Possibly the most contentious of these problems, and probably the one that has held up the estimates until now, is the definition of government saving. Without going into all the arguments, the Committee would like to suggest that the definition of saving as the net change of assets (or its alternative, the difference between current income and current expenditures) that is used to calculate individual and corporate saving, may also be applied to government, at least as a starting point. This implies, of course, that items like roads, dams, schools, and court houses, be regarded as assets of the government and as parts of national wealth in the same way as privately owned

⁴⁴ Calculated by the same methods as private saving, the saving of State and local governments has been estimated to have averaged for the four years 1946 to 1949 about \$1½ billion per year, and that of the Federal Government approximately \$2 billion per year (*A Study of Saving in the United States*, Vol. I, Table T-1). This compares with average personal saving of \$8.5 billion and with corporate saving of \$10 billion, according to the estimates of the Department of Commerce.

⁴⁵ J. E. Reeve et al., "Government Component in the National Wealth," *Studies in Income and Wealth*, Vol. 12, *A Study of Saving in the United States*, Vol. I, pp. 972ff., and Vol. II, Chaps. 17 and 18.

structures and equipment, which often are indistinguishable in their physical characteristics from those owned by the government. This treatment is subject to serious doubts only in the case of military assets. It is therefore advisable in the case of the Federal Government to derive two estimates of saving, one including and the other excluding military assets. The use of this definition of saving no more implies the judgment that only expenditures on durable tangible or on financial assets contribute to economic growth and productivity than does the parallel treatment in the private sphere.

Practical problems specific to government saving do not arise for saving through financial assets, except in the case of claims resulting from taxes. The question here is, first, whether taxes should be treated on an accrual basis, as business accounting requires and as corresponds to their treatment in corporate saving statistics, or on a cash basis, i.e., whether taxes accruing during a year (or quarter) on that period's income should be treated as receivables of the government, or whether all tax payments should be regarded as current transactions. The second question concerns the treatment of tax arrears which under business accounting would be regarded as government receivables. In the interest of simplicity, and because of the unavailability of reliable figures about noncorporate tax accruals until several years after tax payment, it may be advisable to start by treating all tax receipts of the government as current items and thus to eliminate them from the calculation of saving. Determination of government expenditures on tangible assets poses no problem. As in the case of privately owned tangible assets, they are entered in the calculation of gross saving at their actual original cost.

Doubts about the feasibility of estimates of government saving have generally centered on capital consumption allowances. However, here too a treatment is possible that is entirely in line with that commonly applied to privately owned tangible assets. Estimates of length of life can be made for most types of government property that will not be substantially worse and will be more uniform than those implied in the depreciation allowances of corporations and other business enterprises now used in statistics of saving. Military assets are possibly an exception to this statement, and this is another reason for providing an alternative estimate of government saving which excludes them. Since capital consumption allowances

on private property are still commonly calculated on a straight line basis, there can hardly be an objection to using the same simple method for government property. However, as in the private sphere, these should be supplemented by estimates on a replacement cost basis.

a. *Federal Government.* The calculation of saving of the Federal Government presents many technical problems, often created by peculiarities of the Treasury's bookkeeping methods, that need not be discussed here. In principle, information is available, or could rather easily be supplied by the Bureau of Accounts, on all items necessary for the calculation of saving of the Federal Government, both from the balance sheet and from the income account. This could be done on a current annual, quarterly, or if desired even a monthly basis, although these estimates could probably be made only by an organization thoroughly familiar and in close touch with the intricacies of Federal accounting. The figures would probably be much more informative if saving were separately estimated for general government activities; government corporations of the business type, mostly operating in the financial sphere; and the Atomic Energy Commission. If such estimates are provided, appropriate allowance would, of course, have to be made for inter-governmental transactions.

The main problem of a general nature again will be depreciation allowances. If approximate figures are regarded as satisfactory, and they should suffice since we are interested in the movements rather than in the exact level of Federal saving, estimates of depreciation allowances certainly could be developed for nonmilitary assets. These should comprise the establishments of the Atomic Energy Commission, but their inclusion should not cause any difficulty since the Commission possesses a fairly detailed system of business-type accounting.

The estimation of saving through military assets presents on all counts much more difficult problems. There is considerable doubt, first, exactly what items should be regarded as durable and, hence, as capitalizable under business accounting practice. There is much uncertainty about useful length of life, particularly because of the unusual importance of unforeseeable obsolescence. There are some doubts, finally, whether all expenditure figures are available publicly. In view of these conceptual and practical difficulties, it

might be well to limit estimates of saving of the Federal Government initially to nonmilitary assets.

b. *State and local governments.* Fortunately, considerable progress has been made in recent years in the collection and tabulation by the Bureau of the Census of statistics on income, expenditures, financial assets and liabilities of State and local governments, and in particular in securing separate figures for capital expenditures. As a result, estimates of saving can now be prepared by both the balance sheet and the income account approach separately for State and for local governments (and if desired for several groups of local governments such as large cities) once estimates of depreciation allowances are at hand. While their derivation is a laborious process, sufficient data on capital expenditures made in the past are available to develop approximations of reasonable accuracy.

All statistics to be used in developing estimates of saving of State and local governments are collected only on an annual basis, and become available nine to twelve months after the fiscal year ends. This delay is not too serious for structure analysis. Derivation of quarterly estimates would require an entirely new set of statistics, a step which is not regarded as justified by the importance of short-term fluctuations in the saving of State and local governments for the analysis of the current business situation or the capital market.

Serious consideration should, however, be given to developing a reporting system, probably limited to the larger States, a few dozen of the largest cities, and a sample of other local governments, that would provide information on a quarterly, and possibly even on a monthly basis, of a few selected items which are of particular importance for short-term analysis. These items, some of which will be of use in the monthly indicators of personal saving, should include:

(i) New issues of State and local government securities, debt retirement (including acquisitions by sinking funds), and amount of gross and net debt outstanding;

(ii) Total assets of State and local pension and trust funds, preferably broken down to show separately the most important assets such as U. S. Government securities, tax-exempt securities, corporate bonds, and cash;

(iii) Liquid assets held outside of pension and trust funds;

(iv) Capital expenditures.

APPENDIX A

LETTER TO RAYMOND W. GOLDSMITH

Office of the Chairman
November 22, 1954

Mr. Raymond W. Goldsmith
R. W. Goldsmith Associates, Inc.
1129 Vermont Avenue
Washington, D. C.

Dear Mr. Goldsmith:

I am most pleased to learn of your willingness to serve as a consultant to the Board in the capacity of chairman of a small committee of distinguished economists and statisticians to undertake a study and appraisal of existing statistics in the field of savings.

The study your committee is undertaking is one of several being made by the Board, in cooperation with other Federal agencies and private organizations, in response to a request addressed to the Board by the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report of the 83rd Congress, 2nd Session. The Subcommittee's request is stated as follows in the Progress Report of August 5, 1954:

"The subcommittee is requesting the Federal Reserve to explore, in cooperation with executive agencies, the adequacy of present statistics in three basic areas: (1) inventories, (2) savings, and (3) consumer and business expectations. This request includes a thorough review of, and basic research into, concepts, existing data, sources and procedure for improving these statistics."

The language of the request indicates a desire on the part of the Subcommittee for a comprehensive review and appraisal of the present status of our knowledge in the field of savings and for a set of broad, but also as specific as possible, recommendations for improvements in existing concepts, methods, and statistics, and for the development of new concepts and statistical data if these are deemed necessary. This clearly calls for consideration of the purposes for which savings data are now being or could be used. The committee, however, is not being asked to make any recommendations as to which

governmental agencies, or private organizations, should be responsible for providing data in the savings field. The target date for completion of committee reports is June 30, 1955.

Saving occupies a highly strategic position in the functioning of the economy generally and particularly so with respect to developments in money and credit markets, cyclical fluctuations in business activity, and long-run growth in capital, productivity, and living standards. Construction of adequate, pertinent, and prompt measures of savings has been a major task of economists and statisticians for many years and a number of concepts and measures are now available.

Your committee has an unusual opportunity to further progress in this area by providing at this time a broad, objective, and expert examination of the field taking into account the place of savings in our financial structure, the analytic uses being made of savings data, and the present and prospective needs for such information by those concerned with determination of governmental policy, by private business and financial analysts, and by students of the economy in general.

The focus of interest of the study is in the improvement of statistics relating to all phases of saving in our economy. This would include the amounts and forms of savings of various groups—consumers, noncorporate businesses, corporate businesses, and (mainly to fill out the picture) government. The distribution of savings by income classes and other significant groups, as well as the other bodies of savings data, is appropriate for evaluation by your committee. Presumably, some part of the committee's time will need to be devoted to problems of collection and processing of data, including appraisal of sampling procedures as these relate both to present series and to possible new series.

Mr. Ralph A. Young, Director of the Division of Research and Statistics, will serve as the Board's liaison with the committees and he will be in touch with you from time to time as the work of your committee progresses. Mr. Young and members of the research staff are prepared to provide your committee whatever assistance they can and the cooperation of other agencies is assured.

I wish to express to you and your colleagues on the Savings Committee my great appreciation for your willingness to undertake this important task.

Very truly yours,

(Signed) WM. McC. MARTIN, JR.

APPENDIX B

EXPERTS ON SAVING STATISTICS CONSULTED BY
THE COMMITTEE ON SAVINGS STATISTICS

Government

Mrs. Dorothy Brady	Bureau of Labor Statistics
Mr. Kenneth Burrows	Housing and Home Finance Agency
Miss Helen Demond	Internal Revenue Service
Mr. F. C. Dirks	International Monetary Fund
Mr. Robert Drury	Governments Division, Bureau of the Census
Mr. E. J. Engquist	Internal Revenue Service
Miss Lenore Epstein	Social Security Administration
Mr. George Garvy	Federal Reserve Bank of New York
Mr. George Jaszi	National Income Division, Office of Business Economics, Department of Commerce
Mr. Homer Jones	Consumer Credit and Finances Section, Division of Research and Statistics, Board of Governors of the Federal Reserve System
Mr. Mortimer Kaplan	Federal Housing Administration
Mr. James Knowles	Joint Committee on the Economic Report
Mr. Nathan Koffsky	Agricultural Marketing Service
Mr. Stanley Lebergott	Office of Statistical Standards, Bureau of the Budget
Mr. John Lehman	Joint Committee on the Economic Report
Mr. David Lusher	Council of Economic Advisers
Mr. Vito Natrella	Securities and Exchange Commission
Mr. Duane Saunders	Debt Division, Department of the Treasury
Mr. Stanley Sigel	Division of Research and Statistics, Board of Governors of the Federal Reserve System
Mr. Norman Wall	Agricultural Finance Section, Agricultural Re- search Service, Department of Agriculture
Mr. Ramsay Wood	Division of Research and Statistics, Board of Governors of the Federal Reserve System
Mr. Ralph Young	Division of Research and Statistics, Board of Governors of the Federal Reserve System

University

Dr. Gerhard Colm	National Planning Association
Prof. Robert Ferber	University of Illinois
Prof. Milton Friedman	University of Chicago
Prof. Irwin Friend	University of Pennsylvania
Prof. Paul McCracken	University of Michigan
Prof. James Morgan	University of Michigan
Prof. Lawrence Seltzer	Wayne University
Prof. James Tobin	Yale University

Business and other

Mr. William Berridge	Metropolitan Life Insurance Co.
Mr. Robert Bethke	Discount Corporation of New York
Mr. Jonathan Brown	New York Stock Exchange
Mr. Morris Cohen	National Industrial Conference Board
Mr. Frank Fernbach	Congress of Industrial Organizations
Mr. W. Braddock Hickman	New York Life Insurance Co.
Mr. Sidney Homer	Scudder, Stevens & Clark
Mr. Joseph Hubbard	Union Service Corporation
Mrs. Judith Mackey	Life Insurance Association of America
Mr. Charles Moeller	Metropolitan Life Insurance Co.
Mr. Roger Murray	Bankers Trust Co.
Mr. Leroy Piser	Aubrey G. Lanston & Co.
Mr. Robert Rennie	Farm Bureau Insurance Co.
Mr. Frederick Simmons	Guaranty Trust Co.
Mr. Girard Spencer	Salomon Bros. & Hutzler
Mr. Beryl Sprinkel	Harris Trust and Savings Bank
Prof. W. H. Steiner	National Association of Mutual Savings Banks
Dean Arthur Weimer	Savings and Loan League
Mr. J. Brooke Willis	Chase National Bank
Mr. John Wills	The Northern Trust Co.
Mr. Eugene Zorn	American Bankers Association

APPENDIX C

QUESTIONNAIRE SUBMITTED TO USERS OF SAVING STATISTICS BY COMMITTEE ON SAVINGS STATISTICS

-
-
1. Do you regularly use the following statistics of saving:

	Yes	No
a. SEC statistics of liquid saving?	_____	_____
b. Department of Commerce quarterly estimates of personal saving?	_____	_____
c. Department of Commerce annual estimates of sources and uses of gross saving?	_____	_____
d. SEC annual reconciliation to Commerce personal saving (Table 6 of <i>National Income Supplement to Survey of Current Business</i>)?	_____	_____
e. Data on assets and liabilities in Survey of Consumer Finances?	_____	_____
f. Others (describe)? _____		

 2. In working with saving statistics are you primarily interested in:
 - a. Cross-section data, as provided by the Survey of Consumer Finances and similar surveys? _____
 - b. Aggregate data, as provided by the SEC and Department of Commerce? _____
 - c. Equally in both? _____

 3. Is the use of saving statistics in your analysis of the current and prospective economic and monetary (incl. capital markets) situation:
 - a. Incidental? _____
 - b. Important? _____
 - c. Crucial? _____

 4. From your point of view would it be of little value (x), helpful (xx), important (xxx) if the statistics of saving included as separately shown items:
 - a. Saving of State and local governments? _____
 - b. Saving of Federal Government? _____

(Both calculated in accordance with the same concepts that are now used in the calculation of corporate saving.)

- c. Saving through pension and retirement funds? _____
- d. Saving through personal trust funds? _____
- e. Saving of farmers? _____
- f. Saving of unincorporated business enterprises? _____
- g. Saving of professionals (doctors, lawyers, accountants)? _____
- h. Saving of nonprofit institutions (e.g. educational and religious institutions, hospitals, foundations)? _____
5. From your point of view would it be of little value (x), helpful (xx), important (xxx) if statistics of personal saving presented the following items:
- a. Saving in the form of consumer durables (at present excluded from personal saving)? _____
- b. Contractual saving? _____
- c. A breakdown of saving through corporate securities into saving through bonds, preferred stock and common stock? (At present no breakdown is available from SEC statistics.) _____
6. In the statistics of personal saving do you regard it as of little value (), helpful (), important () to have changes in assets and changes in related forms of debt presented separately (e.g. net purchases of securities separate from changes in loans on securities) rather than netting borrowing against assets (as is now done for a number of assets)?
7. Similarly, do you regard it as of little value (), helpful (), important () to have gross flows (rather than net changes only) for items like deposits in commercial and savings banks, saving and loan association shares, U. S. savings bonds, investment company shares, home mortgages, and consumer debt?
8. a. Do you regard it as of little value (), helpful (), important () that estimates of capital consumption allowances in saving statistics be available on the basis of replacement cost (present figures are essentially original cost)?
- b. If you consider replacement cost estimates of value, would you like them to be substituted for the present estimates which are essentially original cost estimates? Yes _____ No _____

9. If there is a choice in the release of quarterly saving statistics between an early release (say within six weeks) of rough preliminary figures, and a later release (within three to four months) of more reliable figures, which do you prefer:
- a. Early release? _____
- b. Later release? _____
10. Do the revisions in the original quarterly estimates of personal saving, which are now customary, reduce the value of the figures from your point of view—slightly (), substantially (), decisively ()?
11. a. Would availability of quarterly reconciliations of Department of Commerce and SEC estimates of personal saving be of little (), some (), great () assistance in your work?
- b. Would you prefer such a reconciliation on the basis of seasonally unadjusted () or seasonally adjusted figures ()?
12. The suggestion has been made to collect on a monthly basis and to publish within four weeks after the close of the month, a set of indicator series in the field of personal saving (e.g. changes in individuals' deposits in commercial and savings banks and savings and loan associations; U. S. savings bonds; investment company shares; life insurance assets; expenditures on new homes and consumer durables; home mortgage and consumer debt). Would such monthly figures (which, of course, do not add up to total personal saving) be of little (), some (), great () assistance in your work?
13. Do you feel that efforts to develop estimates of saving on a regional basis are premature (), worth a try (), of considerable and immediate interest ()?
14. Do you regard sources-and-uses of funds statements by sectors, particularly individual household and unincorporated business (similar to that now being prepared for corporations) as of little value (), helpful (), important ()?
15. Indicate (by number) which of the improvements listed in the preceding items you regard as most urgent.

APPENDIX D

WHAT THE USERS OF SAVING STATISTICS WANT

In formulating its recommendations the Committee paid careful attention to the suggestions made by the producers and users of saving statistics with which the Committee conferred, and to these users' ranking of the importance of the various proposals. To obtain a quantitative impression of what users want, participants at the meetings held by the Committee, as well as experts unable to attend, were asked to fill out a short questionnaire, copy of which will be found in Appendix C. Altogether 56 replies to this questionnaire were received, and Table 1 of this appendix shows the distribution of the answers, which may be summarized as follows:

(a) Virtually all respondents make regular use of the quarterly and annual statistics of saving now being released by the Securities and Exchange Commission and the Department of Commerce, and four out of five also utilize the annual data in the Survey of Consumer Finances.

(b) About one-half of the respondents are equally interested in aggregate and cross-section data. Most of the other half are chiefly interested in aggregate figures.

(c) Of all the suggestions for improvements in the statistics of saving, separate data for saving through pension funds and by unincorporated business enterprises were rated most often among the "most urgent" improvements. Segregation of saving through personal trust funds and of contractual saving, and the development of monthly indicators of saving also were mentioned fairly often among the "most urgent" improvements. Separate estimates for government saving, saving of farmers, professionals, and nonprofit institutions, saving through consumer durables, and segregation of saving through stocks and bonds were listed less commonly. However, even these improvements, as well as several others, were placed by the majority of respondents in the categories of "helpful" or "important" improvements in the statistics.

(d) Most respondents indicated that they were interested in figures on a grosser basis than is commonly employed in the present statistics, e.g., in the segregation of increases in assets and in the related liabilities, or in new loans made and loan repayments and securities purchased and sold, instead of net changes in loans outstanding or in securities held.

(e) There was a considerable demand for sources-and-uses-of-funds statements, along the lines now available for corporations, for the other sectors of the economy.

(f) There were some differences between respondents in business, government, and university life. However, since the last two groups were rather small (8 and 12 respondents respectively compared to 36 from business) these differences must be treated with caution.

TABLE 1
CLASSIFICATION OF REPLIES TO QUESTIONNAIRE SUBMITTED TO USERS OF SAVING STATISTICS

Question No.	All replies (56 cases)			Government (8 cases)			University (12 cases)			Business and other (36 cases)		
	Yes	No		Yes	No		Yes	No		Yes	No	
1.												
a.	51	3		7	1		11	1		33	1	
b.	51	3		8	-		11	1		32	2	
c.	48	5		7	1		10	2		31	2	
d.	42	10		6	2		9	3		27	5	
e.	43	10		5	3		11	1		27	6	
2.												
a.		5			1			3			1	
b.		22			5			3			14	
c.		29			2			6			21	
3.												
a.		6			1			2			3	
b.		32			6			7			19	
c.		18			1			3			14	
4.												
	Little			Little			Little			Little		
	value	Helpful	Imp't	value	Helpful	Imp't	value	Helpful	Imp't	value	Helpful	Imp't
a.	12	31	12	2	5	1	3	8	1	7	18	10
b.	12	33	9	2	6	-	1	9	1	9	18	8
c.	-	9	47	-	2	6	-	4	8	-	3	33
d.	4	16	34	1	1	4	2	5	5	1	10	25
e.	9	21	25	-	3	5	1	5	6	8	13	14
f.	4	16	36	-	2	6	1	3	8	3	11	22
g.	18	20	17	1	4	3	3	8	1	14	8	13
h.	14	22	19	1	3	4	4	6	2	9	13	13
5.												
a.	14	23	18	3	4	1	2	5	5	9	14	12
b.	1	17	38	-	3	5	-	8	4	1	6	29
c.	5	21	30	2	5	1	1	7	4	2	9	25
6.												
	4	17	33	2	2	4	1	5	5	1	10	24
7.												
	5	14	36	2	1	5	1	5	5	2	8	26
8.												
a.	15	22	17	3	3	1	2	3	6	10	16	10
b.		Yes	No		Yes	No		Yes	No		Yes	No
		8	28		1	3		1	4		6	21

9.	a.	26			5			2			19		
	b.	19			2			7			10		
10.		Slightly 31	Subst. 15	Decis. 3	Slightly 5	Subst. 2	Decis. 1	Slightly 8	Subst. 2	Decis. -	Slightly 18	Subst. 11	Decis. 2
11.	a.	Little 8	Some 24	Great 23	Little 2	Some 2	Great 3	Little 4	Some 5	Great 3	Little 2	Some 17	Great 17
	b.		Unadj. 28	Adj. 11		Unadj. 4	Adj. 2		Unadj. 3	Adj. 3		Unadj. 21	Adj. 6
12.		Little 4	Some 19	Great 32	Little 2	Some 3	Great 3	Little 2	Some 9	Great 1	Little -	Some 7	Great 28
13.		Premature 18	Worth try 28	Immed. in't 5	Premature 3	Worth try 4	Immed. in't -	Premature 4	Worth try 6	Immed. in't 1	Premature 11	Worth try 18	Immed. in't 4
14.		Little value 2	Helpful 16	Imp't 36	Little value -	Helpful 3	Imp't 5	Little value -	Helpful 4	Imp't 7	Little value 2	Helpful 9	Imp't 24
15.		Item	No.		Item	No.		Item	No.		Item	No.	
		Pension funds 4c.....	31		Pension funds 4c.....	3		Pension funds 4c.....	5		Pension funds 4c.....	23	
		Unincorp. bus. 4f.....	29		Farmers 4e.....	3		Personal trusts 4d.....	5		Unincorp. bus. 4f.....	22	
		Personal trusts 4d.....	26		Unincorp. bus. 4f.....	3		Consumer durables 5a.....	5		Personal trusts 4d.....	20	
		Indicator series 12.....	21		Contractual saving 5b.....	3		Farmers 4e.....	4		Indicator series 12.....	16	
		Contractual saving 5b.....	19		Indicator series 12.....	3		Unincorp. bus. 4f.....	4		Sources and uses 14.....	13	
		Sources and uses 14.....	18		Nonprofit institu. 4h.....	2		Cap. cons.-repl. cost 8.....	4		Contractual saving 5b.....	13	
		Farmers 4e.....	16		Sources and uses 14.....	2		Sources and uses 14.....	3		Bonds & st. sep. 5c.....	13	
		Nonprofit institu. 4h.....	15		St. & local govts. 4a.....	1		Contractual saving 5b.....	3		Nonprofit institu. 4h.....	12	
		Bonds & st. sep. 5c.....	14		Personal trusts 4d.....	1		Indicator series 12.....	2		Quarterly recon. 11.....	12	
		Quarterly recon. 11.....	14		Professionals 4g.....	1		Nonprofit institu. 4h.....	1		St. & local govts. 4a.....	10	
		Gross flows 7.....	11		Consumer durables 5a.....	1		Assets and debts sep. 6.....	1		Farmers 4e.....	9	
		St. & local govts. 4a.....	11		Assets and debts sep. 6.....	1		Gross flows 7.....	1		Gross flows 7.....	9	
		Consumer durables 5a.....	11		Gross flows 7.....	1		Bonds & st. sep. 5c.....	1		Professionals 4g.....	8	
		Professionals 4g.....	9		Early release 9a.....	1		Quarterly recon. 11.....	1		Early release 9a.....	6	
		Cap. cons.-repl. cost 8.....	8		Quarterly recon. 11.....	1					Federal Govt. 4b.....	6	
		Early release 9a.....	7								Consumer durables 5a.....	5	
		Federal Govt. 4b.....	6								Cap. cons. repl. cost 8.....	4	
		Cross-section data 2a.....	2								Cross-section data 2a.....	2	
		Assets and debts sep. 6.....	2										

APPENDIX E

STATISTICS OF SAVING¹

This appendix presents descriptions of various statistics on saving. Only series that are now being kept up to date and prepared on a current basis are covered. Descriptions are given of the following: (1) the saving series in the national income and product accounts of the Department of Commerce; (2) sources and uses of corporate funds as presented by the Department of Commerce; (3) the flow-of-funds system of national accounts of the Board of Governors of the Federal Reserve System; (4) the series on saving by individuals presented by the Security and Exchange Commission; (5) SEC estimates of components of personal saving as presented in Table 6 of the *National Income Supplement to the Survey of Current Business*; and (6) data on consumer saving and on assets and liabilities from the Survey of Consumer Finances. The order of discussion has been chosen to facilitate exposition and does not reflect importance, priority in time, or any other substantive comparison.

For each area covered, the discussion covers (a) definition and coverage; (b) methods of calculation and estimation; (c) form and frequency of presentation of the statistics; and (d) significant changes in these aspects of the series since first initiated.

Saving can be viewed either as the difference between certain receipts and certain expenditures or as the net accumulation of certain assets less the net incurrence of certain debts. Thus a basic part of the definition of each of the series described is whether it is an excess of current income over current expenditures or an aggregation of transactions in assets and liabilities. In the former case, a definition of saving must further specify whose receipts and expenditures and which receipts and expenditures; in the latter case, whose assets and liabilities, and which assets and liabilities.

The two views of saving are of course related. A full statement of *all* the economic transactions—financial and nonfinancial transactions, income and product, transfer, and existing asset transactions, etc.—in which any individual or group engages is the easiest way to visualize this relationship.² Saving in the first sense—certain income less certain expenditures—is obviously equal to all other expenditures less all other receipts. These other expenditures and

¹ This appendix was prepared by Dorothy Projector under the direction of the Committee.

² See Daniel H. Brill, "Measurement of Savings," *Federal Reserve Bulletin*, November 1949, pp. 1310-1317.

receipts include net changes in the specific assets and liabilities that are covered in definitions of saving in the second sense. Similarly, saving defined as the net change in certain assets less the net change in certain liabilities is equal to the net change in all other liabilities and all other receipts less the net change in all other assets and all other expenditures.

This conceptual equality of saving in the first sense with all other transactions is sometimes expressed by saying that the other transactions constitute the "components" of saving in the first sense or are the "form" which the saving takes. Where this manner of expression is used, however, care must be taken to include in the "components" and in the "forms" *all* the other expenditures less receipts and not just a partial specified list.

For a given individual or business, saving may "consist" of purchases of newly produced physical assets, purchases of existing assets, accumulation of claims on others, less debts owed to others. For larger groups debts owed and the corresponding claims held within the group, and transactions in existing assets within the group may be netted out. For the economy as a whole, if the definitions and contents of saving in both its positive and negative elements were kept consistent from group to group, this netting out of the corresponding positive and negative elements would leave saving as equal to additions to capital stock and the net accumulations of claims against foreign countries and nationals; that is, as equal to "change in national earned net worth." Different measures of saving vary in the extent to which they maintain these positive and negative elements within the group on a gross basis or eliminate them from the series.

Methods of calculation and estimation are discussed in general for each of the areas. No attempt is made to give an exhaustive list and description of data sources, calculation procedures and problems, etc. In most cases, there are published official or semi-official descriptions of such matters and appropriate references will be made. In some cases, particularly where the official description is detailed and scattered, more detail will be given in the discussion here.

The description of presentation is concerned with current release of data—where are the data published, in what form are the data presented, how long is the interval between the close of the period to which the data refer and the release date, what is the pattern of revision, and what analysis of the data appears in the release?

An historical section is included indicating where the historical series may be found and describing significant changes in definition and coverage, methods of calculation, and presentation of the statistics since the series were initiated.

1. SAVING SERIES IN THE NATIONAL INCOME AND PRODUCT ACCOUNTS

a. **Definition and coverage.** The saving series in the national income accounts are part of that structure of accounts and cannot be fully explained except in reference to the whole structure and the specific treatment of many individual items in it.³ Different treatment of certain items would result in different contents to the various saving concepts in the accounts.

The national income and product structure of accounts consists of 5 sectors or accounts—the consolidated business income and product account, the personal income and expenditure account, the consolidated government receipts and expenditures account, the rest of the world account, and the gross saving and investment account. These are presented for the year 1953 in Tables II—VI on pages 160-161 of the 1954 *National Income Supplement to the Survey of Current Business*. The system is summarized in Table I—the national income and product account.

The saving and investment account—Table VI—contains two major types of entries—the residual saving transactions of the sectors and the investment expenditures in the system. A slightly different version of Table VI, Table 5 in the body of the tables, is the form in which this account is kept up to date on an annual basis. The two tables presented below differ in detail.

SAVING AND INVESTMENT SERIES IN NATIONAL INCOME SUPPLEMENT TO SURVEY OF CURRENT BUSINESS

Table 5	Table VI
A Gross private saving	AA
B Personal saving	BB Personal saving
C Undistributed corporate profits	CC Undistributed corporate profits (domestic)
D	DD Foreign branch profits (net)
E Corporate inventory valuation adjustment	EE Corporate inventory valuation adjustment
F Business depreciation charges	} FF Capital consumption allowances by private business
G Accidental damage to fixed business capital	
H Capital outlays charged to current expense	GG
	HH

³The structure is described in detail in the 1954 *National Income Supplement to the Survey of Current Business*, a publication of the U.S. Department of Commerce, and is only sketched here.

Table 5—Cont.

I	Excess of wage accruals over disbursements
J	
K	Government surplus on income and product transactions
L	Federal
M	State and local
N	Statistical discrepancy
O	

Table VI—Cont.

	}	II	Excess of wage accruals over disbursements (business)
J		JJ	Excess of wage accruals over disbursements (government)
K		KK	Government surplus on income and product transactions
L		LL	
M		MM	
N		NN	Statistical discrepancy
O		OO	Gross saving and statistical discrepancy

a	Gross investment	aa	Gross investment
b	Gross private domestic investment	bb	Business purchases on capital account
c		cc	Change in business inventories
d	Net foreign investment	dd	Net disinvestment in the United States by rest of the world

The saving series to be discussed for the national income accounts are those in the upper part of the tables shown here.

The various saving series in the system are of the first kind mentioned; that is they are excesses of certain income over certain expenditures. The question as to the "form" these savings take or the "components" of these savings can be answered on two levels. In the national income system, saving of all the sectors taken together takes the form of gross private domestic investment and net foreign investment. The national income accounts as such do not provide information on the "components" of each of the saving series taken separately, either in the form of ultimate "share" of the total investment or in the form of direct investment in physical assets plus net claims accumulated.⁴ For the measure of "components," it is necessary to go outside the national income accounts. The Securities and Exchange Commission estimates of personal saving as presented in Table 6 of the *National Income Supplement* and corporate sources and uses of funds (discussed below) provide estimates of the components of personal saving and part of business saving.

Personal saving. Personal saving is the residual on the personal income and expenditure account. It is the excess of personal income over the sum

⁴ See earlier discussion on relation between saving of groups and components of groups.

of personal consumption expenditures and personal tax and nontax payments.

The National Income Division's definition of the personal sector is as follows: "The personal sector of the economy covers essentially the consuming public. It consists chiefly of individuals in their capacity as income receivers and consumers, but it includes also nonprofit institutions, private trust funds, and private pension, health and welfare funds."⁵ Personal saving includes the net saving of all these groups. In addition, the personal sector receives the entire net income of unincorporated enterprises and net rental income from individually owned property including net imputed rent from the home-ownership activity⁶ so that the net saving of such enterprises and properties is, in effect, part of personal saving.⁷ In summary, personal saving covers the net saving of the private noncorporate sectors of the economy.⁸

Gross saving of the private noncorporate sectors cannot be derived from the basic income and product accounts because a breakdown of capital consumption allowances is not provided in the accounts.⁹ However, estimates for depreciation charges and for accidental damage to fixed property by the private noncorporate sectors are entered in Table 6 of the 1954 *National Income Supplement*. This table—SEC Estimates of Personal Saving and Comparison with Department of Commerce Estimates of Personal Saving—is one formulation of the "forms" which personal saving may take. It is discussed in section 5 below.

Saving entries from the business account. The Department of Commerce defines this sector as follows: "The business sector is defined broadly to include all organizations which produce goods and services for sale at a price intended at least to approximate costs of production. In the main, it covers all private enterprises organized for profit, both corporate and noncorporate, including farm operators, independent professional practitioners, and lessors of real property. Mutual financial institutions, cooperatives, and nonprofit organizations serving business are also included, as well as government enterprises.

⁵ 1954 *National Income Supplement*, p. 49.

⁶ The home ownership activity is recorded in the national income business sector, not in the personal sector.

⁷ The net saving of most mutual financial institutions is also included in personal saving. See discussion below of saving entries from the business account.

⁸ This is subject to a minor qualification concerning the net saving of cooperatives, nonprofit organizations serving business, and mutual nonlife insurance companies. See discussion below of saving entries from the business account.

⁹ Gross saving through capital consumption allowances occurs in the national income business account. The personal sector receives the income of unincorporated enterprises and that of individually owned properties after deduction of capital consumption allowances so that only the net saving of such enterprises and properties is included in personal saving.

Owner-occupied houses and buildings used by nonprofit institutions serving individuals are considered to be business establishments selling their current services to their owners."¹⁰

The entries carried from the consolidated business income and product account to the saving and investment account consist of undistributed corporate profits (domestic), corporate inventory valuation adjustment, capital consumption allowances by private business, and the excess of wage accruals over disbursements (business).¹¹

The saving entries from this account do not, however, express the saving of all groups in the sector. The entire net income of unincorporated enterprises, including any retained earnings, and net rental income from individually owned properties, are carried to the personal sector so that the net saving of such enterprises and properties is, in effect, part of personal saving.

The surplus (deficit) of government enterprises is carried to the government account and is thus reflected in government saving. The net saving of cooperatives, nonprofit organizations serving business, and mutual nonlife insurance companies is not shown, but is, in effect, included in the statistical discrepancy. As a result of a set of rather complicated imputed transactions, the net saving of mutual life insurance companies, mutual savings banks, saving and loan associations, and credit unions is included in personal saving. The saving (undistributed profits) of stock insurance companies is included in corporate saving.

The business sector account does provide an estimate of net corporate saving. The corporate universe covered is essentially that covered by the annual tabulations of corporate income tax returns compiled by the Internal Revenue Service and presented in *Statistics of Income—Part 2*, the only difference being that activities of mutual insurance companies are removed and those of the Federal Reserve System added to the IRS tabulations. The estimate of corporate inventory profit or loss permits estimates of net corporate saving before and after adjustment for such profit and loss, that is, undistributed corporate profits and undistributed corporate profits after corporate inventory valuation adjustment. Moreover, corporate profits are adjusted to eliminate capital gains and losses.

An estimate of gross corporate saving cannot be obtained from the business sector or the saving and investment account since capital consumption allowances represent those for the entire business sector. Thus capital consumption allowances as entered in the business sector account include, in addition to

¹⁰ 1954 *National Income Supplement*, p. 40.

¹¹ Excess of wage accruals over disbursements arises from recording the wages and salaries received by the personal sector on a paid basis whereas the business (and government) accounts record wages and salaries on an earned basis. This treatment results in a saving entry in the business (government) accounts.

corporate capital consumption, those of unincorporated enterprises, mutual financial institutions, cooperatives, nonprofit organizations (those serving both business and individuals), and allowances in connection with individually owned properties including owner-occupied homes. However, an estimate of the corporate component of capital consumption allowances can be calculated by deducting the depreciation items from Table 6 of the 1954 *National Income Supplement* from total capital consumption allowances. The bulk of corporate capital consumption allowances are depreciation charges by corporations for tax purposes and are generally "book" depreciation charges. Depletion charges are not included; however, estimates for capital outlays charged by corporations to current expense and for accidental damage to fixed business capital are included. The type of depreciation and the depletion treatment affect net corporate saving but not gross corporate saving, since the sum of profits and capital consumption allowances is invariant with respect to the calculation of capital consumption allowances.

It should be noted that there are differences in the corporate profits entries in Tables VI and 5. Branch profits accruing from foreign branches are carried directly to the saving and investment account, not to the business account as they might have been, and appear as a separate entry in Table VI. However, in Table 5, the domestic and foreign corporation entries are combined. A similar thing is true of profits series currently published. This is not the profits in the business account but total profits in the system including the branch profits.

The Department of Commerce account for sources and uses of corporate funds is one formulation of corporate saving for a slightly different corporate universe—this is, corporate banks and insurance companies are excluded. It is discussed in Section 2 below.

Saving entries from the government account. The National Income Division's definition of the government sector is as follows: "The government sector includes Federal and State and local general governments and the social insurance funds administered by them."¹²

Government surplus on income and product transactions is the difference between the government receipts and expenditures recorded for the consolidated government account. As in the other saving series in the national income system, the definition of this surplus is implied in the definition of the receipts and expenditures going into its calculation. These are explained in the Supplement in detail.

Among the receipts is the surplus (deficit) of government enterprises (although their activities for current account purposes are recorded in the business sector account). Thus their saving is part of the surplus. Purchases

¹² 1954 *National Income Supplement*, p. 53.

of all goods, including capital outlays of both general government and government enterprises, are included in the government expenditures that are deducted from government receipts in deriving the surplus or deficit.¹³ Thus, the surplus or deficit figure is not a measure of saving in the same sense that the series for other sectors are.¹⁴

Financial transactions are not, in general, reflected in the expenditures and receipts series and thus some of the surplus "corresponds" to loan programs.¹⁵ Since receipts include social insurance taxes and expenditures include benefits, the surplus of social insurance funds are in government surplus as defined in the national income accounts.

The surplus on the government account is affected by the timing with which the receipts and expenditures transactions are recorded. Profits tax receipts are on an accrual basis; purchases of goods are recorded when the goods are delivered, not when paid for; personal taxes are recorded when paid, not when received.¹⁶

There is no statistical presentation of the "components" of this surplus; that is, of all the other expenditures and receipts that are not included in the income and product receipts and expenditures that are netted to yield the surplus. Roughly, the surplus includes net loans made by the general government and enterprises (other than CCC loans), net purchases of land and existing assets, excess of profits tax liabilities over collections, excess of personal tax payments over collections, increase in receivables from business net of increase in payables to business, increase in cash balances appropriately defined, net repayment of government debt appropriately defined, and net decrease in CCC guaranteed loans held by private lending agencies, and a host of miscellaneous items. The actual construction would be very difficult and could not utilize currently available information in many cases—for example, the appropriate Federal debt is neither public debt nor net cash borrowing, the appropriate Federal cash balance is neither the general fund balance nor the government balances as reported in banking statistics, etc.

¹³ This is subject to the minor qualification that purchases of existing capital goods are not included in government expenditures, nor sales of such goods in receipts; hence, they are included in the surplus or deficit series.

¹⁴ This treatment, as in other cases affecting saving, does not follow necessarily from the conceptual framework. If capital formation were excluded from government expenditures entering into the calculation of the surplus and instead were put in as a line in the investment side of the saving and investment account, the government gross surplus (before deduction of capital consumption allowances) would be larger and both sides of saving and investment account larger.

¹⁵ The exception is CCC. Capital formation for CCC included in expenditures includes not only net increment in inventories, but also support loans by CCC and loans by private financial institutions guaranteed by CCC. Under this treatment, the government surplus goes down when commercial banks make loans (guaranteed by CCC) to farmers.

¹⁶ The CCC treatment can in a rough manner be considered as a problem in timing.

b. **Method of calculation.** As indicated above, the saving estimates in the national income and product accounts are part of a complex accounting structure. Most of the saving items are calculated as the difference between certain series in the accounts. A further description of the calculation would involve describing the derivation of the "parent" series in the accounts which are netted together to produce the saving series. This in turn would involve descriptions of derivation of practically all series in the accounts. These descriptions are given in the 1954 *National Income Supplement*.

c. **Presentation of the statistics**

Annual data. The February issue of the *Survey of Current Business*, available about the 24th or 25th of February, presents preliminary annual data on national income and product for the preceding year. The saving data included are as follows: personal saving, corporate inventory valuation adjustment, capital consumption allowances, corporate profits before and after tax, and dividends. Undistributed corporate profits may be obtained by deducting dividends from corporate profits after tax. The OBE press release, *National Income and Product*, containing the same data, is available two weeks earlier. Revised data on corporate profits are presented in the May issue.

The July issue of the *Survey of Current Business* (or the *National Income Supplement* if one is published) presents a complete set of accounts for the preceding year so that both Table 5—Sources and Uses of Gross Saving—and Table VI—Gross Saving and Investment Account—are available. Revised data from a variety of sources are incorporated in the accounts at that time.¹⁷

Quarterly data. Quarterly data become available as follows:¹⁸

Personal saving, corporate	1st quar. May
inventory valuation adjustment,	2nd quar. Aug.
capital consumption	3rd quar. Nov.
allowances	4th quar. Feb.
Corporate profits after tax,	1st quar. Aug.
dividends, permitting	2nd quar. Oct.
calculation of undistributed	3rd quar. Jan.
corporate profits ¹⁹	4th quar. May

¹⁷ The Table VI form is never revised but can be constructed from data that are.

¹⁸ *Survey of Current Business*—published about the 24th or 25th of the month. OBE press release, *National Income and Product*, available two weeks earlier.

¹⁹ Dividends are published on the same schedule as personal saving, etc., but since corporate profits after tax are not available until the following period, undistributed corporate profits cannot be calculated.

The July issue, which presents a complete set of accounts on an annual basis, also presents quarterly data for the preceding year as follows:

Personal saving ²⁰	Table 46
Personal saving, seasonally adjusted ²⁰	Table 47
Corporate IVA	Table 42
Corporate IVA, seasonally adjusted	Table 43
Capital consumption allowances	Tables 48 and 49

In addition, undistributed corporate profits may be obtained by deducting dividends (Table 48) from corporate profits after tax (Table 42). Tables 49 and 43 provide the data on a seasonally adjusted basis.

The various issues of the *Survey* containing saving data also present over-all measures of income and product along with a discussion of current economic developments.

Revisions of the income and product series including the saving estimates are made each July to incorporate the new information that has become available since the previous July. Since recent-year estimates are based on incomplete data, fairly widespread revisions can be expected for the two most recent years because of the lag in the Internal Revenue Service tabulations from income tax returns, which serve as benchmarks for many of the component estimates. Other revisions reflect the incorporation of Census information and other improved sources and methods which become available with varying lags.

The Internal Revenue Service data directly affect the estimates of corporate profits and dividends and consequently of undistributed earnings. They also affect the estimates of many of the personal income components such as dividends, interest, and nonfarm entrepreneurial income.

Wages and salaries, in turn, are adjusted to the latest social security benchmarks, and the most recent data on farm income from the Department of Agriculture and the results of the surveys of professional income are incorporated into the National Income Division estimates.

Census data affect the level of consumer expenditures only at infrequent intervals. Year-to-year revisions are affected by such factors as the adjustment to sales tax data, the availability of more comprehensive annual data than can be obtained for some series on a quarterly basis and information from private research groups.

²⁰ It should be noted that the seasonally adjusted series on personal saving is derived as the difference between seasonally adjusted disposable personal income and seasonally adjusted personal consumption expenditures. Moreover, the seasonally unadjusted series on personal saving reflects certain seasonal adjustments since some components of personal income, e.g., farm and part of nonfarm entrepreneurial income, incorporate seasonal adjustments.

There is no fixed policy on quarterly revisions. An attempt is made to keep them to a minimum in contrast to earlier procedures when the books were reopened more frequently.

The National Income Division constantly analyzes the national income and product revisions and studies their impact on the various derived series such as the saving estimates. No useful generalizations have as yet emerged with respect to the size and direction of revisions. The record of national income revisions is discussed more fully in the section, "Characteristics of the Revisions" starting on page 65 of the 1954 *National Income* Supplement.

d. **History.** The saving series in the national income and product accounts are summarized for the years 1929 through 1953 in Table 5 of the 1954 *National Income* Supplement.

Certain of the series entered in Table 5 are also available on a quarterly basis for the years 1939-1953 in the 1954 *National Income* Supplement, as follows:

Personal saving	Table 46
Personal saving, seasonally adjusted	Table 47
Corporate inventory valuation adjustment	Table 42
Corporate inventory valuation adjustment, seasonally adjusted	Table 43
Capital consumption allowances	Tables 48 and 49

In addition, undistributed corporate profits may be obtained by deducting dividends (Table 48) from corporate profits after tax (Table 42). Tables 49 and 43 provide the data on a seasonally adjusted basis.

Estimates of net business saving appeared in the original study of national income undertaken by the Department of Commerce and prepared with the cooperation of the National Bureau of Economic Research. This was published early in 1934 as Senate Document No. 124, Seventy-third Congress, second session, under the title, *National Income, 1929-32*. The first time series on personal saving (covering the period 1929-41, annually) was published in the May 1942 issue of the *Survey of Current Business*. (A preliminary exploratory study covering a period of 26 months appeared in the April 1942 *Survey*.)

Quarterly estimates of net corporate saving were first published in the June 1942 *Survey* for the period from the first quarter of 1938 to the first quarter of 1942 inclusive. Quarterly estimates of net savings of individuals were started in the August 1942 *Survey* and covered the period from the first quarter of 1939 to the second quarter of 1942 inclusive.

Significant changes in definition and coverage and method of calculation. In the original (1934) compilation separate estimates were made of corporate

and noncorporate business saving. Corporate saving was obtained by deducting dividends from profits after taxes net of capital gains and losses from the sale of assets. Entrepreneurial saving for most industries was based on an assumption of the same net income or profit and loss ratios as prevailed for corporations. For agriculture, available statistics on gross income and production costs permitted the estimation of net income from which estimated entrepreneurial withdrawals were deducted to obtain estimated business saving. Average withdrawals per entrepreneur in agriculture were assumed to be equal to the average wage in agriculture.

Capital consumption allowances and inventory valuation adjustments were not part of the accounting framework in the national accounts prior to 1942.

The personal saving series, which was started in 1942 with the introduction of the gross national product estimates, was derived as a residual by subtracting consumer expenditures from disposable personal income. At this time the national accounts were redrawn so that the net saving of unincorporated businesses was included in the net saving of individuals. This procedure avoided the troublesome problem of endeavoring to separate the saving of individuals in their personal and business capacities and thus eliminated a considerable measure of arbitrary judgment from the saving estimates. As a consequence of this change what had formerly been designated as business saving (net) was restricted to undistributed corporate profits.

In 1942 also preliminary estimates of the inventory valuation adjustment were introduced as well as estimates of capital consumption allowances which made it possible to set up total gross private savings.

In view of the residual nature of undistributed corporate profits (profits after tax less dividends) and of personal saving (disposable personal income less consumer expenditures), changes in the definition and scope of these residuals merely reflect changes in the parent series from which they are derived. It should be emphasized that throughout much of the early period—when the GNP was being introduced and the system of national accounts redesigned—the estimates were preliminary since not all of the components were yet calculated in a definitive manner. The publication time schedule was accelerated to show the marked changes being wrought by World War II, not the precise level of each component. Moreover, in order to issue them early enough to be of use in the analysis of current problems, the estimates then as now were prepared before complete source material of the most recent years became available; the lag in reporting being greater in the earlier period.

The full report on the basic revisions of the national income and product statistics was finalized in July 1947 although parts of it appeared in preliminary form in the *Survey* at earlier dates.

The principal differences that emerged between the revised series for profit

after tax and the former national income series may be summarized as follows: Depletion charges were no longer deducted in computing profits; additional profits discovered after audit were included; an adjustment for the speed-up of amortization was introduced; and the previous practice of using Interstate Commerce Commission data instead of Internal Revenue Service data for railroads and pipelines was discontinued.

Changes in the parent series underlying the personal saving estimates have been more voluminous and consequently may be only briefly summarized here. A reconciliation table in the July 1947 *National Income* Supplement lists the following items in the new personal income series, which were not in the old:

- Noncorporate depletion charges
- Net imputed rent of owner-occupied dwellings
- Change in farm inventories not held for sale
- Employer contributions to private pension and welfare funds
- Income in kind to armed forces
- Business transfer payments
- Government military life insurance benefits
- Inventory valuation adjustment (noncorporate)

In addition, two items in the old series were dropped in the new:

- Premiums to military life insurance funds
- Private pension payments

In the case of personal taxes which are deducted from personal income to get disposable income, the principal change was the elimination of taxes on owner-occupied dwellings which are now classified as indirect business taxes.

Personal consumption expenditures also incorporated many changes in concept such as the inclusion of net rent, depreciation and taxes on owner-occupied dwellings, military income in kind, and services furnished without payment by financial intermediaries except insurance companies. But the most important revision was purely statistical arising principally from a fundamental change in the estimating procedure for consumer expenditures. Before World War II gross national product was computed from the income side of the national account by adding the necessary adjustment items to the national income. In the filling in of the product side of the account, consumer expenditures were obtained as a residual, as direct estimates of this component were not then available. In the revised estimates, however, all items on both sides of the account were obtained independently. The direct estimates of consumer expenditures proved to be significantly higher than the previous residual estimates—quite apart from definitional differences.

Capital consumption allowances in the revised estimates as published in 1947 and thereafter excluded depletion allowances and included depreciation on owner-occupied dwellings, and institutional depreciation.

Changes in the inventory valuation adjustment were statistical arising from a thorough reworking of the estimates industry by industry.

For a more comprehensive summary of all of these revisions and the rationale underlying them, see "Changes in Content of National Income Aggregates" starting on page 11 of the July 1947 *National Income Supplement*. The final portion of this section of the Supplement deals specifically with the personal saving estimates.

Significant changes in form of presentation. Data on business saving appeared annually in the *Survey* in 1934, 1935 and 1936. From 1937 to 1942 the estimates were not shown in the annual review tables but they could be derived by differencing the published series on income produced and income paid out. These saving data (both explicit and implicit) were revised and further breakdowns given in the special national income bulletins which were released during the course of this period: in 1934 (the original study), in 1936, and in 1938.

In 1942 separate noncorporate business saving estimates were discontinued and encompassed in the newly developed estimates of personal saving. The estimates of personal saving and business saving (undistributed corporate profits) along with capital consumption allowances and inventory valuation adjustment were brought up to date two or three times a year until 1947, but the estimates did not appear in the same monthly issues of the *Survey* each year. Separate tables showing the absorption of gross savings by the Federal Government appeared in the March 1943 and April 1944 issues of the *Survey*.

In July 1947 separate tables, "Sources and Uses of Gross Saving" (Table 5), and "Liquid Saving Estimates of the Securities and Exchange Commission and Their Reconciliation with Personal Saving Estimates of the Department of Commerce" (Table 6) were incorporated as part of the main body of tables in the annual review of national income and product. The present quarterly reporting was instituted in 1947.

The format of Table 5, "Sources and Uses of Gross Saving" was changed somewhat in the 1954 *National Income Supplement*. The statistical discrepancy, formerly added to gross private saving, was listed as a separate item so that it might with equal appropriateness be added to saving as before, or subtracted from investment. Government deficit or surplus was entered with changed sign on the right side of the saving and investment account to place it on a basis more nearly like other forms of domestic saving and dissaving.

2. SOURCES AND USES OF CORPORATE FUNDS

a. **Definition and coverage.** Statements of sources and uses of corporate funds have been published annually by the Department of Commerce for the years beginning 1946. These statements record annual data on uses of funds for capital expenditures and net increases in financial assets and the sources of such funds from gross corporate savings (retained profits plus depreciation), net new stock issues, and borrowing.²¹ Since the data are derived from a number of different sources and do not cover all types of capital transactions, there is usually a discrepancy between total recorded sources and total recorded uses of funds.

In general, the data cover all U. S. corporations included in *Statistics of Income* tabulations except banks and insurance companies.²² However, the coverage varies slightly among the individual series making up the statement.

No industry detail is available other than a funds statement for manufacturing corporations for the years 1946-53 published in the December 1954 *Survey of Current Business*.²³

The transactions presented in the sources and uses statement are as follows:

Sources	Uses
Retained profits	Plant and equipment
Depreciation	Increase in other assets—total
Net new issues—total	Inventories
Stocks	Receivables
Bonds	Consumer
Increase in other liabilities	U. S. Government
Mortgage loans	Other
Bank loans	Cash, deposits, and U. S. Govt.
Short	securities
Long	Cash and deposits
Trade payables	U. S. Government securities
U. S. Government	Other assets
Other	
Federal income tax liabilities	
Other liabilities	
Discrepancy	

b. **Method of calculation.** Data underlying the sources and uses table are almost entirely obtained from the national accounts estimates; from other agencies, mainly the Securities and Exchange Commission; and from the

For footnotes, see following page.

OBE-SEC quarterly survey of plant and equipment expenditures. Component series are reviewed individually for reasonableness and consistency by the responsible agencies. The sources and uses of funds arrangement of these data provides an additional check upon their consistency with one another by means of a comparison of the aggregate sources of corporate funds with aggregate uses.

The following is a brief description of the sources of data for each item now being published in the statement.

Sources of Funds

Retained profits are the undistributed corporate profits component of national income, adjusted to exclude banks and insurance companies. Retained profits, like change in inventory in uses of funds, are before inventory valuation adjustment.

Depreciation charges are the corporate component of depreciation in national income data on capital consumption allowances and can be obtained from *Statistics of Income*. Depreciation of banks and insurance companies is excluded.

Net new issues, with detail on *stocks* and *bonds*, are the all-industries totals from the SEC series "Net change in corporate securities outstanding" (published quarterly in the *SEC Statistical Bulletin*), adjusted to exclude the net issues of banks and insurance companies.

²¹ Data to construct the major (but not all) elements of a roughly comparable funds statement on a quarterly basis are published in many of the same sources from which the annual figures are derived.

²² The coverage of this corporate statement differs from the coverage of the corporate income and saving series in the national income accounts discussed earlier in Section 1. The latter series includes corporate banks and insurance companies. The coverage also differs from the corporate sources and uses of funds presented as part of the Federal Reserve flow-of-funds system of accounts discussed in Section 3. The flow-of-funds corporate sector statement excludes corporate banks and insurance companies and in addition excludes corporate farms, investment companies, and foreign branches of American corporations from all series in the statement. The flow-of-funds corporate statement also differs to some extent from the Commerce statement in form, in definition, classification, and coverage of transactions, and in methods of estimation.

²³ The *Federal Reserve Bulletin* each year publishes industry detail in corporate funds statements for large corporations based on annual reports to stockholders. Statements are shown for 10 manufacturing industries, 3 utility industries, and retail trade. The previous total number of 300 corporations was reduced to 298 by mergers within the group during 1953.

Increase in *mortgage loans* owed by corporations is taken from Commerce Department data on private and public debt in the United States. These data are published annually in the *Survey of Current Business*, most recently in the October 1954 issue.

Increases in *bank loans*, with detail for short- and long-term loans, are SEC estimates computed as a step in the derivation of the SEC series on saving as published in Table 6 of *National Income Supplements*.

Increase in *trade payables* and the supporting detail are SEC corporate working capital series. The SEC working capital data are benchmarked on tabulations of tax return data published annually in *Statistics of Income* and, like the Commerce funds statement, cover all corporations reported in *Statistics of Income* except banks and insurance companies. Currently, the working capital data are based on information from the *Quarterly Financial Report for U. S. Manufacturing Corporations* prepared jointly by the Federal Trade Commission and the Securities and Exchange Commission, from regulatory commission data, and from other sources.

Increase in *Federal income tax liabilities* is the change from year to year in the national income estimate of taxes accrued on each year's earnings.

Changes in *other liabilities* consist of changes in "other current liabilities" in the SEC working capital data plus changes in conditional sales contract obligations of railroads as compiled by ICC. The conditional sales contracts are a form of long-term liability that is not covered by data on net new security issues but that has been of some importance in recent years.

Uses of Funds

Plant and equipment is the corporate component of the SEC-Commerce series on plant and equipment expenditures (which covers outlays only for new depreciable assets) plus small additional amounts representing used equipment purchases. No allowance is made for investment of corporate farms or for the real estate and construction industry investment in residential construction.

Change in *inventories* and the industry detail supporting the total change are data from the National Income Division at Commerce on the corporate components of their inventory change series. The data represent book net changes in inventories; that is, they do not reflect the National Income Division inventory valuation adjustment.

Net increases in *receivables* are presented in total and with supporting detail on changes in amounts due from *consumers, U. S. Government, and others*.

The total and the U. S. Government component are taken from quarterly SEC data on current assets and current liabilities of U. S. corporations published in the SEC *Statistical Bulletin* and in SEC releases on working capital of U. S. corporations. Receivables due from consumers are taken from unpublished data underlying the SEC series on individuals' saving.

Net increases in *cash and deposits* and *U. S. Government securities* are taken from the SEC data on corporate working capital.

Net increase in *other assets* consists of "other current assets" in the SEC corporate working capital data and net purchases of portfolio securities by investment companies as tabulated by SEC.

c. **Presentation of the statistics.** The Commerce Department statement of corporate sources and uses of funds is presented annually in the *Survey of Current Business* in a special article. Heretofore the article has appeared sometime between 2 and 7 months after the close of the calendar year, but Commerce now plans to publish it 7 to 8 months after year-end since data published earlier than midyear are subject to substantial revisions. Recent presentations of the funds statement have included the annual data for all years from 1946 to the most recent year.

Regular revisions are made annually based on new Internal Revenue Service information which provides the benchmark. Recent years not covered by such information are also revised on the basis of any changes which may have been made by agencies supplying the data. A few additional revisions have been made at times to incorporate minor conceptual or other changes. For example, the change in nongovernment security holdings of investment companies was added to "other" uses, since net new issues of these concerns are included in total net new issues. As other examples, the series was revised following the release of new SEC estimates of new security issues, and when OBE-SEC plant and equipment data were revised in 1952.

In the past, revisions in some items have been sizable, particularly before the release date was moved back. Prior to that time, full-year data were not available for some of the series used as extrapolators. Revisions to IRS benchmarks have also been significant at times and for some items. Receivables and payables have been subject to the largest revisions although other items have also been off appreciably in particular years.

No significant changes have been made in definition, coverage, method of estimation, or form of presentation since the first publication of the statement in March 1948.

3. FLOW-OF-FUNDS SYSTEM OF NATIONAL ACCOUNTS OF THE BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM

a. **Definition and coverage.** The flow-of-funds system of accounts will be presented in *The Flow of Funds in the United States, 1939-1953*, a forthcoming publication of the Board of Governors of the Federal Reserve System. The system records all transactions that involve at least two separate economic units and which are effected through transfers of credit or money. The system divides the economy into 10 groups or sectors in the economy with further subdivisions or subsectors for the 3 major financial sectors. In general, these sectors divide the economy in terms of types of economic unit rather than types of activity so that all transactions—current and capital, financial and nonfinancial—of an economic unit are recorded in a single sector account.²⁴

The sector and subsector groupings are as follows:

1. Consumers
2. Corporate business
3. Nonfarm noncorporate business
4. Farm business
5. The Federal Government
6. State and local governments
7. The banking system
 - a. Commercial banks
 - b. Mutual savings banks and Postal Savings System
 - c. Federal Reserve Banks
 - d. Treasury monetary funds
8. Insurance companies
 - a. Life insurance companies
 - b. Self-administered pension plans
 - c. Other insurance companies
9. Other institutional investors
 - a. Savings and loan associations
 - b. Nonprofit organizations
 - c. Other financial institutions
10. The rest of the world

²⁴ Certain Federal monetary funds are recorded in the banking sector account rather than in the Federal Government sector account; and to the extent that the business and personal activities of given proprietors constitute single economic units (presumably only for some small sole proprietorships in certain industry lines), the activities of economic units are divided between two sectors.

For each sector, a sources and uses of funds statement is presented recording all the transactions both financial and nonfinancial that the sector engages in. The transactions are grouped in terms of 12 nonfinancial transactions categories and 9 financial transaction categories. The transaction classifications are as follows:

Nonfinancial transactions

Payments and receipts for:

Payroll
Interest
Dividends and branch profits
Rents and royalties
Insurance premiums
Insurance benefits
Grants and donations
Taxes and renegotiation payments
Tax refunds
Net withdrawals by proprietors
Real estate transfers
Other goods and services

Financial transactions

Changes in:

Currency and deposits
Gold and Treasury currency
Trade credit
Bank loans other than mortgages
Federal obligations
State and local obligations
Corporate securities
Mortgages
Miscellaneous financial assets and liabilities

The various categories of transactions are recapitulated in transaction accounts which show the sectors participating in each category. For practically all the financial transactions categories, estimates of the stock of assets held and of liabilities owed by each sector are presented in addition to the net flows by sector.

More transaction detail is shown in both the sector and the transaction accounts than is indicated by the list of transaction categories. In particular, in many of the sector accounts capital expenditures—construction, equipment, and inventories—are indicated.²⁵ In the business sectors, nonfinancial transactions are divided into operating and other (including capital transaction).²⁶

In the sector sources and uses statements, transactions are recorded on a complete and gross a basis as possible. "Intermediate" and existing asset

²⁵ Transactions in capital goods do not constitute a separate transaction category in the flow-of-funds accounts primarily because of the difficulty of distinguishing receipts from the sale of goods devoted to capital uses by the purchaser from other receipts of the seller. In terms of the standard flow-of-funds transaction categories, private capital expenditures are mainly purchases of other goods and services, but they also include real estate transfers.

²⁶ Net operating surplus (i.e., operating sources less operating uses) is analogous to profits plus depreciation. The exact relationship between this net and series on business net income is shown for each business sector in a reconciliation table.

transactions as well as "final" transactions are shown. Receipts are not netted against expenditures or vice versa. Change in financial assets and liabilities is shown on a net basis for each category but there is no netting of asset categories against liability categories. Moreover, the accounts (with some exceptions) are on a combined rather than a consolidated basis so that holdings of assets and owing of debts for any group are not affected by the identity of the other party to the asset/debt relationship.

There are no series in the system labelled as saving. However, enough information is provided for the reader to combine items in a variety of ways to produce concepts and measures of saving he deems useful. Saving concepts derivable from the system can be either in terms of the net between certain receipts and expenditures or of the net accumulation of certain assets less the net incurrence of certain debts. For each saving concept derived as an excess of some receipts over some expenditures, the "components" of this saving concept are automatically provided in terms of all the transactions not netted together in the saving definition.

Because of the transaction coverage of the system—transactions between different transactors effected through the use of money and credit—some concepts of saving are not directly derivable from the system as such. However, in many such cases, the information needed for such derivation is provided either in memoranda lines or in the reconciliation tables giving the relationship between flow-of-funds concepts and comparable measures in other statistical compilations (mainly in the national income accounts).

For example, since the accounts record only transactions between different transactors, depreciation, which is an internal transaction between different accounts of the same transactor—income account and capital account—is not recorded as such in the flow-of-funds accounts. This means that gross business saving concepts but not net business saving concepts are derivable from the accounts proper. However, measures of depreciation charges are provided in the business sector statements as memoranda. Estimates of depreciation on consumer assets—owner-occupied houses and other durables—have not been attempted.

The description of kinds of saving estimates in the flow-of-funds system or derivable from it thus involves descriptions of the coverage of the transaction classifications and of the sectors, and of some of the supplementary information provided in the memoranda lines and reconciliation tables. The coverage of the transaction categories and of the sectors is given below. Table 1 indicates for the year 1953 which sectors were engaged in which transactions.

Nonfinancial transaction categories. The general content of most of the nonfinancial transaction categories is indicated by the names of the categories.

Thus payroll consists mainly of cash payments and receipts of wages and salaries (it excludes wages in kind). Interest and dividends represent returns on investments in loans and securities both private and government (imputed interest payments are excluded). Rents and royalties arise from the leasing of real property; no imputed rents are recorded.

Insurance premiums and benefits are recorded gross and in the full amount of the payments. No identification of the element of "saving" in life or annuity premiums is made. However, changes in the liability of private life insurance companies for policy reserves are entered as a memorandum item in the life insurance companies subsector.²⁷ The insurance premiums and benefits categories include payments and receipts under government social and other insurance programs as well as private insurance.

Grants and donations cover a variety of transactions, such as charitable contributions, relief payments, business payments in connection with welfare and profit-sharing programs, Federal Government payments in connection with veterans' programs, and Federal cash grants in aid to State and local governments under construction, public assistance, and other programs. Taxes include all taxes except employment taxes which are in the insurance premium category. Taxes are recorded on a receipts and payments basis, not on a liability basis.

Transactions between unincorporated business and their owners as consumers are covered by "net withdrawals by proprietors." This transaction category combines nonfinancial flows—withdrawals corresponding to wages, interest, and dividends—with financial flows—investment or disinvestment of capital funds by proprietors. The combination is an expedient made necessary by lack of explicit information on financial or nonfinancial components. Since this transaction endeavors to measure only actual net withdrawals from the business, saving out of the net income of the business can be recorded in the business sector or in the consumer sector, depending on where it occurs. This treatment means that net saving of the owners in terms of increase in equity in the business is not shown in the consumer account but can be derived from items in the noncorporate business accounts or from reconciliation statements.

Real estate transfers represent transactions in existing (i.e., not newly constructed) tangible assets—land, residential property, and business plant. Because of data deficiencies, the coverage of transactions in existing assets in the account is not adequate. The real estate transfers that are covered are gross purchases and sales of existing houses by consumers, land purchases

²⁷ It should be noted that changes in policy reserves are not a measure of increments in cash surrender value of policies, which for some purposes is probably a more meaningful measure of consumer saving through life insurance.

TABLE 1
STRUCTURE OF THE FLOW-OF-FUNDS ACCOUNTS, 1953
Sources and Uses of Funds
(In billions of dollars)

Transactions	Sector																				Valuation adjustment and discrepancy						
	Consumer		Corporate		Nonfarm non-corporate		Farm		Federal Govt.		State and local govt.		Banking		Insurance			Other investors				Rest of the world		Total			
	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U		S	U	S	U	S	U
Nonfinancial																											
Payroll	S	195.5																									
	U		2.7	118.7	30.0	2.6	19.0	13.5	1.9	1.4	—	1.2	4.3	.1	—	*					*				195.5		—
Interest	S	7.1	1.7	.3	*	.9	.5	6.0	2.4	.3	.2	.1	1.1	*	.1						.1				20.7		—
	U		5.5	3.9	1.7	.9	5.2	.8	1.5	*	—	—	.1	.6	*						.4				20.7		—
Dividends and branch profits	S	9.2	3.0	—	*	—	—	*	.1	—	.2	.1	—	.4	.3										13.3		—
	U		—	10.6	—	*	—	—	.5	.1	—	.2	—	—	.4	1.5									13.3		—
Rents and royalties	S	—	5.1	17.2	1.1	.1	.3	.1	.2	—	—	.1	*	*	—	—					—				24.3		—
	U		10.8	5.5	3.9	3.2	.3	.2	.1	*	—	—	.3	*	*	—					—				24.3		—
Insurance premiums	S	—	—	—	—	7.4	2.2	—	11.0	2.6	14.0	—	—	—	.2						.2				37.2		—
	U		17.6	10.7	2.9	.4	—	1.4	.3	.2	—	3.5	.3	.1	*	*					*				37.4		— .1
Insurance benefits	S	15.8	1.1	1.0	.2	—	1.0	*	*	—	1.4	*	*	*	*	*					*				20.6		—
	U		—	—	—	—	5.7	1.8	—	6.1	.2	6.8	—	—	—	—					.1				20.6		*
Grants & donations	S	8.1	.2	—	.2	.1	8.8	—	—	—	—	—	—	—	2.0										25.0		—
	U		5.2	1.4	.1	—	8.7	8.5	—	—	—	—	—	—	1.0	—	—	—	—	—	.1				25.0		—

Taxes and renegotiations	S	—	—	—	—	64.8	21.4	—	—	—	—	—	—	—	—	—	—	—	—	—	86.3	—	—
	U	40.9	36.0	6.8	1.1	—	—	—	.8	.4	—	—	.4	*	—	—	—	—	—	—	86.4	—	-.2
Tax refunds	S	2.6	.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.1	—	—
	U	—	—	—	—	—	3.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.1	—
Net withdrawals by proprietors	S	43.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43.1	—	—
	U	—	—	34.3	8.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43.1	—
Real estate transfers	S	16.8	.2	1.5	.4	*	.1	—	*	—	—	—	—	*	—	—	—	—	—	—	18.9	—	—
	U	18.1	.1	*	—	—	.1	.5	—	.2	—	—	—	—	—	—	—	—	—	—	—	18.9	—
Other goods & services	S	5.3	538.3	195.8	29.8	5.0	5.8	.8	.4	—	.1	4.9	—	—	—	—	—	—	—	15.8	802.0	—	—
	U	201.1	368.4	136.2	15.7	42.9	13.6	.8	1.2	*	2.3	5.0	.1	*	—	—	—	—	—	14.3	801.6	—	.4
Total non-financial	S	303.4	550.0	215.9	31.7	78.4	40.0	7.0	14.2	2.9	15.9	10.8	1.1	.4	—	—	—	—	—	18.4	1290.0	—	—
	U	301.8	555.3	215.9	32.8	85.1	40.4	5.9	9.4	.2	14.3	11.0	.9	.5	—	—	—	—	—	16.5	1290.0	—	*

* Less than 50 million dollars.

Note.—S=Source. U=Use. Details may not add to totals because of rounding.

The total sources and uses of funds shown for each sector and for the system as a whole are dependent upon the method of presentation of the financial transactions in this table and are not necessarily the same as totals shown in other presentations of the flow-of-funds accounts.

TABLE 1—Continued
STRUCTURE OF THE FLOW-OF-FUNDS ACCOUNTS, 1953—Continued
Sources and Uses of Funds
(In billions of dollars)

Transactions	Sector																				Valuation adjustment and discrepancy																												
	Consumer		Corporate		Nonfarm non-corporate		Farm		Federal Govt.		State and local govt.		Banking		Insurance								Other investors						Rest of the world		Total																		
															Life insurance		Self-admin. pension plans		Other insurance companies				Non-profit		Savings and loan		Financial inst. n.e.c.																						
	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U	S	U			S	U	S	U	S	U	S	U	S	U																	
Financial																																																	
Currency & deposits	S	—	—	—	—	—	—	—	1.6	—	—	5.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.5	—	—										
	U	4.4	—	.1	—	.4	*	—	—	—	1.0	—	—	.1	—	.1	—	.1	—	.1	—	*	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.3	6.6	—	*									
Gold and Treasury currency	S	—	—	—	—	—	—	—	*	—	—	1.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1	—	—										
	U	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2	1.2	—	-.1							
Trade credit	S	—	—	—	—	—	—	—	.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.1	—	—									
	U	—	—	.1	—	1.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.4	—	.2							
	S	2.2	—	—	1.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.3	—	—								
	U	—	—	.6	—	—	.1	—	.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.8	—	—						
Bank loans other than mortgages	S	1.7	—	*	—	.7	—	.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.9	—	—							
	U	—	—	—	—	—	—	—	—	—	—	2.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.9	—	*					
Federal obligations	S	—	—	—	—	—	—	—	5.2	—	—	—	—	.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.9	—	—					
	U	—	.3	—	1.1	—	.6	—	—	—	1.8	.9	—	—	—	—	.2	—	.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.8	—	.1		
State & local obligations	S	—	—	—	—	—	—	—	.3	—	3.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.9	—	—		
	U	—	2.0	—	.1	—	—	—	—	—	.3	.7	—	.1	—	—	.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.9	—	—

Assets	S	—	—	.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.6	—	—
	U	1.2	.2	—	—	—	*	—	.3	2.8	2.4	.5	*	—	—	.3	.1	—	—	—	7.9	*	
Corporate securities	S	—	6.7	—	—	—	—	—	.1	—	—	—	—	—	—	.4	.1	—	—	—	7.3	—	—
	U	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mortgages	S	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	U	.6	—	.5	—	.3	—	2.5	2.1	—	*	—	—	3.6	.1	—	—	—	—	—	9.8	—	—
Liab.	S	6.2	1.3	1.8	.4	—	—	—	—	—	—	*	—	—	—	—	—	—	—	—	9.8	—	—
	U	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Misc.	S	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	U	4.4	—	.4	*	.3	—	*	.2	—	*	—	—	.3	.2	.2	—	—	—	—	6.0	.9	—
Liab.	S	.6	*	—	.2	.3	—	.2	.3	—	—	—	—	3.8	.7	.9	—	—	—	—	7.0	—	—
	U	—	—	.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.1	—
Total financial	S	—	—	.6	—	.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.7	—	—
	U	12.9	1.6	3.8	*	.6	3.0	6.9	5.3	2.7	1.5	.2	—	4.2	1.1	2.9	—	—	—	—	46.5	.9	—
Liab.	S	10.7	8.0	3.5	1.2	7.4	3.6	6.4	.7	—	—	.4	3.8	1.1	1.0	—	—	—	—	—	47.7	—	—
	U	—	.6	.1	.1	.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	.9	—
Total sources		314.4	558.0	220.0	32.9	85.9	43.6	13.4	14.9	2.9	15.9	11.2	4.9	1.5	10.4	1338.4	—	—	—	—	—	—	—
Total uses		314.4	558.0	220.0	32.9	85.9	43.6	13.4	14.9	2.9	15.9	11.2	4.9	1.5	19.4	1338.4	—	—	—	—	—	—	—
Valuation adjustment and discrepancy	S	.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	U	-.2	.5	.2	—	—	.2	.4	.2	—	.1	—	-.1	-.1	.2	—	—	—	—	—	—	—	1.4\1.2
Memoranda: Capital expenditures—private sectors	U	63.8	25.1	5.1	4.6	—	—	.1	.2	—	—	2.1	—	—	—	—	—	—	—	—	—	—	—
	U	—	1.6	.9	.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

For footnotes, see p. 119.

for residential construction, government transactions in land, and net sales of property out of the farm, nonfarm noncorporate, and financial sectors. The most important omissions are purchases and sales within the business sectors of existing industrial plant, existing commercial and rental housing real estate, and land for new industrial and commercial construction.

The "other goods and services" category is the largest nonfinancial transaction category and as the name implies, it covers all nonfinancial transactions not specifically covered by other categories. It includes all expenditures for construction and new and used equipment. In the private sectors, detail is shown on the part of the purchases of other goods and services that represents capital expenditures.

Capital expenditures for the various private sectors are principally in the "other goods and services" category, but also in real estate transfers. A summary of capital expenditures by private domestic sectors is presented below.

Sector	Type of capital goods
Consumer	New and existing nonfarm homes for owner-occupancy. Land costs and capital improvements on existing homes are included. Durable goods not classed as capital expenditures, but shown separately in statement.
Corporate and nonfarm noncorporate business	New plant; new and used equipment charged to capital account; new nonfarm housing for rental purposes (including land costs); changes in value of work in place on uncompleted structures as capital expenditures of construction industry.
Farm business	Construction—residential and operating structures; business purchases of new and used autos and trucks (net of trade-ins); new tractors and farm machinery; attachments and repair parts for tractors and machinery.
Banking	Minor amounts for construction and equipment.
Life insurance companies	Residential and commercial investment real estate; real estate held for company use.
Nonprofit organizations	New churches, schools, hospitals, social clubs and recreational facilities; hospital and school equipment.

Financial transaction categories. With respect to financial transactions, net changes are recorded in each sector statement for each type of financial instrument. In the transaction recapitulations, amounts outstanding as well as net changes are shown for practically all financial instruments, the major exception being corporate securities. Since available data do not always provide the appropriate net change for flow-of-funds purposes—net funds realized and net funds devoted, some entries in the flow-of-funds transaction categories reflect not only acquisition and sale of financial assets and liabilities but also bookkeeping revaluations. It has not been possible to eliminate such revaluations from each type of asset for each sector, and valuation adjustments are entered in the sources and uses statements to adjust for the inappropriate valuation bases.

The *currency and deposits* transaction account covers liabilities for and holdings of:

All deposits (other than interbank) at commercial and mutual savings banks in the continental United States

Deposits with the Postal Savings System

Government and foreign deposits at Federal Reserve Banks

All types of U. S. currency (mainly Federal Reserve notes and silver certificates) held outside of the banking system

Foreign currencies and deposits held by domestic sectors

The *Gold and Treasury Currency* transaction category consists primarily of monetary reserves in the form of gold and silver, and some other minor elements. The sectors engaged in the transaction are limited to the banking sector, the Federal Government, and the rest of the world.

Trade credit covers short- and intermediate-term debt owed to nonbank creditors and the corresponding assets of these creditors. In general, these are claims that arise in the course of the purchase and sale of goods and services.

Bank loans other than mortgages include all loans, except interbank loans and loans secured by real estate, extended by commercial banks and mutual savings banks in the continental United States and by Federal Reserve Banks.

Federal obligations include all of the securities issued by the Treasury and by Government corporations and credit agencies that are held outside the Federal Government sector. The category covers debt issued by the Treasury, debt issued by Government corporations and fully guaranteed by the Treasury, and debt issued by Government corporations but not guaranteed by the Treasury. It covers changes in Federal debt whether or not handled through the Treasurer's account. It covers debt issued for cash and debt issued as payment for a Government expenditure. It is thus broader in scope

than both the series on the public debt and the series on net cash borrowing. Its relation to these is given in reconciliation tables.

State and local obligations comprise the total estimated debt outstanding of State and local governments. No estimates are available on trade debts owed by State and local governments. The category covers loans as well as security issues; it includes all State and local debt held by State and local government trust and sinking funds.

The *corporate securities* transaction account consists of the net issues (issues less retirements) and net purchases (purchases less receipts from sales) of debt and equity securities of private corporations in domestic sectors—corporate business, banking, insurance and other investors—and corporations and governments in the rest of the world sector. Private placements as well as public issues are included. No detail on equity *vs.* debt holdings on the assets side has been estimated.

The security issues of several types of organizations in the private sectors are classified in the flow-of-funds miscellaneous financial transactions category rather than in the corporate securities category. See listing of contents of that category.

The *mortgage* transaction category covers all loans secured by mortgages and other liens on real estate—including those on farm, residential, and commercial properties—regardless of the purpose of the loan or the uses to which the proceeds are put.

The *miscellaneous financial transactions* category consists of all types of financial transactions not classified in the other financial categories. Its major components are:

Shares of credit unions and savings and loan associations

Customer credit and debit balances at security dealers

Federal Government nonmortgage loans to various sectors

Federal Government trust and deposit liabilities held by various sectors

Policy loans of life insurance companies

Securities issues of several types of organizations included in the private sectors such as Federal Land Banks, Federal Home Loan Banks, Federal Reserve Banks, the Exchange Stabilization Fund and farm cooperatives

Unidentified financial transactions of the rest of the world.

Sector coverage. The *consumer* sector comprises individuals in their capacity as members of households and the account measures the activities of natural persons and personal trusts.²⁸ Activities of nonprofit organizations, of self-

²⁸ Profit-sharing and welfare funds are also included, since adequate data to remove them are not available.

administered pension plans, and of individuals as proprietors of unincorporated businesses are not included: Lessorship of property is treated as a business activity.

The *corporate business* sector covers all private domestic corporations other than banks, insurance companies, investment companies, corporate farms, and some miscellaneous agricultural credit corporations.

The *nonfarm noncorporate business* sector covers all unincorporated businesses other than (a) farms, (b) mutual financial institutions such as savings banks and savings and loan associations, and (c) nonprofit institutions serving individuals—schools, religious organizations, and philanthropic groups. It includes mutual organizations engaged in production or commerce, such as farm marketing, purchasing and utility cooperatives, but not farm financial cooperatives (which are included in the other investors sector). Nonprofit organizations serving business, e.g., trade associations, are included. All lessorship of real property is treated as business activity in the flow-of-funds accounts and all noncorporate lessors are included in this sector. The activities of the business proprietor as a consumer are recorded in the consumer sector.

The *farm business* sector covers the business activities of all farm enterprises encompassed in the farm income statistics of the Department of Agriculture. It excludes most of the consumer activities of farm families—consumption expenditures and wage income—and nonfarm business income such as royalties and nonfarm rentals. Activities of farm cooperatives and nonfarm landlords of farm property are also excluded. (Financial cooperatives are in the other investors sector. All other cooperatives and the lessorship activity are in the nonfarm noncorporate business sector.) The activities of corporate farms are included. (Corporate farms are a relatively minor component, amounting to 6 per cent of sales in recent years.)

The *Federal Government* sector covers, with certain exceptions noted below, all departments and branches of the Government including all trust funds, deposit and other funds, and all Government corporations and credit agencies whether wholly or partially owned.

Certain instrumentalities of the Government are not included in this sector. They are:

(a) The Postal Savings System, The Exchange Stabilization Fund, the Board of Governors of the Federal Reserve System, and certain monetary accounts. All these funds and accounts are classified as part of the banking sector. (b) the District of Columbia is included in the account for State and local governments.

The sector account is on a consolidated basis so that transactions between components of the Federal sector are not shown.

All Government debt transactions and Government lending operations with the transactors outside the sector are shown separately. Government nonfinancial capital expenditures are not shown separately.

The *State and local government* sector comprises all State and local political subdivisions in the United States and its possessions and the government of the District of Columbia. It includes all departments, trust and sinking funds, corporations and enterprises (such as State liquor monopolies and municipally-owned utilities), and authorities (such as toll roads, port authorities) of all such governments and political subdivisions.

The sector account is a combined statement of consolidated accounts for each governmental unit. However, this consolidation is not complete with respect to debt and interest transactions between governmental units and their own sinking and trust funds.

Government construction (but not equipment) expenditures are shown as a memorandum line.

The *banking* sector is a grouping of all transactors in the economy which bear liability for currency and deposits or hold monetary reserves. The banking sector is shown as a consolidated account but separate tables are also presented for the 4 subsectors that make up the sector.

The 4 subsectors are: (1) all commercial banks in continental United States, (2) all mutual savings banks and the Postal Savings System, (3) Federal Reserve Banks, and (4) a subsector called Treasury monetary funds, which consists of the Exchange Stabilization Fund, the gold account, the silver account, and an account constructed from various Treasury data to record the currency liabilities of the Federal Government not elsewhere classified and the assets underlying these liabilities.

The *insurance companies* sector covers all domestic insurance companies, self-administered pension plans, and the insurance activities of fraternal orders. The sector account is a combination of the accounts of three subsectors which are also shown: (1) life insurance companies, (2) self-administered pension plans, (3) other insurance companies.

The life insurance companies subsector comprises the legal reserve life insurance companies whose income, expenses, and balance sheets are reported in the Life Volume of the annual *Spectator Insurance Year Book*.

The self-administered pension plans subsector consists of all private pension plans sponsored by employers for employees other than those plans administered by insurance companies.

The other insurance companies subsector consists principally of the fire, marine, casualty and surety companies whose incomes, expenses, and balance sheets are reported in *Spectator* volumes. In addition, hospitalization and health plans—Blue Cross, Blue Shield, and independent plans; the life in-

insurance activities of fraternal orders; and workmen's compensation programs administered by self-insurers—are included.

The account for the *other investors* sector is a combination of three subsector accounts, each of which is shown separately—(1) nonprofit organizations, (2) savings and loan associations, and (3) financial institutions not elsewhere classified.

The nonprofit organizations subsector comprises nonprofit private schools and hospitals, charitable and welfare organizations, religious organizations, labor unions, social and athletic clubs, foundations, and other nonprofit groups serving consumers.

The savings and loan associations subsector comprises all operating savings and loan associations, cooperative banks, and homestead associations reported in the Home Loan Bank Board publication, *Trends in the Savings and Loan Field*.

The financial institutions n.e.c. subsector is a residual group of miscellaneous financial institutions. The separate elements in the subsector have little in common with one another, but, in general, their activities are not of sufficient magnitude to warrant showing each type in a separate account.

The subsector covers the following groups:

- Credit unions
- Investment companies
- Banks in United States possessions
- Agencies of foreign banks in the United States
- Livestock loan companies
- Agricultural credit corporations
- Federal Land Banks beginning 1947
- National farm loan associations
- Production credit associations
- Joint stock land banks
- Federal Home Loan Banks beginning 1951

The *rest of the world* sector comprises the residents and governments of all countries outside the United States and its territories and possessions. It includes all international organizations (such as the United Nations, International Monetary Fund, and International Bank for Reconstruction and Development) and employees of these organizations who are not citizens of the United States. The definition of the rest of the world is approximately the same as in the U. S. balance of payments statement, though the classification and coverage of transactions are somewhat different.

b. Method of calculation. The flow-of-funds accounts were developed on the basis of available statistical series; no special direct compilations of new

data were made. However, extensive modification of existing series was required to make use of them in the accounts. These adjustments were mainly for the purpose of obtaining consistent definition and coverage of various series. Some of these adjustments were available in existing data, others had to be estimated on various bases. In some cases no data, even on an inadequate basis, were available and estimates were made on the basis of moving series, related data, residuals, or arbitrary allocations. In the course of this, many statistical sources were used: National Income Division, Securities and Exchange Commission, Federal Reserve Board, Comptroller of the Currency, Statistics of Income, various Treasury publications and series, insurance reports, many other government and private statistical publications. The data sources and calculating procedures used are described in detail in *The Flow of Funds in the United States, 1939-1953*.

In the process of calculation, results are checked internally and against other data and pertinent information. The comprehensive system of sector and transaction classification provides an important check. There are checks in the sector accounts in the comparison of sources and uses of funds estimated for each sector; there are also checks in the transaction accounts in the comparison of the various sector sources and uses recorded for each transaction category. The internal checks provided by such comprehensive cross-classification are more efficient than the comparison of sources and uses for single sectors constructed independently; it makes more difficult the inadvertent omission of a type of transaction from a sector account; it forces attention on both sides of any transaction; it prevents the apparent improvement of sector discrepancies that merely result in shifting the discrepancy elsewhere. The absence of discrepancy does not imply the absence of error. Low sector discrepancies are possible with serious errors in the sector accounts. The examination of both sector and transaction discrepancies provides a partial check against this possibility.

c. Presentation. The flow-of-funds accounts have been available up to now only in limited mimeographed circulation. A report presenting the sector accounts, transaction accounts (including tables of amounts outstanding for the financial transaction categories), the reconciliation tables, and descriptions of the contents, data sources, and calculation procedures for all the tables will be published this year by the Board of Governors of the Federal Reserve System. This first report will cover the years 1939-1953. Subsequently, it is planned to present summaries of the accounts regularly in the *Federal Reserve Bulletin*. Only annual data are now available for publication; ultimately, it is hoped that quarterly data will become available so that quarterly summaries may be prepared.

Since the system depends entirely upon sources over which there is no control, the timing of publication depends upon the timing of basic sources, and revisions depend upon revisions in basic sources. When regularly published on an annual basis, preliminary results for the whole system will probably lag the end of the calendar year by 5 or 6 months. More tentative results based on extrapolation, moving series, etc., could be produced earlier. No decisions have yet been made as to when or at what stage of firmness of estimates to publish the annual summaries. There are no present plans to publish regularly the full set of accounts.

d. *History.* The system has been in a state of development for several years and the form of the system has changed over time. In particular, the present system differs considerably from the structure of Professor Copeland's moneyflows accounts presented in *A Study of Moneyflows in the United States*. Professor Copeland's study covered 1936-1942. There is thus a 3-year overlap but no detailed comparison of the two in the period of overlap has been prepared.

The two structures, while basically the same kind of system, differ with respect to terminology, sectoring, transaction classification, transaction coverage, transaction timing, method of presentation, data sources, and method of estimation.

The major differences in sectoring and transaction classification and coverage are briefly indicated below.

The following sector accounts have identical coverage:

Flow-of-funds sectors	Copeland's moneyflows sectors
Consumer	Households
Farm business	Farms
Federal Government	Federal Government
State and local government	State and local governments
Banking	Banks and U. S. Monetary Funds
Rest of the world	Rest of the world

The following minor differences in grouping apply to the sectoring of insurance companies:

Flow-of-funds sectors	Copeland's moneyflows sectors
Life insurance companies subsector	Life insurance sector
Self-administered pension plans	Other insurance carriers sector
Other insurance companies subsector	

The business sectors differ considerably. The flow-of-funds corporate business and noncorporate business and other investors sectors taken together and the Copeland moneyflows "industrial corporations," "business proprietors, partnerships et al," and "security and realty firms et al" sectors taken together have the same coverage but there are rearrangements within them. For example, nonprofit organizations, a separate subsector of the flow-of-funds other investors sector, is in the Copeland moneyflows business proprietorships etc. sector. The other investors sector and the security and realty firms sector have overlapping coverage with respect to investment companies, savings and loan associations, national farm loan associations, production credit associations, credit unions, livestock loan companies, joint stock land banks, etc. All other private companies in Copeland's security and realty firms sector are in the flow-of-funds corporate and noncorporate business sectors.

The transaction categories in flow-of-funds and Copeland's moneyflows also differ in coverage and classification. In addition, there are sizable differences arising from differences in timing, sector allocation, data sources, and methods of calculation. Only the coverage and classification differences are indicated here.

The nonfinancial transaction categories in the two presentations are not too dissimilar.

Flow-of-funds transactions	Copeland's moneyflows transactions
Payroll	Gross cash payroll
Interest	Cash interest
Dividends	Cash dividends
Rents and royalties	Gross rents and royalties
Insurance premiums	Insurance premiums
Insurance benefits	Insurance benefits
Grants and donations	Public purpose payments
Taxes and renegotiations	Taxes collected
Tax refunds	Tax refunds
Net withdrawals by proprietors	Net owner takeouts
Real estate transfers	Net payments for real estate transfers
Other goods and services	{ Instalments to contractors
	{ Customer moneyflows

The flow-of-funds payroll and dividends categories differ in minor respects from the Copeland moneyflows categories. The flow-of-funds interest category includes Federal Reserve Board interest payments to the Treasury not in the Copeland moneyflows category and also differs with respect to timing. The flow-of-funds rents include farm rents to farm landlords not in the

Copeland moneyflows category and shows farm rents to nonfarm landlords on a gross basis whereas they are net of taxes and operating costs in Copeland.

Flow of funds treats dividends to policyholders under insurance benefits; Copeland's moneyflows nets them against insurance premiums. Flow of funds records employment taxes for various kinds of social insurance under insurance premiums; Copeland's moneyflows treats them under taxes. Flow of funds treats State unemployment trust funds' withdrawals and deposits in the Federal unemployment compensation fund as insurance premiums and benefit transactions between the Federal Government sector and State and local sector; Copeland's moneyflows treats the deposit under public purpose payments and the withdrawal as an insurance benefit payment from Federal Government to households. Flow of funds includes certain nontax receipts of government under other goods and services; Copeland's moneyflows includes them in taxes. The flow-of-funds real estate transfer category is on more of a gross basis than the corresponding Copeland moneyflows category.

There are more striking differences in the treatment of financial transaction categories. Flow of funds shows the sources or uses of funds associated with each transaction category separately in the sector accounts. Copeland's moneyflows shows only levels of individual financial assets and liabilities, combines them into a net loan fund balance, and shows the changes in this combined net loan funds balance as the only financial flow in the sector account.

Differences in coverage of the various financial categories in the two presentations are given below.

Flow of funds	Copeland's moneyflows
Currency and deposits	Currency and deposits
Gold stock and Treasury currency	{ Gold
Trade credit	{ Treasury currency
Federal obligations	{ Book credit
Bank loans other than mortgages	{ Federal obligations
Mortgages	{ Other loans and securities and other
State and local obligations	{ debts payable
Miscellaneous	{
Corporate securities	{ Corporate paid in capital

Currency and deposits are roughly the same but there are some important conceptual and statistical differences on the asset side of the account.

Copeland's moneyflows shows gold and Treasury currency in two separate accounts; flow of funds combines them in one account with enough detail

shown, however, to treat them separately. The coverage of both parts differs somewhat as between flow of funds and Copeland's moneyflows. With respect to Treasury currency, these differences result in corresponding differences in currency and deposits and Federal obligations.

There are differences between flow-of-funds trade credit and Copeland moneyflows book credit. Notes payable and notes receivable (including parts of nonbank consumer credit) and government advances and prepayments are included in the flow-of-funds trade credit account but are part of Copeland moneyflows other loans and securities and other debts payable account.

Federal obligations—the Copeland moneyflows category—includes currency items in public debt, which flow of funds shows in Treasury currency. Copeland moneyflows category includes privately owned interest in government corporations, which flow of funds includes in miscellaneous financial transactions.

The flow-of-funds corporate securities account includes both debt and equity issues. Copeland moneyflows corporate paid-in capital excludes debt issues which are in his other loans and securities and other debts payable account. In addition, Copeland moneyflows paid-in capital covers the equity issues of some institutions, e.g., shares in savings and loan associations classified as miscellaneous financial transactions in flow of funds.

All other financial instruments are covered in a single category—"other loans and securities (when referring to asset side) and other debts payable (when referring to the liability side)"—in Copeland moneyflows and are shown under four separate categories in flow of funds—that is, bank loans other than mortgages, State and local obligations, and miscellaneous financial transactions.

In addition to these differences in major transaction classifications, the flow-of-funds accounts show considerably more detail and sub-accounts within standard categories than is the case for Copeland's moneyflows.

4. SECURITIES AND EXCHANGE COMMISSION ESTIMATES OF INDIVIDUALS' SAVING

a. **Definition and coverage.** The SEC publishes annual and quarterly data on "Saving by Individuals in the United States."

The SEC describes individuals' saving as covering ". . . in addition to personal holdings . . . saving of unincorporated business, trust and pension funds and nonprofit institutions in the forms specified." In addition, the method of calculation results in the inclusion of the holdings of credit unions and miscellaneous agricultural credit organizations.

The SEC releases contain two concepts of saving.²⁹ The liquid saving of individuals comprises saving in the form of net increases in currency and bank deposits, saving and loan association shares, equity in private and government insurance, securities held by individuals as defined above, and net repayments of mortgage debt and other consumer debt by individuals. Separate series are presented for currency, demand deposits, and time and savings deposits as well as for four types of securities—U. S. savings bonds, other U. S. Government securities, State and local government securities, and corporate and other securities. The other SEC saving concept, total gross saving by individuals, consists of liquid saving plus gross saving in the form of nonfarm dwellings and other durable consumers' goods. For year-end dates data are also presented on levels of liquid assets and debts incorporated in liquid saving.

The series recorded involve certain nettings and consolidations. Thus bank loans to individuals (including noncorporate brokers and dealers) for the purpose of purchasing or carrying securities are netted against net acquisitions of securities in the calculation of saving through securities. So also saving through insurance is net of policy loans. The mortgage debt series represents debt owed to private institutions and the Federal Government on one-to-four-family nonfarm dwellings (Home Loan Bank Board series). Individuals' mortgage debt to other individuals secured by one-to-four-family nonfarm dwellings is not recorded either as a liability or an asset. Similarly, the other consumer debt series is the Federal Reserve series on total consumer credit less the amounts owed to individuals (noncorporate business and credit unions).

The calculation of the nonfarm dwelling series is based on the assumption that individuals (including noncorporate business) purchase all new construction of one-to-four-family nonfarm dwellings. Transfers of existing properties between individuals are not recorded, although an estimate of the net amount of properties transferred to nonindividuals is included in the nonfarm dwelling series. Construction of nonprofit institutions is also included in the item.

In addition to the omissions due to netting or consolidation there are certain other asset and liability transactions of individuals not recorded in the SEC data on saving by individuals. Noncorporate business tangible assets—plant and equipment and inventories—and their debts (other than those

²⁹ With the SEC release covering the fourth quarter of 1954, the form of the release was changed. The terminology "liquid saving" was changed to "change in net claims." A subtotal excluding equity in government insurance from "change in net claims" was shown separately. Since the release indicates that the changes in presentation are tentative, pending completion of the general review of savings estimates now in process, the "liquid saving" terminology has been used in this report.

already described) are the most important of these. Estimates for these business assets and liabilities are incorporated in another formulation of saving—SEC estimates of personal saving—which is described in the next section.

b. *Method of calculation.* Derivation of the SEC estimates of saving is described in detail in the publication *Individuals' Saving*.³⁰ Only a brief summary of methodology is presented here.

The cash and various security estimates are residuals obtained by deducting transactions of nonindividuals from an over-all measure for the whole economy. A wide variety of sources and estimating procedures are used to get the totals and the changes in holdings of nonindividuals.

Savings and loan association shares represent the liability of all operating savings and loan associations for private savings capital. Saving through private insurance consists of the assets of legal reserve life insurance companies and of fraternal orders exclusive of their loans to policyholders.³¹ Saving through government insurance funds—Social Security, U. S. Government and National Service Life Insurance, adjusted service certificates, railroad retirement and various government employee retirement funds—is also measured as change in assets of the funds less loans to policyholders. The nature of the mortgage and other consumer debt series has been indicated.

Saving through nonfarm dwellings is based on Commerce residential construction data—new nonfarm dwelling units and additions and alterations—adjusted to exclude construction of dwellings for 5 families or more (assumed to be corporate owned). Net acquisition of one-to-four-family nonfarm dwellings by financial institutions is based on balance sheet information on real estate holdings. Construction by nonprofit institutions, also included in saving through nonfarm dwellings, is obtained from Commerce construction data on private nonresidential building. Other durable consumer's goods is the durable goods component of the national income series on personal consumption expenditures.

Before publication of the estimates, certain procedures are followed to evaluate their reasonableness. For instance, a quarterly reconciliation table is prepared regularly (but not published) in order to compare with the Commerce estimates of personal saving. In addition, comparisons are made with the Treasury survey of Ownership of Government Securities. A sources and uses of corporate funds analysis is also examined in order to evaluate the reasonableness of the estimates of corporate securities. The various

³⁰ Irwin Friend with Vito Natrella, *Individuals' Saving*, Wiley and Sons, Inc., 1954. This publication describes methodology as of 1952.

³¹ Adjustments are made to remove assets allocable to foreign policyholders and for revaluation of assets.

components are checked against the movements of banking figures, government securities figures, housing figures, etc. Where it is found that there are significant differences in trends or levels, more intensified checks are made. Generally, the differences can be reconciled, while sometimes additional facts are discovered making changes necessary.

c. Presentation. Estimates of individuals' saving are available in the press release "Volume and Composition of Individuals' Saving" within three months after the close of the quarter except for fourth quarter data which require an additional two weeks. The release describes changes in the various components of individuals' saving. The estimates are also published in the SEC *Statistical Bulletin* as follows:

First quarter	July	Available during first
Second quarter	October	week of following
Third quarter	January	month.
Fourth quarter	April	

There are two stages of revisions in the estimates. Releases containing first, second, and third quarter data present revisions of estimates for the preceding quarter only, based on revised estimates of corporate holdings of cash and government securities and on semiannual banking data. The releases containing fourth quarter data present revised estimates for the preceding three or four years, based mainly on *Statistics of Income* data, but also *Spectator* insurance data and final securities offerings and retirements data.

No regular study of the size and direction of the revisions has been made by SEC. For the period 1942-1949, a period of high liquid saving, the estimates of cash holdings of corporations, prepared on the basis of the sample data, varied on the average about \$500 million from the total as obtained from *Statistics of Income*, representing less than 3 per cent of the level of corporate cash and deposits but about 15 per cent of the change in the level. The maximum error was about one billion dollars. The estimation of corporate holdings has been improved in recent years as a result of the initiation of the joint Quarterly Financial Reports program with the Federal Trade Commission.

d. History. Annual series are available for the years 1933 to date and quarterly data begin with the year 1942. Annual and quarterly data through 1952 are published in *Individuals' Saving*. This publication also contains for the years 1929-1932 estimates of saving by individuals comparable to the SEC series.

The annual series was first estimated by the Securities and Exchange Commission in 1936 and re-estimated in 1939 and 1941. The series which was produced in 1939 was published in Volume 3 of *Studies in Income and*

Wealth. Publication of the current series began in 1942. The quarterly series was first estimated in 1941 and published in 1942. The table of reconciliation with Commerce personal saving estimates was first estimated on a complete basis in 1947 and published in the 1947 *National Income Supplement* as Table 6. In subsequent years the reconciliation table has appeared as Table 6 of the July *Survey of Current Business* or the *National Income Supplement*.

Significant changes in definition and coverage and method of calculation. There have been a considerable number of changes in definition, concept, coverage and method of calculation since these estimates were first originated. The changes have been gradual over the nearly 20-year period involved. At the present time, the SEC no longer prepares or publishes estimates of corporate saving or government saving. Estimates of the nonliquid saving of farmers are now published only in the reconciliation table. These items were included in the various series prepared through 1941. In addition, at one time aggregates were prepared for both net and gross saving. The adjustment for depreciation is made only in the reconciliation table at the present time.

The present definition of liquid saving was developed at the time the series was first published on a regular quarterly basis (1942). Liquid saving was previously defined as the sum of cash and deposits, insurance, savings and loan associations and securities. At present, in addition to the above items, liquid saving includes net liquidation of debt or in other words represents what was previously defined as the change in net claims of individuals.

As regards methods of calculation, these have been improved considerably through the availability of additional information. The more important additional information includes current data on cash and security holdings of corporations, new data on foreign transactions, improved banking statistics permitting more accurate estimates, improved consumer credit statistics, and improved data on privately-placed securities. In addition, the treatment of float has been improved. The reconciliation table has also been greatly improved as the result of a better understanding of the concepts and as more data have become available.

Significant changes in form of presentation. One of the major changes in the form of presentation of the estimates of individuals' saving made since the series was originated has been the restriction of the estimates to total individuals' liquid saving and to gross saving. Beginning with the 1954 *National Income Supplement* the reconciliation table was shown in the form of components of personal saving table rather than as an actual reconciliation table.

5. SECURITIES AND EXCHANGE COMMISSION ESTIMATES OF PERSONAL SAVING

a. **Definition and coverage.** Table 6 of the *National Income Supplement* presents SEC estimates of personal saving. This table represents estimates of components of the personal saving concept derived from the personal sector account of the national income structure. Thus conceptually the coverage of the SEC estimates both as to transactors and transactions is the same as national income personal saving—that is, the net saving of the private noncorporate sectors of the economy.³²

The various groups whose saving is covered by personal saving consist of mutual life insurance companies, mutual savings banks, savings and loan associations, noncorporate business enterprises (farm and nonfarm), and the groups covered by the national income personal sector—that is, consumers, nonprofit institutions, private trust funds, and private pension, health and welfare funds. The components of personal saving consist of transactions in assets and liabilities of these groups. The particular assets and liabilities covered by personal saving are determined by the coverage of the two series which yield personal saving, that is, disposable personal income and personal consumption expenditures.

Presentations of the components of personal saving may vary in a number of respects. (1) Assets and liabilities owed and held within the private noncorporate area can be shown gross—that is, both as assets and as liabilities—or can be consolidated out. In the latter case assets will include only claims on groups outside the private noncorporate area—corporations (including corporate banks) and governments—and liabilities will include only debts owed to corporations and governments. (2) Debt incurred to finance a particular asset may be netted against the asset or both the asset and the debt may be shown gross. (3) The breakdown of components of personal saving may be presented in terms of type of instrument or in terms of the transactions of subgroups within the private noncorporate area. (4) Saving through financial assets and debts may be expressed as net changes or as gross flows, e.g., net repayment of mortgage debt or loans made and repayments.

The SEC presentation in Table 6, originally set up as a reconciliation between SEC liquid saving (described in Section 4) and Commerce personal saving, varies from item to item with respect to the first three of these alternatives. Some claims within the group are consolidated; some are shown gross. Some liabilities are netted against corresponding assets; some are shown gross. The organization of the presentation is a mixture of type of instrument and of segregation of transactions of subgroups. With respect to the fourth alternative, the Table 6 presentation is in terms of net changes.

³² See discussion in Section 1 above.

The forms of saving recorded in Table 6 are grouped under four headings as follows:

- (a) Personal saving in forms other than changes in equity in real property and unincorporated enterprises
- (b) Increase in equity in nonfarm residences and in real property of nonprofit institutions
- (c) Increase in equity in nonfarm unincorporated enterprises
- (d) Increase in equity in farm enterprises.

The items grouped under (a) are taken from the SEC estimates of individuals' liquid saving and consist of currency and bank deposits, savings and loan association shares, private insurance, securities, and net repayment of other consumer debt.³³

The SEC estimates of individuals' liquid saving are described in Section 4 above. In summary they represent claims of individuals—noncorporate business, trust and pension funds, nonprofit institutions, credit unions, miscellaneous agricultural credit organizations, and consumers—against nonindividuals and certain debts of individuals owed to nonindividuals. Nonindividuals include not only corporations and governments but also mutual life insurance companies, mutual savings banks, and savings and loan associations. Thus the asset items grouped under (a) represent not only claims against corporations and governments but claims against mutual financial intermediaries—e.g., saving and loan shares, deposits at mutual banks, policyholders' equity in mutual life insurance companies. So also other consumer debt and the debt items included under groups (b), (c), and (d) include debt owed to mutual financial intermediaries.

This treatment results in the omission of the net saving of mutual savings banks and savings and loan associations although this saving is part of personal saving derived from the income account. The net saving of mutual life insurance companies is covered, however, in the private insurance item.

Claims and debts within the individuals' area are not recorded—e.g., mortgage debt owed by one individual to another; consumer credit owed to noncorporate business, credit unions, and other consumers; credit and debit balances at noncorporate brokers and dealers; credit union shares.

Certain debts are netted against certain assets. Bank loans to individuals (including noncorporate brokers and dealers) for the purpose of purchasing or carrying securities are netted against net acquisitions of securities. Saving

³³ The Table 6 version of securities excludes armed forces leave bonds and thus differs from the securities series included in liquid saving. Saving through government insurance, included in liquid saving, is omitted from Table 6. Both these differences stem from the nature of the personal saving concept derived from the income account.

through insurance is net of policy loans. Other consumer debt, which arises mainly in connection with current account transactions not part of personal saving, is deducted from all the assets listed under group (a).

The items grouped under (b) consist of nonfarm dwellings as recorded in SEC "total gross saving,"* repayment of mortgage debt as recorded in SEC liquid saving, less depreciation on nonfarm dwellings and real property of nonprofit institutions.³⁴ The nature of the nonfarm dwellings and the mortgage debt items is described in Section 4. The estimates of depreciation on nonfarm dwellings—the bulk of the depreciation charges—represent depreciation of stocks valued at original cost at a rate of 2 per cent a year. Estimates for accidental damage to fixed capital are included.

It should be noted that only increase in equity in real property of nonprofit institutions is covered in this group. The cash and security transactions of such institutions are included in group (a) with the transactions of other individuals.

The items grouped under (c) are net increase in inventories, new construction and producers' durable equipment, less the sum of increase in debt to banks and insurance companies, increase in net payables to corporations other than banks and insurance companies, and depreciation for noncorporate business.

New construction and producers' durable equipment includes purchases of used equipment from the United States Government; however, transfers of existing plant and equipment between noncorporate enterprises or between noncorporate enterprises and corporations are not recorded. No purchases of residential properties are included. Any purchases of one- to four-family nonfarm dwellings by noncorporate enterprises are covered under group (b).

Debt to banks and insurance companies consists of estimates of commercial and industrial bank loans and mortgage debt secured by commercial properties. Bank loans to noncorporate brokers and dealers for the purpose of purchasing or carrying securities are not included since they are netted against security purchases under group (a) above. Mortgage debt owed by noncorporate enterprises and secured by one- to four-family nonfarm dwellings is included under group (b). All mortgage debt secured by dwellings of five units or more is assumed to be owed and owned by corporations. Commercial mortgage debt owed by noncorporate enterprises to other individuals is not recorded in Table 6 either as a liability or an asset.

Increase in net payables to corporations other than banks and insurance companies consists of estimates of increase in noncorporate payables to such corporations less increase in noncorporate receivables from such corporations.

* In Table 6 new construction by nonprofit institutions is shown separately.

Since other consumer debt under group (a) excludes debt owed to noncorporate enterprises, the corresponding noncorporate receivables from consumers are not recorded under group (c). Other debt transactions between noncorporate enterprises and other individuals are also omitted in Table 6, e.g., credit and debit balances at security brokers.

The depreciation estimates represent depreciation of stocks valued at original cost. Estimates for accidental damage to fixed capital are included.

Since financial assets of noncorporate enterprises are included under (a) and since transactions between noncorporate enterprises and other individuals are not recorded, the equity concept under (c) is not a complete measure but represents increase in equity in the specified assets and liabilities only.

The items grouped under (d) for farm enterprises are net increase in inventories, new construction and producers' durable equipment, net purchases of farms from corporations and financial institutions less the sum of increase in mortgage debt, increase in other debt, and depreciation.

Farm residences are included in the new construction item and debt on these residences in the mortgage debt item.

Crop loans by the CCC, both direct and guaranteed, are excluded from other debt. The crop is treated as sold to the government for the proceeds of the loan and repayment is considered a repurchase by the farmer.

Depreciation represents estimates of depreciation of capital valued at current prices rather than at original cost.

As with nonfarm unincorporated businesses the equity concept measures equity in the specified assets and liabilities only.

b. Method of calculation. Derivation of the SEC estimates of personal saving is described in the publication *Individuals' Saving*. A brief summary of methodology in connection with the SEC liquid saving and gross saving series which enter the SEC personal saving calculation is given in Section 4 above. A few notes are supplied here concerning the remaining components of SEC personal saving.

Data on nonfarm inventory change and on nonfarm depreciation are estimates of the Department of Commerce and the similar farm series are from the Department of Agriculture. The nonfarm inventory change component incorporates the Department of Commerce's adjustment for inventory profit or loss.

For recent years the new construction and durable equipment series for nonfarm unincorporated enterprises is an allocation of the SEC-Commerce series adjusted to include business use of passenger cars. Estimates for other years are based on Federal Reserve estimates. Farm purchases of new construction and durable equipment are Department of Commerce estimates.

Nonmortgage debt to banks owed by nonfarm noncorporate enterprises is an allocation of commercial and industrial loans of commercial banks. Mortgage debt owed by these enterprises is based on Department of Commerce data on public and private debt.

The series on nonfarm noncorporate net payables to corporations other than banks and insurance companies is based on corporate balance sheet data from the *Statistics of Income*. The series on corporate notes and accounts receivable and payable were adjusted to remove inappropriate elements such as receivables due from government and consumers.

The farm debt series are estimates of the Department of Agriculture.

c. **Presentation.** SEC estimates of personal saving for the preceding year are presented in Table 6 of the July issue of the *Survey of Current Business* (or the *National Income Supplement*, if one is published).

d. **History.** Annual series are available for the years 1933 to date from *National Income* 1954 edition. Comparable estimates for the years 1929-1932 are published in *Individuals' Saving*.

For a discussion of historical changes, see Section 4-d.

6. DATA ON CONSUMER SAVING AND ON ASSETS AND LIABILITIES FROM THE SURVEY OF CONSUMER FINANCES

a. **Definition and coverage.** The Survey of Consumer Finances conducted by the Survey Research Center of the University of Michigan for the Board of Governors of the Federal Reserve System provides a variety of information on consumer spending units—demographic characteristics; income; expenditures for durable goods and housing; transactions in financial assets and debts; ownership of various assets; amounts of debt owed; net worth; buying plans; and attitudes on economic matters; and many cross-classifications between these variables. Certain kinds of information are collected each year while other data are obtained at less frequent intervals.

In the surveys conducted in the years 1947 through 1951 information was obtained on changes in a fairly comprehensive list of assets and liabilities which were combined to yield estimates of consumer saving for the preceding year. In the surveys conducted in the years 1946 and 1952 to date, information was collected for a more limited list of assets and liabilities and no compilation of saving was made. The estimates of consumer saving and various asset and liability items, or combinations thereof, can be related to other information obtained in the survey. Thus analysis of distribution of saving and of particular assets or liabilities by various characteristics such as income, age, and family composition is possible.

The survey covers that part of the population of the United States residing

in private households.³⁵ The basic unit whose characteristics are measured in the survey is the "consumer spending unit." This unit is defined as comprising all persons living in the same dwelling and related by blood, marriage or adoption who pool their incomes for major expenses. Children over 18 years of age and other relatives who earn more than \$15 a week but who do not pool their incomes are called related secondary spending units. Persons in the dwelling not related to members of the primary spending unit are designated as unrelated secondary spending units.

Some information is also presented on a family unit basis in which case the family unit is defined as all persons living in the same dwelling who are related by blood, marriage or adoption. The number of family units is equal to the number of primary spending units plus the number of unrelated secondary spending units. Data for family units represent a combination of the information obtained from spending units.

Transactions in assets and liabilities covered by the various surveys are summarized in Table 2 under 5 headings—liquid assets, short-term consumer debt, nonfarm unincorporated business saving, contractual saving, and miscellaneous. Information was not obtained from consumer spending units in this form. Rather respondents were questioned in detail about their assets and debts—some 50 to 60 questions in some years.

Because of the great influence that the specific form of the questions has on the contents of series from the survey, because of changes in coverage and form of questions, and because of ambiguities in some questions, an accurate, simple definition of saving as reported in the survey is not possible. Broadly speaking, the surveys with the widest scope in the saving area—those conducted in 1947 through 1951—covered saving and dissaving in the following forms: various types of liquid assets; consumer nonmortgage debt; nonfarm unincorporated business—saving through retained profits and new investment and dissaving through net loss and liquidation of equity; contractual payments—life insurance premiums, payments to retirement plans, and regular amortization of mortgages; net purchases of real estate, net of debt incurred at time of purchase and debt retired at time of sale; additions to houses less debt incurred; purchase of farm machinery less debt incurred; securities other than U. S. Government bonds; loans extended to other individuals. Receipts from lump-sum insurance settlements and from gifts or inheritances were deducted from saving through the above listed forms in arriving at totals of saving. Even in the years of widest coverage some components of saving and

³⁵ The portion of the population excluded from coverage includes members of the armed forces or other persons living on military reservations; residents in hospitals, penal, educational, religious or other institutions; and residents in hotels, large boarding houses and tourist camps.

TABLE 2

COVERAGE OF SAVING DATA IN SURVEYS OF CONSUMER FINANCES, 1946-55.

[By year Survey was conducted]

Components	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955
Consumer saving.....	-	x	x	x	x	x	-	-	-	-
Change in liquid asset holdings (increase, +; decrease, -):										
Total holdings.....	x	x	x	x	x	x	x	(1)	-	x
U. S. Government bonds.....	x	x	x	x	x	x	x	-	-	x
Checking accounts.....	x	x	x	x	x	x	x	-	-	x
Savings accounts ²	x	x	x	x	x	x	x	-	-	x
Change in short-term consumer debt (increase, -; decrease, +):										
Total debt.....	-	x	x	x	x	x	(1)	-	-	-
Automobile debt.....	-	x	x	x	x	x	-	-	-	-
Debt on purchases of other goods.....	-	x	x	x	x	x	-	-	-	-
Other personal debt ⁴	-	x	x	x	x	x	-	-	-	-
Nonfarm unincorporated business saving:										
Profit left in (+) or net loss (-).....	-	x	x	x	x	x	x	x	-	x
New investment (+) or liquidation (-).....	-	x	x	x	x	x	x	x	-	-
Contractual payments:										
Retirement funds (excluding OASI).....	x	{	x	x	x	x	x	-	x	-
Life insurance premiums.....	x	{	x	x	x	x	x	x	x	-
Mortgage payments:										
Total.....	-	x	x	x	x	x	-	-	x	x
On principal.....	-	-	x	x	x	x	x	-	-	-
Miscellaneous forms of saving:										
Nonfarm house purchase less debt incurred (+).....			{	x	x	x	x	x	x	x
Farm purchase less debt incurred (+).....			{	x	x	x	x	-	-	x
Other real estate purchases less debt incurred (+).....	x	x	{	x	x	x	x	-	-	-
Sales of houses and other real estate less debt retired (-).....			{	x	x	x	x	-	-	-
Additions to houses (+) ⁵	-	x	{	x	x	x	x	x	x	x
Farm machinery less debt incurred (+).....	-	x	{	x	x	x	x	-	-	-
Change in ownership of securities other than U. S. Government bonds (increase, +; decrease, -).....	-	x	{	x	x	x	x	-	-	-
Change in loans to other individuals (loans made, +; repayments received, -).....	-	x	{	x	x	x	-	-	-	-
Lump sum insurance settlements (-).....	-	x	{	x	x	x	x	-	-	-
Gifts or inheritances received (-).....	-	x	{	x	x	x	x	{	-	-

x Covered.

- Not covered.

¹ Can be obtained from about one-half of the sample which was reinterviewed.

² Includes accounts with banks, building and loan associations, postal savings, and credit unions, except in the 1949 Survey when accounts with credit unions were omitted.

³ Can be obtained from two general questions on amounts borrowed and amounts repaid.

⁴ Includes debts to individuals.

⁵ Includes only estimated improvements; expenditures on repairs and maintenance are excluded. Covers farm and nonfarm houses and for years 1947-51 also includes additions to farm buildings.

some elements needed for calculation of net saving were not covered in the survey, e.g. personal currency holdings and depreciation allowances on non-farm nonbusiness and farm real estate.

A precise discussion of definition of the various forms of saving covered in the survey requires detailed consideration of the numerous questions asked

in the survey. For this report a description is given of each of the various types of saving collected in the 1951 survey (the last survey yielding a fairly comprehensive saving figure) with notations of significant differences in form of data collected in other surveys.

Liquid assets as covered in the survey consist of U. S. Government securities, checking accounts, saving accounts at banks and the Postal Savings System, and shares in savings and loan associations and credit unions. Currency is not included. Liquid asset holdings of unincorporated businesses are included only to the extent that they cannot be separated from personal holdings by the respondent businessman. Data from the 1949 survey exclude credit union shares.

In general the questions on liquid assets provide data on stocks of assets, not purchases and sales. Saving is derived as the difference in the spending unit's stock of assets at interview time and a year earlier. The questionnaire for the 1951 survey will serve as an example of the amount of detail obtained.

Respondents were asked about incidence of ownership as of interview date of five different kinds of liquid assets—Series A-F of U. S. savings bonds; U. S. Government bonds paying interest currently; savings accounts in banks; deposits at savings and loan associations, credit unions, and the PSS; checking accounts at banks. If respondent reported ownership, information was obtained on amounts owned as of interview date and a year earlier. If respondents reported no ownership, specific inquiry was made as to holding a year earlier except in the case of U. S. Government bonds paying interest currently. Although separate questions were asked concerning incidence of ownership of savings accounts at banks and at other institutions, information on amounts owned at each type of institution was not obtained separately. Data for series A-F bonds was obtained in a somewhat different form from other liquid assets in that amounts purchased and cashed during 1950 were obtained.

The liquid asset questions for the surveys conducted before 1951 were very similar to those contained in the 1951 schedule. The major difference was that for the surveys conducted in 1947, 1948, and 1949 amounts of savings accounts at banks were ascertained separately from those at other institutions.

The questionnaire used in the 1952 survey contained several changes in the section on liquid assets. Holdings of the various assets were obtained as of beginning of the year (1952 and 1951) and a year earlier rather than as of interview date and a year earlier. The question on U. S. Government bonds paying interest currently was reworded to cover ownership at any time during 1951. Savings accounts in banks were ascertained separately from those at other institutions.

The surveys conducted in the years 1953 and 1954 collected data on holdings of liquid assets as of one date only (interview date). Hence it was not possible

to calculate saving in the form of net changes in liquid assets for individual spending units. Considerable emphasis was placed on obtaining holdings of all members of the spending unit and thus separate columns were provided on the schedule for head, wife, and others as contrasted with earlier years where the schedule provided only one space to enter holdings of the entire spending unit. This more careful coverage may have produced discontinuities with previous years. Amounts of savings accounts were obtained separately for banks, savings and loan associations, credit unions, and postal savings.

The survey conducted in 1955 provides a figure for saving through liquid assets, but the manner of derivation differed from earlier years in that change in assets was ascertained directly from respondents rather than derived as the difference in amounts held. Information on holdings as of interview date was obtained in the same detail as in 1953 and 1954. If respondents reported ownership as of interview date, inquiry was made as to change from a year ago. If no ownership was reported as of interview date, specific inquiry was made as to holdings a year earlier. Separate inquiry concerning change was made for Government bonds, checking accounts, and savings accounts.

Consumer debt conceptually covers debts on cars and other durables and other nonmortgage personal loans. Business loans are excluded.³⁶

In some years net debt incurred in connection with repair and improvement of houses was not specifically ascertained and may have been recorded as consumer debt. In other years when such debt was specifically obtained it was netted against additions to houses in the "miscellaneous" category. In each year repayments of debt on additions to houses incurred before the covered year are included in the consumer debt category.

Repayments of debt on farm machinery incurred before the covered year are included in the consumer debt category, although the net amount of such debt incurred during the covered year is netted against purchases of machinery in the "miscellaneous" category. In some years repayments of mortgage debt on real estate other than owner-occupied homes were not specifically ascertained and may have been recorded as consumer debt.

In the 1951 survey questions on changes in consumer debt were not asked as a separate section or directly. Information on consumer debt was based on questions in the automobile section, the "other durable goods" section, and several omnibus questions in a miscellaneous group at the end of the questionnaire. Direct information on amount of borrowing on cars and other

³⁶ The consumer debt data from the survey are described as covering personal debt only. Since it is not obvious from the questionnaire that business borrowing was not covered in the "omnibus" questions, it is not clear whether such borrowing was eliminated in the interviewing or the editing process or whether the description is improper. In later years (beginning with the 1952 survey) specific questions were asked as to inclusion of business debts.

durables was not obtained. Rather questions concerning purchase price, trade-in, and cash down-payment were asked and amount of debt incurred was calculated as purchase price less trade-in and cash down-payment. Specific questions were asked on amount of repayment during 1950 of debts incurred during 1950 on cars and other durables.

The series of "omnibus questions" on consumer debt began with the inquiry "Did you owe any money at the end of 1950 that we haven't mentioned, for example, on a loan or on something you had bought?" If respondent reported such a debt, inquiry was then made as to whether the debt was incurred during 1950, and, if so, the purpose of the loan, the amount borrowed, and the amount still outstanding at the end of 1950. The types of debt already "mentioned" at this point in the interview consisted of borrowing in connection with autos, other durables, farm machinery, real estate, charge accounts, and repairs, upkeep or additions to homes.³⁷

Finally two questions dealt with repayment during 1950 of "old loans" . . . or "things you bought before 1950." Since the only other question on the schedule treating payments on debt incurred before 1950 was a question directed at mortgage payments on owner-occupied homes, these questions presumably covered all other repayments on debts incurred before 1950. Thus mortgage payments on "other real estate" may have been included since there was no provision for them elsewhere in the questionnaire. Moreover, repayments of debt on farm machinery, and on repairs, upkeep, etc., on homes were presumably entered here and are therefore included in the "consumer debt" category although purchases of these items and net debt incurred during 1950 are included in the "miscellaneous category."

The questionnaires for the surveys conducted in the years 1947 through 1950 contained essentially the same questions on debt incurred on cars and other durables as the 1951 schedule. There were differences, however, in the other debt questions. Basically one set of questions was used for the 1947, 1948 and 1949 surveys; a change occurred in 1950, and a further change in 1951.

For the 1947-1949 surveys, questions were asked about net debt incurred on instalment purchases other than cars and other durables (including farm machinery) and about repayment of any instalment debt incurred before the covered year. Another set of questions dealt with loans from banks, credit unions, loan companies, and other individuals and loans on insurance policies. Since debt in connection with repair and improvement of homes was not

³⁷ Borrowing on farm machinery, real estate, and for repairs, upkeep, etc. on homes is covered in the "miscellaneous" category in the 1951 survey. Net changes in charge accounts were not covered in the saving data, although data on amounts owed as of interview date were obtained.

specifically ascertained, respondents may have reported this debt along with loans or "other" instalment debt. On the 1947 and 1948 questionnaires mortgage repayments on "other real estate" were reported with mortgage repayments on owner-occupied homes and did not enter the consumer debt calculation. In the 1949 survey these repayments were not reported with mortgage repayments on homes and may have been reported with nonmortgage debt.

For the 1950 survey respondents were asked a set of questions about debts of the following kinds: instalment purchases during 1949 ("for example on sporting goods, clothing or jewelry"); anything bought before 1949; loans by banks, loan companies or private individuals; loans on insurance policies. In addition a "catch-all" question was asked concerning "any money (owed) at the end of 1949 that we haven't mentioned." Debt in connection with home repairs was specifically asked in the 1950 survey so that net new debt incurred during 1949 did not enter the consumer debt calculation; however, as in other years, repayment on such old debt may have been recorded as consumer debt. Mortgage repayments on "other real estate" were obtained separately and did not enter the consumer debt figures.

In summary, with the exception of home repair debt, respondents were questioned in greater detail about their nonmortgage debts in the 1947-1950 surveys than in the 1951 survey.

Beginning with the 1952 survey emphasis was placed on obtaining debts outstanding. Except in the 1952 survey, which contained two over-all questions on amounts borrowed and amounts repaid, data on net change in nonmortgage debt were not obtained from individual spending units from 1952 on.

Nonfarm unincorporated business saving is defined as profits left in non-farm unincorporated business plus personal investment in such enterprises minus losses and withdrawals of equity from such businesses.

The schedule for the 1951 survey contained questions directed at net income from unincorporated business enterprises and saving through such enterprises. Respondent businessmen were asked the following questions:

How much did you take out from your business in 1950, including any salary you paid yourself?

Did you make any profit in 1950 that you left in the business? (Yes or no).

If yes. How much?

If no. Was all the money you took out salary or profits, or did you show a loss or what?

If loss. How much did you lose? Did you figure that loss before taking out your salary or after?

Not counting profits and salary, did you take out any money by selling the business or liquidating part of it? (Yes or no).

If yes. How much did you receive in 1950?

Then of the money you took out from the business in 1950 _____ was profits and salary and _____ was from the sale (or liquidation), is that right?

In 1950, did you put any new money into the business (besides the profit you may have left in) by enlarging your business investment or investing in a new business? (Yes or no).

If yes. How much new money of your own did you put in? ⁸⁸

The schedules for the surveys conducted in the years 1947 through 1950 were less detailed, but the questions were of the same general nature. The 1952 schedule was the same as in 1951. The 1953 schedule contained about the same set of questions as the 1951 and 1952 schedules, although the questions were worded differently. In addition the 1953 questionnaire included several questions on business debts designed to determine respondent's treatment of debt repayment in the calculation of net income.

The 1954 survey ascertained only total net income while the 1955 survey obtained total net income and retained profits.

The farm questionnaires in 1947, 1948 and 1949 did not include the questions on nonfarm unincorporated enterprises. Tabulations of the 1952 survey indicated that less than one per cent of the survey population consisted of farm operators who invested or disinvested in an unincorporated business other than their farms.

Contractual saving consists of payments to retirement funds (other than OASI), total life insurance premiums, and regular amortized payments on mortgage principal.

The 1951 questionnaire contained questions on total payments to retirement funds, exclusive of OASI; total life insurance premiums; and mortgage payments, both total payments and payments on principal, on owner-occupied homes. The question on life insurance premiums was worded as follows: How much did you put into life insurance payments (premiums) altogether (entire spending unit) during 1950? It is not clear from this question whether premiums are gross or net of policy dividends; moreover, the question seems broad enough to cover insurance premiums without any saving element—i.e. term insurance. In the editing process any mortgage payments which were apparently large-scale prepayments were removed to the "miscellaneous"

⁸⁸ Farm business saving was not obtained in this manner. No attempt was made to separate transactions of the farm business from those of the farm household so that farm business transactions are included in the various items presented in Table 2. Complete farm business saving was never obtained, however, as information was not collected on farm inventories or depreciation allowances.

category. Mortgage payments on real estate other than owner-occupied homes did not enter this category, but may have been reported with nonmortgage debt. (See above discussion of consumer debt.)

Although contractual saving was not calculated as such prior to the 1948 survey it is convenient to discuss its components for all survey years. In the surveys conducted prior to 1951 payments to retirement funds and life insurance premiums were ascertained from questions similar to those contained in the 1951 schedule. However, there were a number of differences with respect to mortgage payments. For the 1947 survey one figure was obtained on mortgage payments covering both owner-occupied and other real estate, and inclusive of principal payments, interest, and other charges. Moreover, payments on mortgages retired in connection with sale of properties were included. For the 1948 survey an attempt was made to distinguish payments on principal. The mortgage payment questions on the 1949 schedule were confined to home owners and distinguished payments on principal. Mortgage payments on other real estate were not ascertained as such and may have been reported as nonmortgage debt. Mortgages retired in connection with sale of property were reported separately and were entered in the "miscellaneous" category. The 1950 schedule was similar to the 1949 schedule except that mortgage payments on other real estate were obtained.

The surveys conducted in 1952 and 1954 obtained payments to retirement funds, exclusive of OASI, and life insurance premiums. The 1953 survey inquired about life insurance premiums, but not retirement funds, and the 1955 survey obtained neither. With respect to mortgage payments the 1952 survey yielded data on principal payments of home owners while the 1954 and 1955 surveys yielded data on total mortgage payments of home owners.

Miscellaneous forms of saving.

As may be seen from Table 2 this category consists of a variety of forms of saving and dissaving: purchases of real estate net of debt incurred at time of purchase and sales of real estate net of debt retired at time of sale; additions to houses less (in some years) debt incurred; purchase of farm machinery less debt incurred; net change in holdings of securities other than U. S. Government bonds; net change in loans extended to other individuals. Receipts from lump sum insurance settlements and from gifts or inheritances were offset against net saving in these forms. These various forms of saving and dissaving and the offsets against saving are discussed in turn.

Real estate transactions. The real estate questions on the 1951 schedule dealt separately with purchases of owner-occupied homes and of other real estate. For owner-occupied properties, both nonfarm and farm, information was obtained on purchase price and gross amount of borrowing and saving

was calculated as purchase price less gross borrowing. For other real estate only the amount of "own money" invested was obtained. With respect to sales of properties, no distinction was made between owner-occupied and other properties. The survey ascertained sales price and cash received from the sale after deducting debt outstanding and selling expenses. Cash received entered the saving calculation as a negative item.

The surveys conducted in the years 1948, 1949, and 1950 contained essentially the same set of questions concerning purchase of owner-occupied homes as the 1951 survey. For other real estate, however, the questions varied: in 1948 and 1950 purchase price and amount of mortgage was obtained; in 1949, amount of mortgage and cash down payment. The questions on sales of properties also differed from the 1951 survey in that in addition to sales price, the amounts of mortgage extended to the buyer, and of mortgage outstanding at time of sale were ascertained.

The 1947 survey lumped purchases of owner-occupied homes and other real estate. Purchase price and amount of mortgage incurred were obtained. The question on sale of properties inquired about "price minus the amount the buyer still owed you." As has been noted above in connection with contractual payments, mortgages retired in connection with sales of properties were reported with regular mortgage payments.

The 1952 schedule contained essentially the same set of questions as the 1951 schedule. The surveys conducted in 1953 and 1954 were limited to purchases of nonfarm owner-occupied homes. Debt outstanding as of interview date was also obtained. The 1955 survey covered purchases of both nonfarm and farm owner-occupied properties, including debt outstanding as of interview date.

Additions to houses. For the 1951 survey information for this form of saving was obtained through the following questions:

Nonfarm. Did you have any expenses at all for repairs, upkeep or additions to the house in 1950?

Farm. Did you build any new buildings or did you have any expenses for repairs, upkeep or alterations to your farm buildings or your house in 1950?

(If yes) For what?

How much did you spend for (each type of repair, addition, etc.)?

The editing process eliminated expenditures on repairs and upkeep so that only capital improvements entered the saving calculation. Net debt incurred was obtained for each expenditure over \$100 and was offset against expenditures on improvements. As was noted in the section on consumer debt,

repayments of debt incurred before 1950 probably entered the consumer debt calculation.

The surveys conducted in the years 1947 through 1950 contained essentially the same questions as in 1951 except that net debt incurred was specifically obtained only in 1950. In other years it may have been reported with consumer debt. (See above discussion of consumer debt.)

The 1952 survey ascertained only amount of "own money" spent for repairs, upkeep, etc. Moreover, the farm question was limited to farm homes.

The 1953 survey returned to essentially the same set of questions used in the 1951 survey except that net debt incurred was obtained for all expenditures reported and the farm question was limited to farm houses.

The 1954 and 1955 questionnaires inquired about expenses and debt incurred with more emphasis on the debt aspect than in other surveys—e.g., amount and frequency of payment. The farm question was limited to farm houses.

Purchase of farm machinery less debt incurred. The 1951 schedule contained questions on the cost of the machinery, amount of down payment (if debt was incurred), and amount of debt repaid during 1950. The cost of the machinery or, if debt was incurred, the amount of cash down payment plus repayments entered the miscellaneous saving calculations as a positive item. As was noted in the section on consumer debt, repayments of debt incurred before 1950 probably entered the consumer debt calculation.

The surveys conducted in 1947 through 1950 contained the same set of questions. The 1952 questionnaire differed only by the omission of the question on repayments during 1951.

Net change in holdings of securities other than U. S. Government bonds. The 1951 survey ascertained this form of saving through the following questions:

Did you buy or sell any stocks or bonds in any corporation in 1950?

(If yes) We're interested in whether you put new money into stocks and bonds or took money out, looking at the year as a whole. About what was the net difference between the amount you paid for the securities bought last year and the amount you received for securities sold?

Purchases greater than sales (or purchase only) (net new money into securities) _____

Sales greater than purchases (or sales only) (net withdrawals from security holdings) _____

Thus the 1951 schedule contained no specific questions on State and local or foreign securities.

The surveys conducted before 1951 differed from the 1951 survey with respect to the types of securities covered, although the "saving" question was essentially the same—i.e., the net difference between amount paid and amount received. Thus, in the 1947 and 1948 surveys respondents were asked about ownership of corporate stock and of State, municipal, or corporate bonds, and then about their transactions, presumably in these securities. In 1949 the ownership questions dealt with stock "sold to the general public" and "bonds other than U. S. Government . . . State, municipal, corporation or foreign." In the 1950 survey respondents were asked about ownership of corporate stock and then "Did you buy or sell or dispose of any stocks or bonds in 1949? I mean not counting U. S. Government bonds?"

The 1952 schedule contained essentially the same questions as the 1951 schedule. The surveys after 1952 contained no questions on these types of security transactions.

Net change in loans extended to other individuals. The 1951 survey ascertained this form of saving through the following questions:

Did you lend any one any money in 1950, for instance, on a mortgage or a note or a personal loan?

(If yes) How much did you lend?

In 1950, did any one pay back money they had borrowed from you?

(If yes) How much was that?

The excess of money lent over repayments received entered miscellaneous saving as a positive item.

The schedules for the years before 1951 contained similar questions except that in 1947, 1948 and 1949 the question on lending was limited to "any money."

Any overlap with mortgages extended in connection with sales of properties was presumably eliminated in editing.

Lump sum insurance settlements. The 1951 survey ascertained this offset to saving through the following question:

In 1950 did you (respondent and spending unit) cash in any life insurance or did any life insurance company make a lump sum payment to you?

(If yes) How much did you receive?

The amount entered the calculation of miscellaneous saving as a negative item.

The schedules for the years before 1951 contained a similar question except that in 1947, 1948 and 1949 the question did not refer specifically to life insurance.

The 1952 schedule contained one question covering both gifts and inheritances and insurance settlements.

Gifts or inheritances received. The 1951 survey ascertained this offset to saving through the following question:

In 1950 did you (respondent and spending unit) inherit any money or government bonds, or did you receive any large gifts of money or bonds?
(If yes) How much?

This amount entered the miscellaneous saving category as a negative item.

The surveys conducted in years before 1951 contained essentially the same questions.

b. Method of calculation. The survey each year has interviewed 3,000 to 3,500 consumer spending units chosen to represent a cross-section of the population of the United States residing in private households.³⁹ Each spending unit was questioned about his assets and liabilities along the lines indicated above in the section on definition and coverage. Various formulations of saving were calculated for each spending unit.

The saving calculations were checked for internal consistency and for reasonableness with reference to the income and asset holdings of the spending unit. For example, in the 1951 survey summaries of the data on sources and uses of funds obtained in the interview were prepared for one-half of the sample. The major gap in the sources and uses statement—that is, the difference between recorded sources and uses—was outlays for current living expenses which were not obtained in the survey. Respondents were asked to review the summaries and judge whether the omitted uses of funds represented a reasonable estimate of their current expenses.

For the surveys yielding a fairly comprehensive saving figure (those conducted in the years 1947 through 1951) complete information on saving was not obtained from 4 to 5 per cent of the spending units. In such cases an assignment of total saving was made on the basis of the average for a group of spending units with similar characteristics of age, income, home ownership status, etc. No assignments were made for the individual saving components.

c. Presentation. Detailed analyses of the saving data collected in the surveys conducted during the years 1947 through 1951 have been presented in articles appearing in the following issues of the *Federal Reserve Bulletin*: July 1947, August 1948, January 1950, November 1950, and September 1951. These articles include numerous tables showing positive, zero, and negative savers distributed by various characteristics such as income, age and occupation; percentage of income saved or dissaved; distribution of aggregate positive, negative and net saving by income deciles and other characteristics; distributions of the various components of saving; and frequencies of various types

³⁹ For definition of the excluded population, see footnote 35.

of saving. Estimates of aggregate saving derived from the survey data were presented occasionally; for example, estimates for the years 1947-1950 are given in Table 7 of the September 1951 *Bulletin* article. In an appendix to this article an alternative saving calculation is presented which includes allowance for depreciation on homes, purchases and sales of automobiles and depreciation on automobiles owned. A similar calculation was made for the data from the 1950 survey and presented in an appendix to the article in the November 1950 *Bulletin*.

The data have in addition been analyzed extensively at the Survey Research Center.⁴⁰

⁴⁰ The results of some of these analyses have been published in the following articles:

- Campbell, Angus, and Katona, "A National Survey of Wartime Savings," *Public Opinion Quarterly*, Fall 1946.
- Contributions of Survey Methods to Economics*, edited by Lawrence Klein, Columbia University Press, N.Y., 1954.
- Fisher, Janet, "The Economics of An Aging Population, A Study of the Income, Spending, and Saving Patterns of Consumer Units in Different Age Groups, 1935-36, 1945 and 1946," Ph.D. Dissertation at Columbia University, New York, N.Y.
- Fisher, Janet, "Postwar Changes in Income and Savings Among Consumers in Different Age Groups," *Econometrica*, January 1952.
- Fisher, Janet, "Income, Spending and Saving Patterns of Consumer Units in Different Age Groups," *Studies in Income and Wealth*, Vol. 15, National Bureau of Economic Research, New York, 1953.
- Hyson, C. O., "Savings in Relation to Potential Markets," *American Economic Review*, December 1946.
- Katona, George, "Effect of Income Changes on the Rate of Saving," *Review of Economics and Statistics*, May 1949.
- Katona, George, "Analysis of Dissaving," *American Economic Review*, June 1949.
- Katona, George, *Psychological Analysis of Economic Behavior*, McGraw-Hill Book Co., Inc., N.Y., 1951.
- Katona, George and Likert, Rensis, "Relationship Between Consumer Expenditures and Savings: The Contributions of Survey Research," *Review of Economic Statistics*, November 1946.
- Klein, L. R., "Assets, Debts, and Economic Behavior," *Studies in Income and Wealth*, Vol. 14, National Bureau of Economic Research, New York, 1951.
- Klein, L. R., "Estimating Patterns of Saving Behavior from Sample Survey Data," *Econometrica*, October 1951.
- Klein, L. R. and Margolis, J., "Statistical Studies of Unincorporated Business," *Review of Economics and Statistics*, Feb. 1954.
- Klein, L. R. and Mooney, H. W., "Negro-White Savings Differentials and the Consumption Function Problem," *Econometrica*, Vol. 21, No. 3, July 1953.
- Lansing, J. B. and Maynes, E. S., "Inflation and Saving by Consumers," *Journal of Political Economy*, October 1952.
- Morgan, James N., "Individual Savings in 1947 and 1948," *American Economic Review*, June 1950.
- Morgan, James N., "The Structure of Aggregate Personal Saving," *Journal of Political Economy*, December 1951.
- Rosen, George, "The Distribution of Incomes and Savings," *American Economic Review*, December 1950.
- Savings in the Modern Economy*, edited by Boddy, Heller, and Nelson, University of Minnesota Press, 1953, Chapters 8 and 13.

The CHAIRMAN. Mr. Goldsmith, I suggest that you proceed with the opening presentation in your own way, introducing the other members of your panel either now or as they may be called upon, at the conclusion of your opening statement, when we will proceed with a general discussion between the panel and the subcommittee.

STATEMENT OF RAYMOND W. GOLDSMITH, RAYMOND W. GOLDSMITH ASSOCIATES, WASHINGTON, D. C., CHAIRMAN, COMMITTEE ON SAVINGS STATISTICS

Mr. GOLDSMITH. Thank you, Mr. Chairman. I think I will take the opportunity of introducing the members of the task force of the panel now.

Mr. Roy L. Reiersen, Bankers Trust Co.; Mr. Edward Shaw, professor at Stanford and staff member of Brookings Institute; Mr. James J. O'Leary, director of investment research of the Life Insurance Association of America; and Mr. Solomon Barkin, of the Textile Workers Union of America. The sixth member, Mr. Simon Kuznets, of Johns Hopkins University, cannot be with us since he has been out of the country and will not be back until after Labor Day. I have corresponded with him and he has informed me that he has no special statement to make.

Well, then, with your permission, I will proceed with this short statement that I have. I want to state that this is a personal statement that I have not cleared with the other members, although I hope they do not disagree violently. If they do, you will hear from them soon.

Statistics of saving are unfortunately a rather complicated and technical subject, as the size and content of the committee's report may indicate. It therefore seemed preferable to concentrate in this brief introductory statement on the reasons why reliable and prompt statistics of saving, in the committee's opinion, are of such importance that a considerable improvement and extension of the figures now available seems called for; on explanation of the main approaches to the measurement of saving; and on a summary of the principal recommendations of the committee, rather than to provide a complete catalog of them and to discuss their implementation. We shall, however, be only too glad to answer any questions regarding these details of our recommendations which members of the committee may have. I hope that the committee will excuse me if part of this statement rather closely follows the text of the report before you. May I suggest that you interrupt my statement wherever it is not clear to you, or where you desire additional information.

Now, the report which I am going to summarize is the result of a series of meetings, extending over several months, with representatives of all Government agencies that produce or make substantial use of statistics of saving—i. e., primarily the Department of Commerce, Securities and Exchange Commission, Federal Reserve Board, Treasury, Department of Agriculture, Bureau of Labor Statistics, Bureau of the Budget, and Council of Economic Advisers, and with more than 50 business and academic users of saving statistics; of an analysis of the memorandums, sometimes of substantial length, that were submitted by these organizations and individuals; of a study of previous

investigations of saving statistics in the United States; and last but not least of the personal experience of the members of the committee in making and in using estimates of saving.

I should like to begin by stating in the briefest language, and therefore without some important qualifications, the main conclusions which the Committee on Savings Statistics has reached and which are set forth in part IV of our report.

First: Although statistics of saving have been considerably improved since their first appearance less than 20 years ago, it is generally felt that the figures now available do not reveal changes in saving with the promptness, in the detail, and with the reliability that their importance for the analysis of the American economy demands.

Second: Statistics of saving serve many purposes and the demands of uses therefore vary and sometimes conflict with each other. While not all these demands can be satisfied, the committee feels that substantial improvements, involving in several instances collection of additional primary statistical data, are necessary to make the statistics of saving an adequate tool of economic and business analysis, and that such improvements do not require major changes in our basic economic and financial statistics.

Third: Because of the numerous and varied uses to which saving statistics are put, flexibility is a crucial requirement. This means that the statistics should be made available in as great detail and with as full explanations as possible, and should be presented in such a manner that the different groups of users can modify them in the way that best suits their needs.

Fourth: The committee is aware that, as bricks cannot be made without straw, so the substantial improvements in the statistics of saving which it regards as called for will require additional funds. The committee feels, however, that the increased allocations which this involves are amply justified, particularly in view of the astonishingly small and shrinking amount of funds now being spent by the Federal Government on statistics of saving, compared to their importance and the expenditures on other statistics.

Fifth: The committee is inclined to believe that, apart from the inadequacy of funds, more rapid progress in the field of saving statistics has been impeded in the past by lack of aggressive sponsorship and by division of responsibility among several Government agencies.

Now I will be very brief and say a few words about why we want savings statistics and what we want them for. They are of importance, obviously, for the analysis of short-term economic fluctuations, of long-term economic trends, and of movements in the capital market.

The importance of savings statistics for the analysis of short-term economic fluctuations or business cycles stems primarily from the fact that saving needs to be offset smoothly and continuously by new investment if an interruption of the circuit flow of income is to be avoided, an interruption which would result in a decline in national income and the volume of production, and which might lead to a cumulative downward movement in the economy. We must therefore have up-to-date information on the volume of saving as well as the volume of investment, its forms and its flows.

The main purpose of statistics of saving in long-term analysis is to help understand the process by which economic growth, and particu-

larly the expansion of the country's stock of capital is financed. This requires estimates of saving separately for the main groups that habitually make funds available and those that absorb them, and in addition statistics in as much detail as possible of the flow of these funds from savers through financial intermediaries to investors.

The third of the main uses of statistics of saving is more technical, but by no means less important—the current analysis of the capital market. This use, which in general calls for more detailed and up-to-date figures than the two others, is of interest primarily to institutions active in the capital market, such as investment bankers, commercial banks, insurance companies, and investment companies; and to Government agencies that are closely connected with developments in the capital market, such as the Treasury, the Federal Reserve Board, and the Securities and Exchange Commission, and the Council of Economic Advisers.

To follow the discussion in the report before you and the recommendations made in it, it is important to keep in mind that saving can be measured, to use accounting terminology, once from the income account as the difference between current income and current expenditure, and again from the balance sheet as the sum of net changes, excluding revaluations, in the different forms of assets and liabilities of individual economic units, of groups of them, and, finally, of all units within the Nation; and that the results of both measures are identical if no errors have been made. Furthermore, the data on income, expenditures, assets, and liabilities, can be obtained either from aggregate, census-type statistics covering all or most units, or from a scientifically selected and usually rather small sample of units. There thus are four approaches to statistics of saving, and it is the combination and reconciliation of the results of these diverse approaches that is at the bottom of many problems in the field of saving statistics.

It is also well to recall that we have at the present time two main estimates of personal saving, including unincorporated enterprises in agriculture and in other sectors: one from the income account prepared by the National Income Division of the Department of Commerce, the other from the balance sheet compiled by the Securities and Exchange Commission, both of which are based on aggregate data. There are also available estimates of corporate saving, all derived from the income account. However, we still lack estimates of the saving of Federal, State, and local governments, and as a result we are not yet able to estimate aggregate national saving. Finally, we have one set of sample data relating to saving—i. e., the Survey of Consumer Finances made annually by the Survey Research Center of the University of Michigan for the Federal Reserve Board.

I shall now turn to specific recommendations for improvements in or additions to the statistics of saving now available. This presentation will be limited to those statistics that in the committee's view are of greatest importance; that involve a significant extension of the information available; and that may call for substantial additional funds. All these recommendations refer, with the exception of item IV-4, to aggregate statistics of saving obtained by the balance sheet approach. I shall omit recommendations of minor importance and those that can be accomplished rather easily, although together these improvements are by no means of secondary importance, or less urgent.

The first recommendation relates to monthly indicators of personal savings. There is need, the committee feels, for a set of monthly indicators of personal saving in addition to the present quarterly and annual statistics. These monthly indicators could not be as comprehensive or as elaborate as the data we now have, but they would be released within 3 to 4 weeks after the end of the month, while the detailed quarterly statistics of personal saving now become available only 3 to 4 months after the end of the quarter, an interval much too long for effective use in appraising current economic developments.

The second recommendation of the set of recommendations, deals with separate statistics of saving of main saver groups. You may recall that at the present time, we have only one total for personal savings, which includes them all without distinction. There is unanimity that one of the most important steps to be taken is to split this total into subtotals, for at least four groups of savers, namely: Nonfarm households, farmers, unincorporated business firms, and private nonprofit institutions.

Of the different groups of savers, the statistics of saving of unincorporated business firms are most urgently in need of thorough improvement. This may require development of current financial reports from a sample of unincorporated firms, a project of serious technical difficulty and involving considerable expense, but one needed in order to remedy our present almost complete lack of information on the current financial situation of unincorporated business. In exploring this field, one is forcefully struck by the contrast between the great amount of attention continuously bestowed by Congress on small business problems, and the absence of information of sufficient scope and reliability that could serve as a basis for informed and intelligent policies dealing with small and unincorporated businesses. Possibly budgetary limitations have been responsible for this very unsatisfactory state of affairs.

The third set of recommendations deals with improvement of statistics of forms of personal savings, rather than with the statistics of personal savings of groups within that aggregate.

Well, in that field, the need for improvement in the statistics is greatest for saving through real estate other than 1- to 4-family dwellings, through privately held mortgages, and through securities that are not distributed by the investment banking machinery.

It is also felt that separate estimates should be made available for saving in the form of consumer durables. As you know, probably, at the present time expenditures and consumer durables are regarded like all other current expenditures, and there is no attempt made to show the net savings, meaning expenditures less depreciation allowances for consumer durables. While economists may argue whether or not the acquisition of consumer durables should be classified as saving, the amounts involved are so large; the expenditures are so closely connected with the movements of consumer debt; and consumer durables are to such an extent substitutable for commercially supplied facilities which are without questioning regarded as part of saving, that estimates of personal saving in the form of consumer durables, parallel to those now being calculated for personal saving in the form of homes, have become essential for economic analysis.

The fourth recommendation deals with a sample survey which forms part of the survey of consumer finance. These surveys undoubtedly hold great promise for better understanding of saving practices of households but the committee concluded that considerable additional experimentation seems required before the value of the survey data as supplements or alternatives to measures of alternate savings can be recorded as established. This will call for a number of special studies designed to test the reliability of data and explain apparent discrepancies between the sample data and the aggregate data. Studies of this type are particularly needed for households in the upper income groups and in the very low income groups.

So far, I have dealt with statistical personal savings. Now, I come to those which affect corporate savings.

The estimates of sources and uses of funds, which are now available only on an annual basis for all nonfinancial groups together, should be developed to a point where they can be put on a semiannual and later a quarterly basis; figures are available separately for major industry groups; and they can be presented separately for large, medium-sized, and small corporations. Probably the most promising approach is the expansion of the quarterly financial reports now collected by the Federal Trade Commission and the Securities and Exchange Commission for manufacturing corporations, to include corporations in trade, mining, and service industries, and possibly in construction and real estate, and the collection of similar data for different groups of public utility and financial corporations.

Now, we turn to the statistics of Government saving. The committee feels that in view of the importance of the figures for developing estimates of aggregate national saving and of the intrinsic interest which the figures have for evaluating the role of the Government in the national economy, arrangements should be made for the regular preparation of estimates of saving, and also of sources-and-uses-of-funds statements of Federal, State, and local governments. These statements could be limited initially to annual data, but in the case of the Federal Government the development of quarterly statements should also be considered. Examination of the problems involved, review of previous attempts, and discussion with experts in this field indicate that estimates of this kind can be developed without unreasonable difficulty or effort. Preparation of the estimates will involve the segregation of capitalizable expenditures, separating those of military character and—a more difficult problem—the development of depreciation allowances for the different types of tangible assets owned by governments. Really, what is proposed, in essence, is to apply the same accounting principles that we now apply to corporations, and to individuals, to the Government and calculate an estimate of saving that is parallel to those we now have for corporations or for individuals.

Now, the last point deals with the organization of saving statistics. The committee has come to the conclusion that the responsibility for formulating and developing programs in the field of saving statistics and their sponsorship should be lodged in one place within the Federal Government, not necessarily in one of the agencies now producing statistics of saving, but that the actual preparation of statistics be continued on the present decentralized basis. This principle of centralization of responsibility is in the committee's opinion, essential to

the realization of the recommendations proposed in the report before you.

I think that is as much as I need to say at this point. I suppose you may want to hear from the other members; whether they want to add something or take exception to what I have said.

The CHAIRMAN. Thank you very much, Mr. Goldsmith. Mr. Reier-son, would you care to make a comment?

Mr. REIERSON. Mr. Chairman, I have no elaborate comment to make except to endorse everything that the chairman has said. It seems to me that his concluding paragraph deals with a subject that should receive a good deal of attention.

We are dealing in the savings statistics area with statistics that are by nature very complex. There are great conceptual problems involved, as will be apparent from the record and from the report. However, I think the failure to improve the figures as rapidly as might be deemed desirable is not due to that factor, since I believe there is in the Government service no shortage of people qualified to cope with the conceptual and technical problems involved. But it does seem to me that there is a lack of aggressive leadership in the accumulation of savings statistics that is a very vital defect.

I have not had the opportunity to read the reports of other task forces which are operating in behalf of your committee, but it seems to me that perhaps in the savings field, more so than in the others, we have a diversity of collection processes in that the data are collected by a variety of governmental agencies. Furthermore, I have the impression that frequently the data are a byproduct of administrative functions.

For example, the Internal Revenue Service provides a great variety of necessary basic benchmark data for savings and other economic statistics; however, its primary function is the audit of tax returns and the collection of taxes, rather than the accumulation of statistics. The SEC also has made a great contribution in the area of savings statistics, but obviously this is not its major function. Out of this situation I think there may have developed a lack of coordination and perhaps some unwillingness to press aggressively for the funds that are needed in order to improve these savings statistics, which we regard as important.

Perhaps another byproduct may be a failure to arrive at a formal plan for the improvement of the statistics. Improvement is going to come slowly in this area; it will not be achieved overnight.

For these reasons, therefore, I should like to underline Mr. Goldsmith's concluding paragraph. It seems to me to pose a problem that is within the bailiwick of your committee. It is a question of whether—in this area at least—the chances of improvement might be enhanced if there could be greater centralization of responsibility, maintaining at the same time, the diversity in the collection process.

I think that is the extent of my comment.

The CHAIRMAN. Thank you, Mr. Reier-son.

Mr. Shaw?

Mr. SHAW. This is a unanimous report. I think now we can add our unanimity to the eloquent statement by Mr. Reier-son and pass the microphone on to the next member.

The CHAIRMAN. Mr. O'Leary?

MR. O'LEARY. I also feel very strongly the need for having a point of leadership in the collection of these figures, and I subscribe, of course, to Mr. Goldsmith's comments. It seems to me that with savings and investment the heart of our economic process, it is pretty much of a disgrace that we have had so little in the way of centralization of responsibility in this field.

I would like to comment particularly on the need for improving these data with respect to the capital market. The Federal Reserve and the Treasury are always beset with the problem of understanding and interpreting clearly exactly what the effect of their policies is. One of the reasons why they have this problem is the lack of prompt, detailed information on statistics relating to the capital market. It would aid a great deal in the development of Federal Reserve and Treasury policy, and Government and private policies in general, if we had much better statistics for this particular use—that is, capital market analysis.

The CHAIRMAN. Thank you, Mr. O'Leary.

Mr. Barkin?

MR. BARKIN. I think this is an unusual opportunity for a person identified with the trade-union movement to join hands with members of the banking fraternity in supporting the report and expressing appreciation for our joint efforts in this field. I think the contribution that I could make at the moment is to make several of these observations.

In an area where there is so much controversy and so much discussion, both theoretical and practical, on the problems of how do we finance growth, how to cushion individual problems of adjustment, and how to help raise standards of living, one is completely confronted with the bewildering and unclear combination of statistics to find his way through the dilemma of analyses and understanding. One of the difficulties is, obviously, the undifferentiated combination of figures which we face, as Mr. Goldsmith indicated.

The most useful report, or the most commonly used one, which still carries the term "savings" is the national income single figure, which has been employed both to understand the extent of saving and the methods of projecting our future economy. On analysis, the report indicates that is an extremely weak reed of questionable meaning. Consequently, many of our projections as to what our needs are for the future, and what our rate of savings is at the present time, remain completely unsatisfactory so long as we have to depend on figures of that type.

The report is essentially presenting the point of view of the economists and the analysts, but also supplemented, as you will note, by the active and pressing needs of the lending institutions as well. It is really extremely confounding in face of the magnitudes—the moneys which pass through these institutions and the different nature of the debt and savings and financial obligations which pass through them—that we know and can tie down so little.

This is particularly so when the public faces—and Congress faces—the problem in, let's say, a period like a year ago, when we were wondering how would people carry through a recession such as we have had. Were there liquid enough savings to support people, or were there not any savings? Many conflicting statements and conjectures

were made simply because we did not know what the meaning of figures was—what the facts were. We could not break down the few figures on savings into a form which would distinguish between contractual savings, the economists' concepts of savings, the depletion in values, and to distinguish the liquid forms of savings. These are extremely important particularly when you come to the great mass of people, when you analyze their particular condition.

We have in the supplement a report of several agencies, particularly the one that impressed me in terms of my own interest, the report of the Social Security Administration, showing the vital importance of savings statistics in the determination of policy on their part. What will the position of the agency be? What is the position of the families? They face financial challenges, and we are unable to really provide answers for that purpose.

As Mr. Goldsmith indicated, we place great stress upon the need—I think it is on page 130, of this mimeographed form—on the need of further study in the savings habits and volumes of savings of the lower and upper income groups.

In my own work, in the lower income groups, I am also very much impressed with the fact that we also find lower income groups ending up with a deficit. That is, every budget study shows that income groups well below the \$3,500 level show a deficit. Now, how do you cover a deficit? These people don't have savings. They seem to somehow or other borrow and secure funds and finances. How do they live off the cuff? Well, we don't know these things very well. All of us have some conjectures from personal contacts and small studies. We don't understand the volume of it; the importance of the inter-family debt and credit which has been established.

On the other hand, we know—as the technicians who have appeared before our group have said time and time again—consumer studies. These income studies which have been sponsored by the Federal Reserve Board and done at the University of Michigan survey center, have been unable adequately to sample and secure reports on the upper income groups.

Obviously, while that remains so, statistics on savings by individual consumers or citizens are completely inadequate. That is why I endorse and believe that one of the areas that your committee should pay particular attention to is the section on the types of improvements which our committee recommends for these cross sections of consumer surveys.

The other comment that I would like to make relates to one Mr. Goldsmith indicated: The pressing need of separating out our savings into the four components of personal household, farm, nonprofit, and your incorporated business organizations. Those of us who want to know what is going on in our economy are confronted with a blank wall when it comes to the problem of knowing what is happening to the income and savings and financial position of unincorporated business.

Mr. Goldsmith properly said in view of all the words that are passed out in the Halls of Congress on the subject of small business, that it is rather amazing that there is so little solicitude for detailed and financial material on the operations of small business.

Now, the type of surveys have been subjected in this report. I hope that your committee will support the types of investigations which

have been proposed by our committee, and that we can thereby be assured of much more adequate data in this field.

The CHAIRMAN. Miss Projector?

MISS PROJECTOR. I have nothing to add.

The CHAIRMAN. Mr. Young?

MR. YOUNG. I have nothing to add to the comment that has been made by the chairman and members of the consultant's committee on this report. I think it is a very impressive document. I would like to say to the subcommittee that the Board of Governors has been very happy to be of help to your program in organizing, sponsoring, and underwriting the effort that has been made here.

In selecting this committee, we consulted widely with members of the economic profession, with business economists, with labor economists, for the identity of the most distinguished and competent experts that this country has in this area. Then we narrowed the panel down and I am very glad to say that we did not have a single refusal to serve on the consultant's committee. I think that attests to the importance of the subject, and the urgency of this field of information. All of the persons that were invited necessarily made a commitment to devote time, rather uncertainly but freely, to the work of the committee. And they did give a great deal of time. They had many meetings. They had representatives of all of the public agencies, that have an interest in savings data meet with them and discuss the problem of better information. They brought in to their consultation outside experts. They brought in people from business and from the labor movement and received the benefit of their views and counsel. This report is an extraordinarily well prepared, well documented, and thoughtful sifting of a very difficult and complex field of information.

The CHAIRMAN. Thank you, Mr. Young.

Mr. Bowman?

MR. BOWMAN. Mr. Chairman, I welcome the opportunity to congratulate the panel for what, in my opinion, is a very excellent report, entitled "Study of Savings Statistics."

I am particularly appreciative of the fact that the panel took the opportunity to state the different but interrelated character of the uses of savings statistics, and the problem of definition of saving for these different uses.

As the Chief of the Office of Statistical Standards, I shall certainly study very carefully the recommendations for both the short run and the longer run improvements. The Joint Committee on the Economic Reports and its Subcommittee on Economic Statistics have, in my opinion, performed a very valuable service in inducing the Federal Reserve Board to sponsor the formulation of these expert views.

I am extremely hopeful it will be possible to implement the recommendations and bring about the realization of the objectives which are sought. I feel certain that one of the best investments a private-enterprise economy can make today is the improvement of its economic intelligence concerning its growth processes, its current situation, and its short- and long-run prospects. The investment in economic intelligence must become a much improved and a much better integrated program. This requires close attention within the executive departments of the Government; understanding and support from

Congress; a much wider recognition of its value and its cost from business and public generally; and lastly, but extremely important, continued active work by scholars from all areas.

I would appreciate it very much, Mr. Chairman, if I could address a question to the panel.

It would be extremely helpful to me if the chairman of the panel would expand a little more on the recommendation which appears on page 2:

The committee, therefore, recommends that the responsibility for formulating and developing programs in the field of savings statistics and their sponsorship, be lodged in one place within the Federal Government—not necessarily in one of the agencies now producing statistics of savings—but that the actual compilation of statistics be continued on the present decentralized basis.

I am particularly interested in the extent to which the panel feels the central agency in which such a program would be lodged should receive the financial support for it. One difficulty that we have had in any centrally managed program is that the central managing agency may find that its collecting agencies do not get the financial support necessary to collect the data which they are to utilize. Perhaps the panel would like to comment on this question.

Mr. GOLDSMITH. Well, you may remember, Mr. Bowman, that this committee, as the other ones, were instructed by the chairman in its letter of reference, that they should not propose or make statements about who should do what. So we kept of course to that injunction; but we did discuss in general terms, I will admit, among ourselves, what this very broadly phrased recommendation meant in more concrete terms so we would be prepared if such a question were asked, to say a little bit about it.

However, we did not in the financial angle, we did not go partly because we simply do not know enough about the detail of finances as a Federal financial process. Some of us have in years past been in the Federal Government, and know there is nothing more important than for an agency to have a smart budget officer; that a layman cannot substitute for him.

I recognize that this is a problem, and we know the power of the purse, and obviously, theoretically, it would be advisable to have the sponsoring agency be the one agency which we envisage to be the focus of policymaking and sponsorship, to have some say about the funds certainly, but personally, I am not sufficiently familiar with the intricacies of the allocations procedures to say what the best way is. I guess we know what we want but how to achieve it, we would have to leave, I suppose, to the budget officers.

However, on the more substantive problem of how there could be a division between sponsorship and execution, we did have some discussion. We do not think that would raise any real difficulties. It is true, there would have to be an understanding that the agency that sort of is the coordinator has a certain power of direction, but I think that has been achieved in other cases. I would assume that the Council of Economic Advisers, not having formal powers to instruct any other agency or your own divisions, have evolved methods by which this can be done fairly efficiently.

Now, we did, because of the chairman's injunction, we did not specifically select or decide who should do this. I think it is an open question which must be worked out within the Government. There is al-

ways an advantage of having an agency that was not in the operating end, who sets the functions, because it is not as much tied to what has been done before. There necessarily develops in every agency, when it has done certain things for 10 years, the conviction that this must be the best way in which it can be done and sometimes an agency that is entirely free to go along new paths, and is not tied to one of the other alternative and possibly competitive approaches, has advantages. I think that is our feeling in the situation as it exists, it might be better if this function of sponsorship and policy development were exercised by a nonoperating agency. I think in our discussions we really were inclined to feel that it should be an agency that has not been at the present time in the field of actually producing savings statistics. This, I am afraid, is still very vague, but it is about as much as I can report of our actual discussions.

Now, some of the panel members may have more definite opinions that they do not want to withhold from you.

The CHAIRMAN. Do any other members of the panel wish to comment on Mr. Bowman's question? Mr. Reierson?

Mr. REIERSON. While I subscribe to Mr. Goldsmith's observation that the power of the purse is not inconsequential, I would like to suggest the power of persuasion also is significant in the democratic process. A thought occurs to me; one by-product of centralization of authority might be to establish an agency which could then go to the responsible heads of the executive departments with a formal plan and program, and from them perhaps obtain the support which is necessary if their budget plans are to include sufficient funds for this purpose. Now, certainly, I am not acquainted with the budgetary processes of the Federal Government. However, I still think one problem in the area of savings statistics is persuasion, as well as funds. Perhaps one problem is how to persuade the heads of some of the executive departments that more funds should be requested by them for this project and in that program, perhaps centralization of responsibility could make a contribution.

The CHAIRMAN. I am sure, Mr. Reierson, you are not suggesting that the Bureau of the Budget persuade or request more funds.

Do you want to pursue the question further, Mr. Bowman?

Mr. BOWMAN. I would like to make an additional remark. It is not quite as strange as it might appear for the Budget Bureau to further statistical programs in the way just indicated. The difficulty is, however, as the chairman knows, that sometimes even when funds are requested, they are not granted. Now, I took this recommendation to mean something more than what I considered to be the present authority of the Office of Statistical Standards, namely, to develop—to suggest—to institute a program; to work out its broad outlines; to go to the different agencies and try to get them to implement parts of it; to keep it organized. I consider the Government is already organized to do that sort of thing. However, there are many difficulties in carrying out such coordinating and planning. It may well be, for instance, that we decide that the financial reports program of the Federal Trade Commission and the SEC should be expanded in a certain way, because it is an important key in our overall statistical program. So an increase is included by the agencies in their budget

requests, approved by the Bureau of the Budget, and comes before Congress, and then it is denied; and, therefore, our program falls by the wayside, at least in part. I think in many cases it is understandable why Congress does not appear appreciative of these programs when they are presented piecemeal. They begin to feel there is duplication. When each agency does only a part of an overall program it is not always clear that they are performing integrated parts. I was trying to ascertain from my question whether the recommendation for a central lodging of the savings statistics program in one agency also implied a central lodging of funds for that program. When the funds have been appropriated portions of them might then be allocated to other collecting agencies for performing parts of the statistical work.

I was trying to find out to what extent elements of this type of thinking were implied in the panel's recommendation.

Mr. GOLDSMITH. I should say this probably would be the most desirable way because then the agency that does the policy, thinks up the policy of that line, really has a means of executing it and such arrangements, of course, have been made a great many times. It appears that the Defense Department apparently has an easier time in working out getting such arrangements through Congress. I remember that they financed indirectly one of the largest economic research organizations in the country but apparently civilian agencies have not been as good at that; but I hope something of this sort of reallocation of funds could be worked out. It is only logical and certainly would insure Congress in a way, of much better control since the entire program would come up under one title. Although we may not have put it in those terms, I am quite sure all the members would have felt it was an entirely appropriate suggestion; that after you selected the agency, that should be responsible for the integration and policy formation, it is a very pedestrian function, but unfortunately, without that, nothing gets done. Somebody has to be there, making themselves disagreeable year after year, so once you select the scapegoat for that, that agency then should get the whole allocation and redistribute it. So I would say yes, that seems to me that would be entirely in line with what our thinking was.

The CHAIRMAN. Would it be possible or practical, as the committee sees it, to designate a now-existing agency which is involved in this particular field as one among a number, and designate it as the agency which would have the coordination and follow-up responsibility?

Mr. GOLDSMITH. Well, as I said, we felt more or less that probably this coordinating function would not be best lodged in one of the present operating agencies for whom this is a sideline. I mean that has been really one of the problems that was already mentioned by Mr. Reiersen; that savings statistics have been very much a sideline for all the agencies. Nobody goes to bat for 1 of 17 activities, which is not essential. That is what this thing suffered.

Moreover, it is really a very broad problem which has very close connections with virtually all aspects of financial economy, so in one sense, you would say you would try to pick an agency which is primarily a financial agency and is concerned with finance on a broad basis rather than specialized, just dealing with one or the other aspect of it.

The CHAIRMAN. It seems to me not illogical in this particular discussion to raise the question of whether or not there may be a need for an agency which not only had the responsibility for the coordination and planning and promotion in this field, but might include this among other fields, as a responsibility of a strictly operating agency, as opposed to an agency such as the Office of Statistical Standards. It occurs to me if we were going to set up another echelon, and that would be the effect of this, it would be an echelon somewhere below the Office of Statistical Standards but over the collecting agency insofar as savings statistics are concerned. We might wonder, then, whether or not there should not be such an echelon charged with all statistics or as opposed to that, a fixing of responsibility on an agency for all of the statistics of savings on an agency now involved with some part of savings statistics.

I see the disadvantages in both. Obviously, there are many. The reason I pursue it is to see if I can approach a little more closely what might be a practical solution. When you start setting up an agency to coordinate in this field, you are faced with the problem that perhaps an agency should coordinate in another field.

Congressman TALLE, do you have some observations or questions?

Congressman TALLE. Mr. Chairman, at the outset, I want to repeat what I have said on other occasions, that this committee certainly feels very much indebted to the Board of Governors of the Federal Reserve System and Mr. Bowman, of the Office of Statistical Standards, and to you scholarly gentlemen, of the panel. It is a tremendous work you have done and I know the chairman and all members of the committee appreciate your cooperation.

I do have a special question which in the interest of time I shall withhold, at least until other questions have been asked.

I have three, Mr. Chairman, that pertain to Mr. Goldsmith's and the panel's recommendations.

The first is this: The task group has noted in a number of places the need for identifying groups of savers. Would it be possible to obtain a figure of the total number of persons who save regardless of the form in which their savings are placed, but eliminating the overlap persons who use more than one form of savings; and if such a figure could be obtained, would it have any usefulness in economic analysis?

Mr. GOLDSMITH. Do you want me to answer them one by one or do you want to put your three questions and have them answered together?

Congressman TALLE. One by one, I think would be better.

Mr. GOLDSMITH. That is a very interesting question because it brings out very neatly the difference between the two basic statistical approaches to savings statistics, from aggregate statistics, which is the one we have in the SEC, and so-called liquid savings and sample statistics.

Now, this question cannot be answered from aggregate figures. We do have figures with how many people have an account in a savings bank; how many have life-insurance policies; how many are beneficiaries of the private pension funds; and so on and the countless numbers of holders of savings bonds. We can never eliminate the duplication of figures, and that leads to unreasonable results very

soon. This can be handled very satisfactorily in theory and even in practice with some improvements by the sample approach, because there you go to a small number of households selected scientifically, and you ask them, "Do you own this, that and the other. Did you actually save last year or not." That has been done, and it has, interestingly, been found that in any one year, generally of the three households, two do some saving and we can trace in which forms; and one dis-saves, which means he spends more than he takes in. It has also been suspected, with some good reason, that the fairly sharp fluctuation in aggregate savings which we have had in the past in some periods are due more to the proportion of people who dis-save and save, than to actually how much the people who save, save year after year. So this problem of determining the proportion of savings and dis-savings is a very important one and we do discuss it a little bit—too briefly, possibly—and it is one of the big functions of the sample approach.

I mean, that is one of the advantages, that it can give us a figure of this type. They are needed to understand the aggregate saving process and they probably will have to be developed further than they have been in the past, although I want to say that the survey as it now exists, has given us a good deal of valuable information, just on this point, Congressman, that you have been raising.

Congressman TALLE. Thank you, sir.

The second question: The task force states on page 96 that it has found it more difficult to formulate recommendations in the area of cross-section data than for any other aspect of savings statistics. A number of special surveys are suggested on pages 102 and 103. Are they listed in the order of the importance that the task group attaches to them?

Mr. GOLDSMITH. No. No. This is not the order of importance—we tried to do it in some logical way, but it probably would have to be an integrated program. It is very doubtful whether you could just pick one or two. We have talked at quite some length with the Survey Research Center which operates this survey. As a matter of fact, two of the members went out there to look at it firsthand. We have talked to the people at the Federal Reserve Board for many years. We have lived with this and we talked to industry scholars who worked on this material and there is a general agreement that the material is very valuable; holds out great promise, but is still far from perfect, and that what we have to do now is to make a number of integrated experiments to then come up with a decision whether this approach can be improved and if so, exactly along what lines. So I think this is certainly not the strict order of importance. Probably the second one—if I should now rapidly pick improvements—interview techniques may be the most important one. Then, possibly, (e), the development of outside checks; but it is very difficult to choose because the next one, which follows, immediately after that, that is the one which Mr. Barkin stressed. The intensive surveys for households of the upper income groups and then for households in the lower income groups.

So the only thing I would say is the last two are the least important ones. That I think is fairly straight. They are of the time which is further away. We first must settle the questions which are raised by the earlier ones but apart from sort of dropping off the last two, it

would be difficult to say. One of the main points is that an integrated approach is called for, a number of integrated prospects which, when we have the results together, will really permit us to say what we can get with this message.

Congressman TALLE. My third question. What constitutes savings? When I drive in, in the morning, I hear so many commercials on the radio telling about numerous ways in which savings can be made. Housewives, apparently, have no end of opportunities to save by spending.

This is the question: Is it possible that part of the difficulty in the survey approach comes from attempting to combine types of savings which have such a wide, varying effect? For example, does the person interviewed find it difficult to see any common element of savings in buying an automobile and in putting money in the savings account? Perhaps we should get it through some other method.

Mr. GOLDSMITH. Congressman, in these surveys, the individual household is not asked how much did you save, but there is a fairly elaborate questionnaire and I would suggest that you send Congressman Talle a copy of the questionnaire which the interviewers follow: not verbatim, but essentially, as a set of interrelated questions, and each question can only be expected to be asked as such. The interviewee as a matter of fact, does not know how saving is defined, as it is finally calculated. He is simply asked, did you have more money in the bank at the end of the year than at the beginning? Did you buy any savings bonds? Did you buy a car? Did you buy or sell a house? They are all separate, individual questions. He is never informed of what finally will be regarded as savings.

This is a very interesting question again, you have raised, because the suggestion has been made that we should go at it also the other way around and say now, what did you save last year? Let him enumerate what he regards as savings because after all, that is a very important matter; or at least, in some respects, to find out what people actually do regard as savings. There is no doubt there would be a big difference. Let's take life insurance. Very few people would figure that as their savings. What we figure for them, as statisticians, namely, the change in the premium reserve; they don't know how much the change in the premium reserve goes up. You have to take out the insurance policy, and on some of them, you have to do quite some figuring until you can even figure it out. So there is a substantial difference, between what the individual understands and what we calculate to be savings. This cannot be helped because if we only asked everybody, what did you save, we would get a total that is not comparable. One fellow who is better versed in accounting and economics would probably have a substantially more complete concept of what his savings are than somebody who does not think about it and really regards probably more or less what he has in the savings bank and 2 or 3 items of obvious character, like savings bonds. There have been tests made of this. It generally turns out when you ask an individual what are your savings, you get a much smaller figure than the one we calculate because he just disregards a number of items; and for instance, life insurance, very rarely really, are they aware that there is a saving element in most policies; but again, you touched there upon a very important question and one which we do, in one spot,

suggest that it be investigated. What the people themselves regard as their savings.

Congressman TALLE. I suppose the difficulty arises in part at least out of the fact that words do not mean the same thing to everybody. Stalin's definition of democracy, to use a glaring example, or Mussolini's definition or Hitler's definition—all three of them are entirely different from our own. Of course, that is a glaring case but we try to approach exactness in economics by careful definition of terms used but our definitions may not be those which are in the minds of the people on the street.

Mr. GOLDSMITH. Yes, but the importance of course, is since we are finally interested in explaining their answer, we should try at least to know what they regard as savings, because we may assume that it is that what is most significant.

Now, we cannot entirely follow them because we would generally not take account of depreciation at all. Most of them do not think that way, that you have to make some allowance for depreciation on the stock of durable goods, which you own before you can make a reasonable statement about what your net savings were, but we have a little bit neglected the study of what individuals themselves regard as their savings, and I think it has more importance than is sometimes realized.

Congressman TALLE. I surely agree with you.

Now, Mr. Chairman, this special question of mine. I will not take time for it if it interferes with our planned program.

The CHAIRMAN. All right. Go ahead.

Congressman TALLE. This is a matter about which I have given some thought. It is the condition of foreign statistics. I have broken it down into just three questions:

How good or how bad are economic statistics in foreign countries?

Are they important to us?

What, if anything, can we do in the way of making suggestions for improvements?

My personal experience with foreign statistics is very limited but as far as that experience goes, it is unsatisfactory. I would like to know what you gentlemen choose to say about the situation.

Mr. GOLDSMITH. You are asking about statistics of savings in other countries; is that it?

Congressman TALLE. Yes.

Mr. GOLDSMITH. Well, I think it is fair to say that generally, insofar as most of the foreign countries have these statistics, they have pretty much in time come after us and to a good extent have followed our methods. Now, for instance in this case, it is simply in the cross section, the sample approach. The British now a few years ago, have instituted a survey which is modeled quite closely after the one which the Federal Reserve Board runs, although they have incorporated it with a few things which I think might be regarded as improvements. However, in principle, they are the same.

There are 1 or 2 other countries who have sample surveys, but very few of savings; and if they have them they are pretty much, I would say, modeled after us.

The aggregate statistics of saving of our type, which is built up, asset by asset, let me repeat. We have two ways of getting an aggregate. One from the national-income account, simply deducting ex-

penditures and taxpayments from income. That, of course, can be done in any country which has a national-income statistic and now a large proportion of the countries have it.

There have been various international conferences. They all work toward or along a very similar system. That figure, however, like in this country, gives only one undivided total which while it has its value, is not enough for detailed analysis of savings.

Secondly, we have the statistics of the SEC type, which builds it up item by item, now, that only a very few foreign countries have so far as I know; and all those that have it have pretty much followed our example. The British have been struggling for 10 years and are just beginning. I think this year for the first time—it is not official yet—but the work of an individual scholar who is connected with the Government, for the first time somebody has put together roughly a set of estimates which is roughly comparable to what we have here, and which is known as table VI of the national-income account, which is prepared by the Securities and Exchange Commission.

The Canadians have also been working on it but quite admittedly are taking advantage of our experience, and in that case, like the British, making a few improvements, but there is, I should say, one exception. There are few countries in Europe as you probably know, who have developed after the war a fairly detailed system of national accounts. In some respects, more detail than we have, and some of them, for instance, do calculate the savings of a government which we do not. The Scandinavians do that; and the Dutch who have quite an elaborate system, have gone one step beyond us. In addition to the national income, they have a very rough national balance sheet, and they do have statistics of savings which are similar to ours but less detailed.

The last time I looked at them there was definitely less detail than ours, so if you want to put it the other way around, I don't know of any country, but I have not examined the income for each of them, that has a set that is more detailed, methodologically ahead of ours. Some of them have certain sectors which methodologically or practically are somewhat better than we have. That depends on the statistical organizations.

In some countries, for instance, the income-tax laws are different or the reports for the State taxes go much further. You realize one can use the estate-tax returns to deduce what not only the people who died in the year left, but also, by inference, what people living, who are of the same ages, have. Some countries have more detailed statistics and go further down in the size of the estate, but apart from such minor points, I would say it is fair to say that we are at least on a level with anybody else in that field and really, probably, are ahead or were ahead.

Now, I think we ought to get moving so we can keep ahead.

Congressman TALLE. Surely, I agree with you. Inasmuch as the foreign countries appear to imitate us, we could by example, improve the situation, could we not?

Mr. GOLDSMITH. Yes. Well, I think if any improvements are made, they will be followed abroad. I repeat, in order to be fair in certain aspects, some foreign countries are ahead of us, like in the calculation

of the savings of the Government. We have not yet done that and they have.

Congressman TALLE. Now, if you broaden the scope and go beyond savings, if you broaden the scope and consider economic statistics generally, what would you say?

Mr. GOLDSMITH. Well, now, I really would say you are getting out of my department but I am not unwilling, sometimes, to risk being drowned. I think there I would not be quite as positive. For instance, a number of foreign countries have an annual census of industrial production. I regret to say we not only do not have that but we have retrogressed. We once had a biannual census but that has been abandoned, and there are a few countries who, I think, in a number of special fields are ahead of us in the way that they think they can ask their citizens to report more than we do.

Now, one would have to go over it field by field, and I would certainly hate to go beyond the financial field but there, I think one could not make the statement, even with a reasonable degree of confidence, in the field of savings statistics. In general, I think it is true; and if you take it all together, I suppose the only countries who are runners-up at all are probably some of the British dominion countries and 1 or 2 of the Scandinavian countries. I think by and large, their statistical system is probably on a par with ours, but you have a much greater expert sitting here, who can answer that question.

Congressman TALLE. I would like to hear from the other members of the panel. I will start with my friend, Mr. Reierson.

Mr. REIERSON. I consider that I have no qualifications in this area and would prefer not to be drawn into this discussion.

Congressman TALLE. Mr. Shaw?

Mr. SHAW. There have been lots of occasions in recent years when agencies of this Government must have wished that foreign governments had more data on income, output, employment, savings, investment, consumption. It would have helped enormously in the difficulties during the postwar program. Innumerable countries now are trying for a speedup of economic development. Really, they need and are trying desperately to produce systems of statistics that will show them what their resources are; what the alternative uses are; what of those uses are optimal. For quick development, the most efficient use of resources is required, and that is out of the question, particularly where development is State-directed, unless the data are available.

Officials from the International Bank could stress for you a very urgent need for greater knowledge of how each economic system is furnished by saving with resources and what the choice lines of resources development are.

Congressman TALLE. Thank you. Mr. O'Leary?

Mr. O'LEARY. I would like to make just one brief comment which is not in response to this question but is stimulated by some of the discussion a little earlier, particularly in connection with the earlier questions asked by Dr. Talle.

I noted recently that the Hoover Commission brought out a report in which it pointed out the great amount of unnecessary paperwork that is involved in Government questionnaires and the great economies in the Government that can be realized by eliminating many of the

questionnaires. One of the things that undoubtedly would be said about the recommendations that we are making here today is that they involve what a lot of businessmen would at first glance regard as unnecessary questionnairing. In the last several years I have had a lot of experience dealing with life-insurance executives on statistics produced by the life-insurance business, and my experience has been that when we have tried to obtain information from life-insurance companies, they have reacted just like members of the Hoover Commission. A lot of the questionnairing has been regarded as unnecessary detail; but fortunately, we have been able to stay with it long enough to impress upon these executives the exact use and value of the data; and I am encouraged to believe that if businessmen understand the importance of statistics such as these we are urging, we shall have their wholehearted support.

Congressman TALLE. I was interested in your comment about inter-family debt, Mr. Barkin. I thought that was a good point. I won't ask you to expand on that, but I would like you to make a comment on foreign economic statistics.

Mr. BARKIN. I think all of us are rather impressed with the fact that some of the most outstanding statisticians are to be found on the Continent, but we don't find much statistics there. The Continent has produced outstanding scholars, but the countries in which they live have not always been willing to implement and follow their leadership in making the facts available and applying some of the insights for measurement and judgment which they provide.

I think in that respect, of course, that is one area where we can export knowhow; and do rather cheap and very lowcost technical assistance. These countries are learning that policy decisions based on facts are sometimes more useful, more reliable, more productive, than policy decisions made on more random guesses. While we are porting that knowhow and priding ourselves with the fact that we have been developing facts, we sometimes neglect to furrow our own fields with better data and consequently many of us feel very definitely the great contribution that your joint committee is making in reviewing these fields. It is bringing to the attention of the Congress and the people of this country that we have been neglecting areas where we make very solemn decisions involving large sums. We are not always best guided by the facts. We hope, consequently, that we can aid them by developing statistics in these areas.

The foreign countries are really looking toward us for our experience in this field, as Mr. Goldsmith indicated, to either use our materials or adapt them to their use. I know that in the field of labor and labor-income data, they have borrowed and we borrowed back. We have become indebted to them for improvements which they have brought to light through their own use. We can do the same thing here.

Congressman TALLE. Thank you very much.

Miss Projector?

MISS PROJECTOR. I have nothing to add.

The CHAIRMAN. Let me first say that the task group has done an admirable job in anticipating many of the subcommittee's questions. I am particularly impressed with the separation of the tax-group recommendations into those which could be put in effect within approx-

imately a year and longer recommendations, which are for consideration of the next 3 or 4 or 5 years.

Also, I am impressed with the possibility of the development of monthly indicator series of personal savings as listed on page 16. Would it be your proposal to also attempt in some way to bind these into an overall estimate for personal savings or do you feel that the emphasis should be in the opposite direction of providing information for the greatest number of categories of individual savings?

MR. GOLDSMITH. Well, I think this partly would emerge after some experience. Now, I happen to belong to a somewhat—what you can call either more venturesome or irresponsible breed of statistician. I would probably try to produce from that an overall figure but I would like to observe the figures both backward and currently for a little while, until I felt sure that one can make an overall index out of it.

If we could get all those items—and I think it is possible without too much trouble—we would be close enough to a figure which would have indicative value. It is not that they are important components of savings which we miss entirely, but in a number of them you cannot make some of the adjustment which we do make in quarterly and annual figures, and which are necessary to make them indicative. So one would have to experiment for a while to see whether the negotiation of these adjustments leads to substantial difference or does not. Initially I think the emphasis would be on just what it says, on a set of indicators series rather than on an average, but I would personally hope that it would be found possible, in the course of time, as more experience is assembled, with the series, to cast it additionally in the form of an overall indicator.

THE CHAIRMAN. I take it, then, you would not feel that until there have been experimental periods that such figures would lend themselves to inclusion in the economic indicators?

MR. GOLDSMITH. That I don't know. The indicators as used do not exclusively work with broad totals, and that would be up to the Council, I would say, whether they felt it was a sufficient indicator to the readers or not. Knowing some of the gentlemen that are at the head of the Council, I think they would wait for aging.

THE CHAIRMAN. It would be up to the Council and the joint committee which has the final responsibility for producing economic indicators?

MR. GOLDSMITH. Yes.

THE CHAIRMAN. Now, the tax-group suggestion in 1-A in the presentation of statistics on page 67 that consideration should be given to more precise naming of the series that is now called personal savings, where there are other series, where a more precise descriptive title would reduce confusion.

MR. GOLDSMITH. There has been one, but that may be removed. SEC used to label its quarterly and annual series "Liquid saving," but just recently they have switched that because, really, you could easily be misled by it. What is conveyed by its new title, which is "Net claim," is, if you have knowledge enough to know, claims also include equity securities; so that was another instance. I don't think we have another one of importance.

THE CHAIRMAN. Thank you. Are there further questions or comments?

If not, I would like to repeat what I said to the other committee that has been heard—that certainly you have the assurance of the members of this subcommittee, and I believe all of the members of the Joint Committee on the Economic Report, that, insofar as we are concerned, this very excellent piece of work on which you labored long and well will not merely retire into a dusty cabinet shelf. We recognize it is a very serious problem that confronts us in playing our role, a very limited role, but still important, in trying to further encourage the Congress to understand the tremendous importance that these and other statistics have in giving to the Congress and the Executive and the private sector the tools with which to make the kinds of decisions that constantly confront us.

Since there are some who seem to be unrealistically discouraged by our lack of complete success in getting appropriations this year, that this is a subject with which the average Member of Congress is not only not familiar, but until he comes to understand it better he is not the least bit interested. Until we do a better job, all of us, in making Congress as well as the Executive more aware of what the practical aspect of the statistics are, we are going to have very great difficulties. I think that you have made a very important contribution to our overall objective of arriving at an understanding, developing sympathy, and finally achieving appropriations. I would not want you to leave here without not only our thanks but our assurance that we intend to pursue this over the years in a practical fashion to an ultimate good result.

The next hearings of this subcommittee are tentatively scheduled for October 4 and 5, when we will receive reports of the three other committees established by the Federal Reserve Board.

Thank you very much.

Congressman TALLE. Thank you very much, Mr. Chairman, and I express my gratefulness to everyone who has participated at this hearing.

(Thereupon the hearing was recessed at 11:40 a. m., to reconvene at 10 a. m., October 4, 1955.)

REPORTS OF FEDERAL RESERVE CONSULTANT COMMITTEES ON ECONOMIC STATISTICS

TUESDAY, OCTOBER 4, 1955

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT COMMITTEE ON THE ECONOMIC REPORT,
Washington, D. C.

The Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, met at 10 a. m., the Honorable Richard Bolling, chairman, presiding.

Present: Representatives Richard Bolling and Henry O. Talle.

Also present: Stanley Lebergott, economist for the Office of Statistical Standards, Bureau of the Budget; Homer Jones, Chief, Consumer Credit and Finances Section of the Office of Research and Statistics, Federal Reserve Board; and John W. Lehman, clerk.

The CHAIRMAN. The subcommittee will be in order.

This is the third of a series of five panel discussions to be held by the Subcommittee on Economic Statistics for the purpose of evaluating statistical information available in the fields of savings, business inventories, and business and consumer expectations.

On July 19 and 26, we discussed statistics on plant and equipment expectations and statistics on savings. We have scheduled two meetings today. This morning we will hear from this panel of distinguished analysts who have examined the statistics on consumer expectations and this afternoon from another panel on the subject of inventories statistics.

We are grateful to the Federal Reserve Board for organizing these studies and we especially appreciate the cooperation of the members of the panel.

In addition to the members of the consultant committee which prepared this study we have invited representatives of the Federal Reserve Board and of the Office of Statistical Standards, Bureau of the Budget, to sit with us this morning.

Mr. Stanley Lebergott, economist for the Office of Statistical Standards, will represent the Bureau of the Budget, and Mr. Homer Jones, Chief, Consumer Credit and Finances Section of the Office of Research and Statistics, will represent the Federal Reserve Board.

Senator Sparkman, who is a member of this subcommittee, is abroad and sends his regrets at being unable to attend these sessions.

I understand that Professor Tobin is going to substitute for Professor Smithies as chairman of the panel this morning.

Professor Tobin, I suggest that you proceed with the opening statement in your own way, introducing the other members of the panel

either now or as they may be called upon. At the conclusion of the opening statements we will proceed to a general discussion among and between the panel and the members of the subcommittee.

Before you begin, however, perhaps Congressman Talle would like to have a word. I am sure you all know that Congressman Talle was the chairman of this subcommittee a year ago when the subcommittee asked the Board of Governors of the Federal Reserve System to consider exploring with the executive agencies, the adequacy of economic statistics in the areas of inventories, savings, and consumer and business expectations.

Mr. TALLE. Thank you, Mr. Chairman.

I join with the chairman in expressing gratitude to the Federal Reserve Board once more for the cooperation we have received, and are receiving from that very effective agency.

When the five task forces were listed as to names, last year, I was immensely impressed by the exceptionally able talent the Federal Reserve Board had found for carrying on this work, and so I want to thank this group today, as I have other groups, and if I may just for a minute speak of something else, I would like to refer back to our last hearing, when I said that I expected to attend an international conference soon at which over 40 nations would be represented, and that I hoped then to bring up the matter of statistics in other lands.

I had that opportunity in the last week of August, at the annual conference of the Interparliamentary Union held this year in Helsinki, Finland, and I stated at the meeting of the standing committee on economic and financial problems, that we in the United States would be very glad to have the cooperation of other nations in the kind of endeavor that we are carrying on. I am very happy to report to you that my proposal was approved and that the Standing Committee on Economic and Financial Problems of the Interparliamentary Union, which now has a membership of 47 nations, agreed to place the improvement of economic statistics on its study agenda.

I am sure all of us welcome that. We must not expect mighty things to be done in a day, but at least the first step has been taken toward getting improvement in economic statistics in many foreign countries.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Talle.

At this point I should like to insert in the record the report of Consultant Committee on Consumer Survey Statistics organized by the Board of Governors of the Federal Reserve System at the request of the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, July 1955.

(The material referred to follows:)

CONSUMER SURVEY STATISTICS

REPORT OF CONSULTANT COMMITTEE ON CONSUMER SURVEY STATISTICS

*Organized by the Board of Governors
of the
Federal Reserve System
at the request of
the Subcommittee on Economic Statistics
of the Joint Committee on the Economic Report*

July 1955

LETTERS OF TRANSMITTAL

BOARD OF GOVERNORS OF THE
FEDERAL RESERVE SYSTEM

July 11, 1955

The Honorable Richard Bolling, Chairman,
Subcommittee on Economic Statistics,
Joint Committee on the Economic Report,
House of Representatives,
Washington (25) D. C.

Dear Mr. Bolling:

In fulfillment of the request made of the Board by your Subcommittee for an evaluation of gaps in available statistical information covering the fields of savings, business inventories, and business and consumer expectations, there are enclosed copies of the reports of three of the five task groups which the Board organized for the purpose.

The completed task group reports transmitted with this letter are:

1. Report of the Consultant Committee on Savings Statistics;
2. Report of the Consultant Committee on Plant and Equipment Expenditure Expectations;
3. Report of the Consultant Committee on Consumer Expectations.

The report of the Consultant Committee on General Business Expectations is scheduled for completion by August 1. The report of the Consultant Committee on Inventory Statistics is expected to be completed by October 1. These reports will be transmitted to you as soon as received.

The reports are in the same form as submitted to us by the consultant committees concerned. Prior to the hearings to be held by your Subcommittee, the task groups may wish to make minor modifications or editorial changes, but the text will remain substantially unchanged.

If it would be helpful to your Subcommittee in getting the widest circulation and use of these reports, the Board would be glad to

consider publishing them in pamphlet form, apart from the hearing publication. This form of publication would make the reports more readily available to interested public and private organizations and to university and other interested specialists and individuals.

Sincerely yours,

(Signed) W_M. McC. MARTIN, JR., *Chairman*

June 30, 1955

The Honorable William McChesney Martin, Jr., Chairman
Board of Governors of the Federal Reserve System

Dear Sir:

In accordance with your request, we are now transmitting the report of the committee appointed by you to appraise consumer survey statistics, with special reference to surveys of consumer expectations, attitudes, and intentions.

Respectfully,

(Signed) ARTHUR SMITHIES, *Chairman*
HAZEL KYRK
GUY H. ORCUTT
HAROLD C. PASSER
BERT SEIDMAN
SAMUEL STOUFFER
JAMES TOBIN
VERNON G. LIPPITT, *Secretary*

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CONSUMER SURVEY STATISTICS

SUMMARY—CONCLUSIONS AND RECOMMENDATIONS

This report is concerned with an appraisal of the Survey of Consumer Finances conducted by the Federal Reserve Board and the Survey Research Center of the University of Michigan and indirectly with the usefulness of consumer survey statistics in general. Our conclusions and recommendations are:

(1) Survey statistics are indispensable for an appraisal of the economic situation of households and for the understanding and predicting of consumers' behavior.

(2) The Survey of Consumer Finances, while capable of further improvement, is a unique and widely used combination of data on (a) expectations, intentions and attitudes, (b) financial, economic and demographic characteristics, and (c) past spending and saving behavior. This combination of data relating to individual households is essential to the development of the most powerful ways of using survey information for prediction.

(3) The interim surveys on expectations, intentions and attitudes conducted by the Survey Research Center under private auspices are a useful supplement to the Survey of Consumer Finances and could be even more useful if the questions asked in them were readily comparable with those asked in the Survey of Consumer Finances.

(4) The accuracy of the Survey of Consumer Finances on financial magnitudes is open to some doubt. Financial aggregates computed from Survey data are difficult to reconcile with estimates from other sources. But this is a severe test and a difficult one to apply. The sample may be useful for many purposes even though its aggregates do not agree with other estimates. In our view, greater accuracy of Survey data on financial magnitudes would be useful not only for estimation of aggregates but for the prediction of future consumer behavior.

(5) The inaccuracies of the Survey of Consumer Finances in regard to financial data may be due to:

(a) Response errors. It is difficult to obtain complete and unbiased recall of financial magnitudes. Considerable metho-

- dological research needs to be done on methods of minimizing response errors. These problems are especially acute for groups to whom it is especially difficult to apply financial concepts that have meaning for the majority of the population, e.g., farmers and unincorporated businessmen.
- (b) Sample design. Accuracy would be improved by a design that oversamples to a greater extent than at present those population strata where financial magnitudes show the greatest variability. These include high-income households and unincorporated businesses.
- (6) The statistics on expectations, intentions and attitudes have proved to be of some value, but the record is mixed.
- (a) Although the record is short, year-to-year changes in proportions of the Survey respondents with favorable expectations, intentions and attitudes seem to have been useful in predicting the general strength of consumer demand, notably at times of economic change in early 1949 and 1951. Better aggregate predictions for particular items may require specific-purpose surveys, e.g., the Crowell-Collier automotive survey which has an extremely good record of predictions.
 - (b) Survey of Consumer Finances reinterview data suggest that buying intentions are useful but by no means perfect predictors of the subsequent buying behavior of individual respondents. Those who intend to buy are, other things equal, more likely to buy than others. But they are nevertheless a minority of total purchasers.
 - (c) It has not yet been proved that expectations and attitudes, other than buying intentions, add to the predictive value of survey data. But they are easy and inexpensive to obtain; indeed these questions are valuable if only because they greatly help in establishing "rapport" between interviewer and respondent. They also may have considerable interest in themselves.
- (7) The predictive value of the statistics on expectations, intentions and attitudes may be limited because households do not plan very long in advance and because their attitudes and expectations

are highly unstable. Such limitations would suggest the need for surveying expectations, intentions and attitudes more frequently than annually.

(8) Publication of the results of the Survey of Consumer Finances in the *Federal Reserve Bulletin* has been far from complete and methods of presentation of the data have frequently been changed without substantial improvement. Also the original data from the Surveys have not been made readily available to research workers outside the collecting agencies. The usefulness of the Survey, especially for analytical purposes, has thereby been materially diminished.

(9) The Survey of Consumer Finances is conducted with a high degree of professional competence and the analyses made possible by the available funds are of a high caliber. However, insufficient resources have been available for analysis of the data, testing their reliability and experimenting with various alternative hypotheses concerning consumer behavior.

(10) If no appreciable increase in the present budget for the Survey of Consumer Finances is feasible, we recommend:

- (a) That the Survey Research Center regularly draw half of its sample for the Survey of Consumer Finances from the sample of the previous year and thus secure reinterview data for testing both expectational and memory statistics.
- (b) That periodic conferences be held with respect to the scope, methods and analysis of the Survey of Consumer Finances. University research workers and users of Survey data from the fields of business, labor and agriculture might well be invited to participate.
- (c) (i) That the Federal Reserve Board or the Survey Research Center make special arrangements with particular research centers to undertake analytical research on Survey data;
(ii) That procedures be established to provide research workers with adequate access to Survey data, and in view of the fact that a similar problem confronts many Government agencies, that a committee of the American Statistical Association study the problem of how to make original data of Government agencies more readily available to research workers.

- (d) That the Surveys provide data that are comparable over as long a period as is feasible.
 - (e) That published data be accompanied by indications of sampling errors whenever feasible, and that a detailed discussion of sampling errors be made available to technical users.
 - (f) (i) That the interim Survey use a sample that overlaps in whole or in part the sample of the previous Survey of Consumer Finances;
(ii) That the questions on expectations, intentions and attitudes be consistent in the two surveys;
(iii) That statistics from the interim Surveys be republished as part of the reports on the Survey of Consumer Finances;
(iv) That the published reports of the interim Surveys include relevant data from the annual Surveys.
 - (g) That the Bureau of the Budget and the agencies engaged in conducting surveys cooperate to eliminate avoidable inconsistencies and to explain justifiable differences in the various survey statistics.
- (11) We believe that additional Federal and private funds can usefully be spent on consumer surveys, but it is not our province to suggest how much. Additional expenditures for the Survey of Consumer Finances and related surveys can usefully be incurred for:
- (a) A larger and more stratified sample.
 - (b) More frequent and inclusive interim surveys.
 - (c) More extensive reinterviews.
 - (d) More inclusive publication of survey results.
 - (e) More complete financial data.
 - (f) More information concerning stocks and acquisition of durable goods and houses.
 - (g) More analysis of results and experimentation in methods.
 - (h) More checks on accuracy of survey results.

I. INTRODUCTION

The Committee has centered its attention on the Survey of Consumer Finances, conducted by the Federal Reserve System in cooperation with the Survey Research Center at the University of Michigan. The Survey of Consumer Finances is the one Federal

Government source of regularly published statistics on consumer expectations, intentions and attitudes, and, in addition, includes the most comprehensive information on the economic situation of households published at regular intervals.¹ With the Survey of Consumer Finances as the focus of our attention, we shall refer tangentially to other government or private surveys, including other surveys by the Survey Research Center. However, we have not been able to cover the large and growing field of "market research" which is concerned mainly with relations of consumers to particular products and does not yield published statistics.

We stress at the outset that, particularly where attitudes and intentions are concerned, we are dealing with a new and experimental field. While many of our conclusions are therefore tentative, we have no doubt that consumer surveys open up interesting possibilities both for those engaged in the practical operations of government and business and for the research investigator.

Origins of the Survey of Consumer Finances. The Survey of Consumer Finances originated from the efforts made during World War II to appraise the Federal Government's bond selling campaign. The Division of Program Surveys in the Department of Agriculture undertook to analyze for the Treasury the distribution of holdings among individuals in different economic circumstances, their motivation for buying bonds and their intentions concerning their bond holdings. These surveys proved distinctly useful and led to significant changes in the Treasury's bond selling techniques.

As the war drew to a close, the Federal Reserve Board became interested in the problems of postwar inflation and particularly the effects on consumption of the large accumulations of cash and Government bonds that had occurred during the war. Consequently, at the request of the Board, the Division of Program Surveys conducted "A National Survey of Liquid Assets" for the Board. In this survey, "information was obtained on 1945 income and changes in income during the year, on liquid asset holdings at the start and end of the year, and on 1945 saving and changes in saving during the year. In addition, questions were asked to elicit respondents' attitudes toward saving, their intended use of asset holdings, their

¹ The term *household* is used in a generic sense in this report; it refers to the consuming unit whose situation and behavior is studied in a consumer survey.

likely purchases of consumer durable goods, houses and other assets and the manner of financing such purchases, and finally their prospective saving in the light of changing conditions."²

This survey, completed in 1946, was the forerunner of annual surveys on consumer finances sponsored by the Federal Reserve Board in every succeeding year. Those surveys were conducted for the Board by the Survey Research Center of the University of Michigan. This Center was set up after the Division of Program Surveys of the Department of Agriculture was dissolved and has been directed by the senior officials of that Division, Rensis Likert, Angus Campbell, and George Katona.

As economic conditions changed, the Federal Reserve Board became interested in consumer indebtedness as well as in liquid assets. The surveys also attempted to appraise consumer interest in non-liquid assets and their preference between stocks and bonds. Attempts were made to discover consumer intentions with respect to specific types of durable goods such as houses, automobiles and household appliances. And more elaborate information on income and savings was sought.

Since the 1951 Survey, however, there has been some contraction in the range of subjects considered by the Survey—although some subjects have been treated more intensively. It is particularly notable that the Survey has not collected information on enough components of saving to permit a total estimate to be made. This omission has been in consequence of an alleged discrepancy between Survey data and data obtained from other sources.

In addition to the Survey of Consumer Finances, the Federal Reserve Board sponsored midyear interim surveys in 1947, 1948 and 1949. The Survey Research Center has since 1950 conducted interim surveys which have been financed from private sources. These surveys are chiefly concerned with attitudes or expectations. They do not seek information on the detailed economic position of particular consumers, but rather attempt to obtain current estimates of the national consumer outlook with respect to economic conditions and future purchases.³

² "A National Survey of Liquid Assets," *Federal Reserve Bulletin*, June-August, 1946.

³ Federal Government agencies have collected economic data in many other consumer surveys, but none of them deal with consumer expectations, intentions and attitudes, and most

Content of the Survey of Consumer Finances. The Survey of Consumer Finances is based on a stratified probability sample of 3,000 spending units, and the interim Surveys currently use a sample of about 1,000. The annual cost of the Survey of Consumer Finances is about \$150,000 and of the interim Surveys \$35,000. Our appraisal of the survey method is made mainly in the context of cost figures of this order of magnitude. But we shall also indicate how the results could be improved if substantially larger sums were available to enlarge the sample, to extend the coverage of the inquiry, or to use more expensive survey techniques.

The Surveys concentrate on the purchase of durable commodities—houses, automobiles and household appliances; and the acquisition of other assets—cash, bonds and stocks; and the incurring of debt. The Survey Research Center believes that consumers have considerable discretion in decisions concerning such matters, and that they involve a certain amount of advance planning rather than mere habitual response. Hence such actions are often the subjects of explicit expectations and intentions. Further, memory errors are held to be less serious in reports on large expenditures than on day-to-day purchases of food and clothing. The Survey Research Center believes that to investigate small frequent expenditures, as the Bureau of Labor Statistics does, would require far more expensive interviewing procedures. Furthermore, the interviewing techniques required for such an investigation may not be suitable to obtain the best results with respect to attitudes, intentions and expectations.

The annual Surveys provide three types of information on a household basis. The interim Surveys are concerned mainly with the second category, and to a smaller extent with the first.

are conducted at irregular intervals. Hence they were excluded from detailed consideration in this report.

The more important of these other surveys are:

1. The nationwide urban surveys conducted by the Bureau of Labor Statistics in 1917-18 and 1950 in order to determine weights for the cost-of-living index.
2. The nationwide urban and rural surveys conducted by the Bureau of Labor Statistics and the Department of Agriculture in 1935-36 and in 1941, the former in cooperation with the Works Progress Administration and the National Resources Committee.
3. The decennial Census of Population and Housing made by the Bureau of the Census, which includes some economic along with demographic data, such as race, age, education and size of family.
4. The nationwide Census of Agriculture conducted by the Department of Agriculture, along with smaller, more frequent surveys of incomes and spending of farm families in restricted areas.
5. Annual surveys of incomes of households made by the Bureau of the Census.

(1) The current economic and demographic status and recent history of consumer spending units—mainly their income and debt and their liquid asset holdings, and changes in these variables over the previous year; recent purchases of items such as houses and automobiles; age, education, occupation, residential location, race, and size and type of family. (Previously estimates of total asset changes led to estimates of savings.)

(2) Expectations and attitudes of consumers with respect to their current and their future situation and to that of the economy as a whole. For instance, do they feel better off than they did a year ago? Do they think the present is a good time to buy? Do they expect their incomes to increase or prices to rise? Are economic conditions improving or worsening?

(3) Intentions of consumers with respect to the future. Do households have specific intentions to buy houses, automobiles or other durable goods?

Depending on the reliability of the results obtained, the Surveys thus furnish a body of information that is not available from any other source. For each spending unit in a representative cross-section, they provide information concerning many of the variables affecting its consuming behavior. Attitudinal and asset questions could of course be included in a Bureau of Labor Statistics or Department of Agriculture household survey although they have not been in the past. However, unless such a survey were conducted on an annual basis it would not serve the function performed by the Survey of Consumer Finances and the interim Surveys.

Apart from Surveys, the other main sources of data on income and consumption are the national income series of the Department of Commerce, the Securities and Exchange Commission and the Federal Reserve series on liquid asset holdings, and banking statistics on money holdings. These statistics relate only indirectly to household behavior. The Securities and Exchange Commission saving series, for instance, includes savings of unincorporated businesses and trust funds as well as that of individuals. Moreover those statistics yield only broad aggregates. Consumer expectations can only be inferred from them insofar as it is reasonable to assume that consumers' expectations are some form of extrapolation of past time series. This method of dealing with consumer expectations is clearly

inferior to the results of an ideal survey. Whether or not it is inferior to the information yielded by the surveys that are at present feasible is a question that we shall have to examine.

Plan of the report. In Chapter II we shall consider the need for survey data in general. Since survey data are relatively expensive and difficult to obtain with precision, traditional by-product data should be used to the maximum extent and survey information should supplement rather than replace the traditional kinds of information. This point of view leaves an important place for surveys that will provide information concerning individual households.

In Chapters III and IV we attempt to appraise the usefulness of the Survey of Consumer Finances. We consider particularly the accuracy of the Survey statistics and the contribution that attitudinal data have made to economic prediction.

Chapter V will be concerned with the technical problems of conducting the Surveys. We are concerned particularly with the question whether the Survey of Consumer Finances uses interviewing and sampling methods that produce maximum efficiency and validity.

Chapter VI will give our conclusions concerning the changes in emphasis that we feel should be made in the Survey of Consumer Finances and the ways in which we think Survey techniques can be strengthened and improved. We emphasize that Survey techniques are still in their experimental stage and should not become molded in a particular pattern. The techniques employed so far, though still imperfect, have proved promising enough to deserve continued governmental and private support.

A bibliography lists references which involve presentation or analysis of data from consumer surveys conducted by the Survey Research Center.

Appendix A gives information about the Interim and Reinterview Surveys made by the Survey Research Center, and Appendix B presents excerpts which summarize points made in the responses to the Committee's questionnaire sent to users of survey data.

II. NEED FOR CONSUMER SURVEY STATISTICS

Consumer surveys are the one source of direct information concerning the individual spending unit or household which makes the

decisions to spend, to save, to hold various kinds of assets or to incur debts. Without surveys the behavior of consumers must be inferred indirectly from statistics on sales of commodities and services, from construction figures and from the records of banks and other financial institutions; these latter sources yield statistics that may not be consistent with each other and they rarely permit distinctions to be drawn between various classes of consumers.

Depending on their reliability, consumer surveys therefore have a number of advantages over indirect sources of information. While not all of these are by any means fully realized by the Survey of Consumer Finances at the present time, they can be realized by elaborations and extensions of the methods now employed. In particular:

(1) Surveys provide statistics, otherwise unavailable, on a number of factors, such as intentions and attitudes, that may affect consumer behavior.

(2) Survey statistics are related directly to the decision-making consuming unit—the individual household. Thus for each household surveyed a consistent body of information concerning its economic situation, its intentions and its attitudes is obtained. Further, if some of the households included in the survey are interviewed in successive periods, the consistency and the reliability of the data can be still further improved.

(3) Surveys can provide the data for compiling distributions of households according to financial factors such as income, assets, debt, net worth; according to their holdings of houses, automobiles or other durable goods; or according to the scale of their purchases or intention to purchase. Also, cross-distributions, for example, classifications showing how the intentions of a household to buy are related to its income, can be compiled.

(4) Surveys may be superior to other sources of information in providing national aggregate statistics. National figures for expectations or intentions of course can only be obtained through surveys. But it is possible that the directness of the survey approach can yield superior estimates of data that can be obtained from other sources. For instance, it is an open question whether aggregate individual saving can best be estimated by the indirect methods of the Department of Commerce and the Securities and Exchange Commission

or by the direct approach of sample surveys. The former estimates, obtained indirectly, yield estimates that include the saving not only of individual households but also a residual sector of the economy covering unincorporated businesses, trust funds, and nonprofit institutions. On the other hand, the consumer surveys, while they do go directly to the problem, are subject to the inevitable difficulties of deriving a single national figure from sample results. Nevertheless, it is possible that, despite these difficulties, sampling method can yield greater accuracy for aggregate individual saving.

(5) Surveys permit greater experimental flexibility in the choice of concepts than do other statistical sources. Where statistics concerning consumer behavior are obtained as by-products of accounting records, the concepts used may be limited by the sources of the data. In explaining consumer behavior, for instance, one cannot tell in advance whether liquid saving or total saving is the more relevant to household decisions and motivations. The flexibility of survey methods permits experiments to be made and a decision to be reached on which of these concepts of savings is the more useful for given purposes.

(6) Finally the survey technique can obtain data promptly. Many of the indirect sources of data are available only on an annual basis and some months beyond the end of the year usually elapse before the figures can become available. Sample surveys on the other hand can be conducted as frequently as desired and their results can be processed rapidly.

Uses of survey information. Consumer surveys can serve a variety of uses. First, information for appraising the current and past economic situation of families is needed for a wide variety of purposes. The Government cannot draw up a tax bill intelligently without knowledge of the distribution of individual incomes. It needs to know how liquid assets are distributed among income classes for effective management of the national debt. Likewise, private businesses, in making their production and selling plans, need to know how the ownership of houses and durable consumer goods are distributed among various economic groups. Unions want this information to measure the welfare of their members and to gauge employment prospects. The economic situation of the lowest income groups has always been a matter of social and political con-

cern, and for the consideration of such questions reliable statistics provide a better basis than vague speculation.

Secondly, economic forecasting, and forecasting of consumers' expenditures in particular, has become increasingly important in both governmental and private economic circles. The Federal Government has found that in order to carry out its responsibilities under the Employment Act of 1946, estimates of consumers' expenditures for the forthcoming year are indispensable. While such forecasts have proved to be difficult, we have no doubt that survey statistics can improve their quality.

Forecasters differ widely in their methods. Some may rely on interpretation of available data in the light of their judgment and experience. Others may prefer to use elaborate mathematical formulas. But whatever method is used, understanding of how consumers have behaved in the past, and why, can improve forecasts. Survey statistics, obtained directly from decision-making households and covering a wide range of information, offer the best prospects of increased understanding of consumer behavior.

Despite the usefulness of survey data, we emphasize that neither they nor any other data concerning consumers alone can furnish a full explanation of consumer behavior or forecasts of consumption. Consumer sovereignty is at least partially limited by producer activity. Emergence of new products, advertising methods and pricing policies necessarily change consumers' tastes so that a complete explanation of consumers' behavior must take full account of the interaction of producers' and consumers' decisions.

Furthermore, decisions with respect to Government expenditures and taxation or with respect to private capital outlays produce changes in consumers' incomes that are likely to bring about revisions of previously expressed intentions. Forecasts of consumer expenditures thus must be based on forecasts of the behavior of the whole economy.

The usefulness of survey statistics for appraising the economic situation of households requires no further discussion here. We therefore devote the rest of this chapter to a discussion of the need for and uses of survey statistics for purposes of prediction and understanding.

Need for more powerful predictive instruments. The need for survey statistics as a basis for prediction can best be demonstrated by inquiring how far we can go without them. In their absence, the forecaster has to rely mainly on the past behavior of national aggregate statistics, such as total expenditures on various classes of goods or services, total assets of all households combined and their total incomes. While such investigations have shed considerable light on economic processes, their results concerning consumer behavior are admittedly far from definitive. Numerous relations among the economic variables with widely differing implications can be made to fit the available time series reasonably well.⁴ The methods used can undoubtedly be improved, but we are convinced that the difficulties of the time series approach cannot be completely removed.

In the first place, the indirect sources of statistics may not yield the types of information needed to explain consumers' behavior. It may not be enough simply to regard all consumers as a group responding in the same way to income or asset changes. Differences between the behavior of consumers with low and high incomes or between urban and rural consumers may require that changes in the distribution of income or shifts of population between country and city be taken into account. Moreover, changes in consumer psychology may exert independent influences on consumption.

Secondly, time series are usually available for a number of years that is too limited to provide adequate tests of the various hypotheses that can plausibly be made. Merely to estimate a relationship requires at least one more observation than the number of variables whose influence on consumption is to be taken into account. Thus, given a hypothesis that consumption has a straight line relation to income, both the slope and the level of the line relating the predicted value of consumption to income need to be estimated. This requires at least two distinct observations relating the value of consumption to the corresponding value of income. Similarly, if four or five explanatory variables are used, then at least five or six distinct observational points are needed in order to make an estimate.

⁴ See Robert Ferber, *A Study of Aggregate Consumption Functions*, National Bureau of Economic Research, 1953. See also the review of this study by James Tobin in the *American Economic Review*, September 1954, pp. 667-671.

But to test the validity of such an estimate requires many more observations. A perfect fit can always be obtained if the number of observations is no greater than the number of variables—even though the variables may have no relationship to each other whatever. Such a formula clearly has no predictive usefulness. Only where a sufficiently good fit is obtained with many more observations than variables has the investigator any right to expect that he has selected a significant formula.

The fact that there are a great many possible explanatory variables emphasizes the need to increase the number of observations. This follows from the fact that the possibility of obtaining any given degree of fit even in the absence of any real relation increases with the number of variables used in a formula. Even in the absence of any special problems connected with economic time series, it is clear that the amount of observational evidence likely to be available is too small to bear the burden placed upon it.

When consideration is given to the special difficulties involved in using highly aggregative economic time series, it becomes even clearer that not only are too few observational points available but the ones that are available can only contribute to a limited amount of testing. One of these difficulties is that successive observations in time may be related to each other and the testing power of such data may be such that 20 or 30 annual observations are of no more use in testing proposed relations than five to 10 independent observations.

A second limitation of the aggregative time series data has to do with the fact that many of the explanatory economic time series move closely together. If, for instance, income and assets have followed much the same pattern over time it is difficult to determine their respective influences on consumers' expenditures. Again 20 or 30 observations may be of no more use than a very small number in which these variables moved independently.

A third limitation of this type of data arises from the fact that it is generated by a whole system so that a variable such as aggregate consumption is not only affected by income but also affects the generation of income. Such feedback also greatly reduces the testing value of the data and forces the use of very complicated and not fully developed techniques of statistical inference.

Some of these difficulties could be reduced if longer time series were available. But to deal with long series gives rise to new difficulties. The further a series extends backward in time, the less relevant it becomes to the consumption patterns of today, since consumers' tastes are constantly changing. Or if annual totals are broken down into quarterly or monthly figures, the successive observations become less independent of each other. In short, no amount of time series information is likely to provide a satisfactory basis for prediction.

Contribution of survey statistics to prediction. The inadequacy of aggregative time series analysis as the basis for prediction has led economists to seek in survey data a solution for their problems—in two different ways. First, consumer surveys, as indicated at the beginning of this chapter, can provide the forecaster with prompt information on a wide range of additional variables that are likely to have a bearing on future consumption. In this connection, of course, information concerning intentions and attitudes is of particular interest. Secondly, the cross-section data provided by consumer surveys can provide a way around some of the difficulties inherent in time series analysis.

If consumers planned their purchases of houses, automobiles, refrigerators, and the like some months in advance, and if they adhered definitely to those plans, the short-run forecasting problem could be completely solved by collecting statistics of intentions to buy. But it is known that consumers do not plan in this rigid way. Many intentions to buy do not result in actual purchases and many purchases appear to result from plans that have been made, if at all, a very short time before the actual purchases.

Nevertheless, many forecasters feel that statistics on intentions to buy are useful additions to their equipment. Even though the intentions expressed for a particular year may not themselves be a reliable indicator of purchases in the next year, the fact that intentions to buy have increased or decreased may aid forecasters in appraising the results of predictions based on historical information. In this sense statistics on intentions provide a new and possibly useful time series which can improve the results of time series analysis but cannot remove the difficulties inherent in it.

Statistics on such general attitudes as whether or not this is a good time to buy, whether prices are expected to rise or fall, or whether the consumer feels better or worse off than he did a year ago furnish no direct evidence of intentions but they too may be used in conjunction with historical data as factors that are possibly relevant in determining future behavior. It is possible that consumers may not behave in a manner that can be accounted for by economic factors alone, and successful prediction may require that "psychological" influences be taken into account.

Data on intentions or expectations can be used either at the national aggregative level or they can be used in connection with the distributions obtained from other survey information. Expectations may vary among groups according to their incomes or holdings of liquid assets or their existing stocks of durable goods. It is possible, therefore, that the use of expectation data in conjunction with other survey information may yield more fruitful results than the association of expectational data with aggregate time series alone.

The usefulness of surveys for predictive purposes, however, depends by no means entirely on the provision of data on intentions or attitudes. The more complete information they provide on the current and past situation is useful in its own right. For instance, a forecast of sales of automobiles or refrigerators that takes into account the existing ownership of those items broken down by income groups is likely to be superior to one that is merely based on aggregate statistics.

With respect to the testing of hypotheses and the derivation of prediction formulas, the use of survey data can reduce some of the difficulties of time series analysis. Whereas with aggregate time series only one observation per year may be available, with annual surveys there will be several thousand per year. Even though many of the sources of variations in individual behavior may not be relevant for a prediction of aggregate behavior, the gain in useful information is still very great. This gain is even greater if the same households are reinterviewed one or more times. Then it is possible to determine the extent to which differences among households at a given time are indicative of changes in the behavior of

the same household over time as its circumstances change. (There are, however, technical limits to the number of times a given household can be usefully reinterviewed; and a sample cannot continue to be a representative cross-section if it consists exclusively of previously interviewed respondents.)

Furthermore, with the use of survey data many of the problems associated with highly aggregative economic time series analysis either do not arise or else are more manageable. Two of the difficulties with aggregative time series are their limited range of variation and the high correlations often found among explanatory variables. With survey data it is often possible to find subgroups which have been subjected to extreme values of some of the variables. And it is often possible to find a great deal of independent variation between the various possible explanatory variables. This makes possible investigation of their individual importance.

With survey data the "feedback" difficulty noted above is considerably reduced. Even though a variable such as aggregate income may be increasing it will be possible to make use of the fact that the incomes of many households will be decreasing. Further, many problems connected with the lack of independence of successive observations of aggregate economic time series either disappear or become manageable when dealing with individual household data.

Another point deserves emphasis in view of a criticism that is frequently made of survey statistics. While the results of a given survey may not yield accurate national totals, they may still be useful for predicting relationships among economic variables. To illustrate: suppose consumers habitually understated both their income and their spending. The national totals derived from the survey would also be understated, but the relationship between survey income and survey expenditure may come close to the relationship for the nation as a whole. This possibility, that data unsuitable for estimating aggregates may yet yield useful predictive relations, has frequently been overlooked. In view of its importance we attach a supplementary note illustrating the point at the end of this chapter.

Adequate survey data, while not dispensing with the need for aggregative time series, can greatly reduce dependence on them for

testing hypothetical relations. However, since it is the aggregates we usually wish to predict, they must be used for control purposes and as a final check on prediction formulas derived from less aggregative data.

We thus conclude that the possibilities of improved prediction of consumers' behavior depend heavily on the availability of adequate survey statistics. Whether these possibilities are realized will depend on the skill, effort, and money devoted to their collection and analysis. In the next two chapters we consider how far the Survey of Consumer Finances, together with other surveys, meets the demonstrated need. We discuss particularly the accuracy of the statistics and the contributions of attitudinal statistics to prediction. The full use of survey statistics for prediction, as discussed in this chapter, has been by no means fully reviewed. Such a review must await the gradual cumulation of research.

SUPPLEMENTARY NOTE: Household survey data could be highly useful for finding predictive relations, even if they yielded grossly inaccurate estimates of aggregates, averages and cell frequencies of single or multivariate distributions.

The following hypothetical example is included to illustrate the above possibility. The example given is an extreme one chosen to make the point.

The selected objective is estimation of the relation, in a population of households, between two variables. These variables, which will be denoted by X and Y , could be some such variables as household consumption and household income. For the population of households under discussion there will exist some joint distribution of the variables X and Y . We will assume that if the values of X and Y for each household were known and plotted as a point in a two-way scatter diagram the joint distribution of X and Y for these households would look as in Diagram 1.

Now suppose that, in order to find out something about the way in which Y and X are related in this population, a small sample of households is selected by random drawing and the values of Y and X are determined for each selected household. The random drawing of a household and determination of its values of Y and X corresponds to the random drawing of a point from the scatter of points

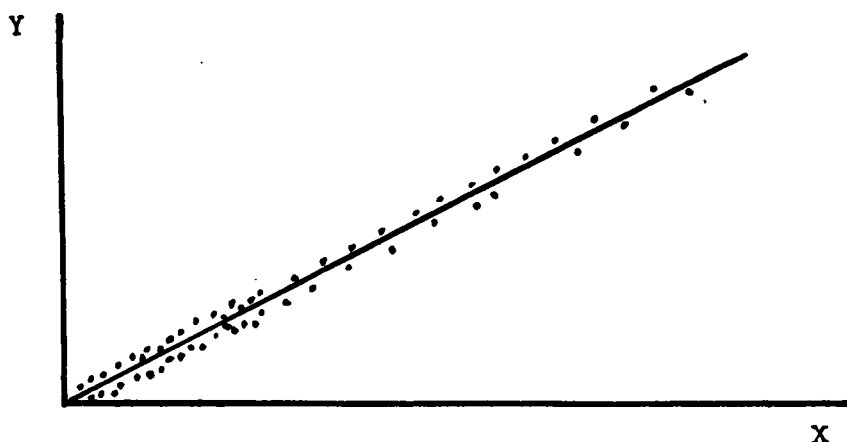


Diagram 1

on Diagram 1. To take an extreme case, let us assume that only two points are drawn at random. From two such points not much could be learned about the distribution of X or about the distribution of Y . Obviously the mean of two such X 's or of two such Y 's would in general yield grossly inaccurate estimates of the mean value of X or the mean value of Y for the population of households. From two such points little or nothing could be learned about the percentage of households which had values of X or Y between any specified limits. Nor could these sample results be blown up to yield useful estimates of the aggregate value of X or Y for this population. Nevertheless, it is clear in this case that selection of any two points not too close together would correctly show that Y and X are related in this population. Not only would this be shown but in this case two such points would permit a fairly accurate determination of the straight line which gives the average or expected value of Y for each X .

III. ACCURACY OF SURVEY RESEARCH CENTER DATA

Accuracy is one criterion for evaluating data from the Survey of Consumer Finances. Data are "accurate" if they measure what they are intended to measure. This is quite apart from their usefulness in predicting the future or in explaining economic processes.

Errors in survey data may result from several causes. One cause

of error is the sampling process itself. In a probability sample (such as is used by the Survey Research Center) the sampling error is normally known and can be allowed for in the use of the data. A second cause of error results from the respondent himself. He may provide spurious information because he does not know or remember the correct information or because he fails to understand the question. He may give false or incomplete information deliberately. Or he may provide no information at all because he simply refuses to answer the question or because he cannot be contacted.

The loss occasioned by errors in survey data will be more or less serious depending on the uses made of the data. For example, a constant bias for all families in reporting their incomes would introduce error in estimates of aggregate family income, but would not be a serious handicap to an investigator studying spending patterns for families at various income levels. To find out how serious the survey errors may be, tests are needed to determine the nature and magnitude of the errors.

There are several tests of accuracy which can be applied to sample survey data. One is the internal consistency of data obtained in a single survey; a second is the stability of data obtained from successive surveys; and a third is the comparison of the data with data obtained in other ways which supposedly measure the same phenomena.

It is clear that these three tests differ in their effectiveness in detecting the several kinds of errors. Because sampling errors can be estimated from the sample design itself, the purpose of the accuracy tests is to provide a basis for judging the response errors (including nonresponse). Internal consistency within a single survey can be used as a test only if there is some well established principle which can be set up as a standard. The lack of empirically tested propositions about consumer behavior limits this test to the accounting identities such as income equals expenditures plus savings, and assets equal liabilities plus net worth. These identities are useful as checks on the financial data supplied by individual respondents and have been so used by the Survey Research Center. One of the reasons that the Survey of Consumer Finances should include (as it has previously) questions concerning savings and net

worth is that these permit use of the accounting identities to provide a rough check on the answers of the individual respondents.

The second test, stability from survey to survey, is useful where data or relationships can be expected to remain the same from one survey to the next. The successive surveys can then be thought of as successive attempts to measure the same and unchanged phenomenon and therefore the data should be identical or nearly so, such as the percentage distribution of families by age of head. What this test does not reveal, of course, is any persistent biases in the data.

The third test is comparison with data obtained by other methods. For example, aggregate family income estimates based on Survey data may be compared with estimates from Census surveys or with the national income accounts. Such checks are useful because they can reveal the presence of persistent biases which the second test cannot detect. There are severe limitations to the usefulness and validity of this method of checking sample survey data, however, and these limitations should not be overlooked.

The most obvious limitation is that much of the Survey Research Center data is unique (especially the attitudinal data and the frequency distributions of many economic variables) and therefore no outside data for checking are available. Even where such data exist, there remain important problems. First there is the question of the accuracy of the outside data which are being used as the standard. Some of the comparable data are also obtained by survey methods and are subject to the errors discussed above. In some instances the outside data are obtained by a complete census of the population. There is a tendency to assume that a census is more accurate than a sample survey merely because a complete count is involved. It should be stressed, however, that because of difficulties in training and supervising interviewers and in editing and coding their replies, a sample survey may produce more accurate data than a complete census. This principle is well illustrated from another field, namely industrial inspection of production runs where inspection by samples (statistical quality control) has been found in many instances to be much superior in accuracy to 100 per cent inspection.

Where the data are obtained not from a special purpose census

but as the by-product of governmental activities, the questions of the accuracy of the data are also present. These questions are especially pertinent where considerable adjustments to the data collected by the original agency are required before their use by economists and statisticians.

Apart from the problem of the accuracy of the data with which the sample survey data are being compared, there is the problem of the universe to which each set of data pertains. In most cases, the outside data are not exactly comparable with the sample survey data and adjustments to allow for differences in coverage must be made. These adjustments are usually no more than rough guesses and may therefore be in error.

To summarize, most comparisons of survey data with data obtained by other means will be in terms of national aggregates because the Survey Research Center data that relate to joint frequency distributions are in most instances unique. In making the comparison between survey results and aggregates obtained by other means, cognizance must be taken of three possible explanations of discrepancies: (1) errors in the survey data, (2) errors in the national aggregate, and (3) errors in the estimates of the reconciliation adjustment items.

A further drawback to testing the accuracy of the sample Survey data by comparing with other national aggregates is that the main purpose of the sample Survey data is not to provide an estimate of a national aggregate but to provide frequency distributions and, especially, joint distributions of the various economic, demographic and attitudinal variables. The blowup to a national aggregate is based upon the mean of the sample, but the sample which is best suited to obtain a frequency distribution is not necessarily (or even usually) best to determine the mean of the universe. Consequently to test the accuracy of survey data by blowup to a national aggregate may not be an appropriate procedure, but it is the only method available for much of the data.

Evaluation of the economic data. Some of the economic data collected in the Survey of Consumer Finances can be compared to national aggregates obtained from other sources. One of the most important is personal income. The mean income per spending unit in the Survey can be blown up by the total number of spending

units to obtain an estimate of total money income. This aggregate is similar in concept and universe measured to the personal income estimates of the Department of Commerce.

The principal difference between the concept of income used by the Department of Commerce and that employed in the Survey of Consumer Finances is that the Commerce concept includes income in kind and employer contributions to private welfare and pension funds. In terms of the universe covered, the Survey does not include military personnel, transient elements of the population, nonprofit institutions, private trust funds, and private pension, health and welfare funds.

Through published data it is possible to subtract from the personal income estimates of the Department of Commerce in kind (including food and fuel produced and consumed on farms), employer contributions to private welfare and pension funds, and the pay of military personnel. Personal income data, adjusted in this manner, are compared to Survey income data in Table 1.

TABLE 1
PERSONAL INCOME

Year	Survey of Consumer Finances	Department of Commerce, adjusted ¹	Discrepancy	Ratio of Survey data to Commerce data
	(Billions of dollars)			(Per cent)
1946.....	133	160	-27	83
1947.....	161	176	-15	91
1948.....	176	194	-18	91
1949.....	166	191	-25	87
1950.....	187	210	-23	89
1951.....	201	232	-31	87
1952.....	218	244	-26	89
1953.....	249	259	-10	96

¹Excludes salaries of military personnel, employer contributions to private pension and welfare funds, and income in kind. This adjustment takes into account only the major items and is not so complete as that carried out by Selma Goldsmith. However, the ratio of Survey data to adjusted Commerce data is nearly identical. See *Studies in Income and Wealth*, Vol. XIII, National Bureau of Economic Research, 1951, p. 284.

Table 1 indicates that the personal income estimate of the Survey of Consumer Finances has averaged about 90 per cent of Commerce personal income, after adjustment for several of the differences in concept or coverage. Perhaps the most important differences not taken into account in Table 1 are the individuals and institutions not included in the Survey data (transients, nonprofit institutions, etc.) but who are included in the Commerce data.

Some segments of the Commerce income estimates are firmly grounded in comprehensive, accurate data while other segments have a much more uncertain basis. An example of the latter is the income of unincorporated business and professional enterprises. The Commerce income estimates are therefore only an approximation of true personal income but, nevertheless, probably a very close approximation.

When account is taken of the fact that there may be errors in the Commerce estimate of personal income and that there are differences in coverage not accounted for in Table 1, it is clear that the personal income estimates of the Survey of Consumer Finances are reasonably consistent with the Commerce data. This consistency represents a high degree of achievement by the Survey of Consumer Finances. Even when a respondent is willing to report his income, there is always the possibility that he may forget such types of income as interest on a savings account, dividends, or wages from part-time work. Such omissions (and other sources of error) must have been quite small in the Survey of Consumer Finances.

The distribution of spending units by size of income as given in Consumer Finances can be compared to the income distribution data of the Current Population Surveys conducted by the Bureau of the Census. Since the population coverage, the income concept, and the time reference in the two surveys are almost identical, the income distributions should be the same.

A study of the income distribution data of the two surveys showed that they have been fairly similar. A consistent difference, however, for the three years compared (1945, 1946, 1947) was the substantially higher proportion of units with incomes of \$10,000 and over in the Survey of Consumer Finances distributions. This difference was attributed to the following factors: (1) Survey interviewers ask more questions about income, (2) the Survey respondents were more often the income earner, not the housewife, and thus provided more complete information, (3) the Survey sample design makes a more adequate allowance for the nonresponse rate of high income families.⁵

In 1950 the Census Bureau and the Survey Research Center cooperated in a matching study to probe more deeply into the rea-

⁵ *Studies in Income and Wealth*, Vol. XIII, pp. 493-502.

sons for differences in the income distributions. The Census Bureau interviewed a subsample of the households which were included in the Survey of Consumer Finances. The Census surveying was done several months later, and there were frequently sizable discrepancies in incomes reported by a given household in the two surveys. Nevertheless, this study indicated that the Survey of Consumer Finances tended to miss some of the lower income units in sample addresses.

The important conclusion from these SCF-Census comparisons is that nearly all of the factors which can be used to explain the differences between the two surveys suggest that, except for the lower income groups, the Survey of Consumer Finances secures the more accurate income distribution. In short, this particular comparison of Survey data with other data is very favorable to the Survey.

The savings data of the Survey can be compared with the Securities and Exchange Commission data. The differences between these sets of data in concept and universe are considerable and a very accurate or complete reconciliation is not possible. Irwin Friend has, however, prepared a reconciliation which is no more than partial and approximate and which he describes as "quite rough." The results of this reconciliation are shown in Table 2.

TABLE 2
HOUSEHOLD SAVING

Year	Survey of Consumer Finances, adjusted	Securities and Exchange Commission, adjusted	Discrepancy	Ratio of SCF to SEC
	(Billions of dollars)			(Per cent)
1946.....	11.3	11.3	0.0	100
1947.....	6.3	5.5	0.8	115
1948.....	7.9	9.6	-1.7	82
1949.....	3.8	7.1	-3.3	54
1950.....	9.7	11.7	-2.0	83

Source.—Irwin Friend, with the assistance of Vito Natrella, *Individuals' Saving*, John Wiley and Sons, 1954, p. 58.

Although there are substantial differences between the two series in Table 2, agreement is actually quite close when account is taken of the difficulties of reconciliation and of obtaining information about liquid assets by Survey methods. The two series change in the

same direction from year to year, and this alone represents a high degree of agreement.

Unfortunately, the relatively good agreement between the two series cannot be the basis for very positive judgments about the accuracy of the Survey saving data. The reconciliation is too incomplete and too subject to error. The original SEC data are in themselves subject to a considerable degree of error.

That the agreement in Table 2 is not very significant is further borne out by the fact that when saving is divided into liquid and nonliquid categories, the Survey data and SEC data are quite different.

For example, the cumulative totals for saving in liquid and nonliquid forms for the years 1947-1950 as obtained in the Surveys are shown below with totals from SEC data adjusted for comparability:

	1947-1950	
	SCF	SEC
	(Billions of dollars)	
Liquid asset change.....	-22.5	+ 7.9
Nonliquid asset change.....	+71.3	+39.4
Total saving.....	+48.8	+47.3

Source.—"Contribution of Surveys to Statistics on Saving," Memorandum to the Committee on Savings Statistics by Homer Jones, Division of Research and Statistics of the Federal Reserve Board.

Some of the discrepancy can be explained from differences in treatment of bank accounts of unincorporated enterprises, but large differences remain.

Perhaps the most important aspect of the Survey saving data is that they are unique, both as aggregates and distributions, in regularly attempting to provide a series of estimates of components of household saving. The SEC saving data cover a sector of the economy which includes unincorporated businesses, trust funds, and nonprofit institutions as well as households proper. These institutions differ widely in their motives to save in various forms and in their decision-making processes.

In view of the fact that accurate data and reliable estimating procedures for segregating household saving from total "individual"

or "personal" saving are not available, it is hard to escape the conclusion that, whatever the difficulties, the only method now available of estimating household saving is by means of surveys. The most fruitful approach would, therefore, seem to be the improvement of the Survey of Consumer Finances saving estimates, both the aggregates and the distributions. This can be done by improving the accuracy of individual responses, altering the sample design and increasing the size of the sample. Both the reduction of response errors and the improvement of sample design would be costly. But a sample survey appears to be the only means of obtaining estimates of household saving, either in the aggregate or for individual households, by kind of saving and by type of spending unit.

The Survey of Consumer Finances secures data on total liquid assets owned by individuals. Liquid assets are defined to include United States Government bonds, checking accounts, savings accounts in banks, postal savings, and shares in savings and loan associations. Aggregates based upon these Survey data have been equal to about two-thirds of the total of these assets estimated to be held by individuals from Treasury and Federal Reserve banking data. Whether this discrepancy is the result of errors in the Survey data is not definitely known, but there is some evidence that respondents under-report liquid asset holdings.

A test of the accuracy of another frequency distribution obtained in the Survey of Consumer Finances is available. In the 1950 Survey, respondents were asked to indicate the value of their house. To evaluate these answers, professional appraisers visited about 600 of the homes and made their own appraisal of the value. The comparison of the two series of estimates is shown in Table 3.

It is evident from Table 3 that the two frequency distributions are quite similar and that the means of the distributions are nearly the same. This general agreement masks the fact that there were sizable discrepancies in many individual cases. In only 37 per cent of the cases were the respondents' estimates within plus or minus 10 per cent of the appraisers'. In 24 per cent of the cases, the discrepancy was more than plus or minus 30 per cent.

This comparison of Survey data with outside (and presumably reasonably accurate) data is of significance because it illustrates

TABLE 3
VALUE OF OWNER-OCCUPIED HOMES

[Percentage distribution of homes]

Value of home	Respondents' estimates	Appraisers' estimates
Under \$2,500.....	2.9	2.3
\$2,500-\$4,999.....	13.1	13.7
\$5,000-\$7,499.....	19.6	19.3
\$7,500-\$9,999.....	21.5	24.3
\$10,000-\$12,499.....	19.1	16.8
\$12,500-\$14,999.....	6.5	8.8
\$15,000-\$19,999.....	7.2	6.3
\$20,000-\$29,999.....	2.8	2.2
\$30,000 and over.....	1.5	1.4
Value not ascertained.....	5.6	4.7
Mean value of home.....	\$9,560	\$9,210

Source.—Leslie Kish and John B. Lansing, "Response Errors in Estimating the Value of Homes," *Journal of the American Statistical Association*, September 1954, pp. 523, 527.

that a frequency distribution and its mean may be very nearly correct although many individual items are in error. For joint distributions, it is necessary, of course, that the individual items be reasonably free of error. Whether or not this is true can be ascertained neither from aggregates nor from single frequency distributions. And yet this evaluation is important to consumer survey data because many of these data are available in joint frequency distributions.

New home purchase data from the Surveys are compared to new starts of one-family houses in Table 4. Multiple unit dwellings are excluded from the comparison because most of them are probably rental units rather than owner occupied.

TABLE 4
NEW HOMES PURCHASED

Year	Survey of Consumer Finances	Bureau of Labor Statistics ¹	Discrepancy	Ratio of SCF to BLS
		(Millions of homes)		(Per cent)
1947.....	0.6	0.74	-0.14	81
1948.....	0.8	0.76	0.04	105
1949.....	0.6	0.79	-0.19	76
1950.....	0.8	1.15	-0.35	70
1951.....	0.7	0.89	-0.19	73
1952.....	0.6	0.94	-0.34	64
1953.....	0.7	0.93	-0.23	75
1954.....		1.08		

¹One-family, nonfarm housing units started.

Table 4 indicates that, except for 1948, the discrepancy between the Survey of Consumer Finances data and the Bureau of Labor Statistics data is substantial. From 1949 to 1953, new homes purchased, as reported by the Survey, have been only about three quarters as large as new one-family housing starts.

New housing starts are not the same, conceptually, as new homes purchased. It is evident that new homes could be started—that is, constructed—and remain unsold. Also, some one-family houses are rental units and there is a time lag between starts and purchases. These conceptual differences could probably explain much but not all of the cumulative difference of 1.4 million units from 1947 to 1953. In short, the series appear to differ appreciably.

An important question is whether the housing starts data can be considered accurate. These data are derived from building permit data which provide full coverage for areas in which 85 per cent of the permits are granted. The remaining 15 per cent are estimated from a sample of permits granted in the remaining areas of the country. The permits have to be adjusted, of course, for the time delay in the actual starting of construction and for lapses of permits. The nature of the data underlying the housing starts series leads to the conclusion that this series is probably a very good one. It probably measures within several per cent the number of new houses started each year.

It is therefore difficult to escape the conclusion that the Survey of Consumer Finances has seriously underestimated the number of homes purchased each year. The sampling error, at the 95 per cent level of probability, is about 500,000 units, and is large enough to account for the difference between the two series. But if the discrepancy were the result of sampling error, the Consumer Finances data should have exceeded the Bureau of Labor Statistics data about as often as they fell short.

There appears to be a persistent downward bias in the new home purchases data. What is perhaps most disturbing about this bias is that it may be the result of defects in the sampling design such as the failure to include an adequate proportion of the new housing developments on the outskirts of cities. If this is the case, other aspects of the housing data might also be biased. The Survey Research Center is aware of this problem and is seeking its solution.

As another check on the accuracy of Survey findings, the new car purchase data are compared with new passenger car registrations (R. L. Polk) in Table 5.

TABLE 5
NEW PASSENGER CARS PURCHASED

Year	Survey of Consumer Finances	R. L. Polk Company ¹	Discrepancy	Ratio of SCF to Polk
	(Millions of cars)			(Per cent)
1946.....	1.5	1.8	-0.3	83
1947.....	2.8	3.2	-0.4	88
1948.....	3.2	3.5	-0.3	91
1949.....	4.5	4.8	-0.3	94
1950.....	5.3	6.3	-1.0	84
1951.....	4.4	5.1	-0.7	86
1952.....	3.6	4.2	-0.6	88
1953.....	4.9	5.7	-0.8	86
1954.....	4.3	5.6	-1.3	77

¹New passenger car registrations.

It should be pointed out, first of all, that new car registrations are very similar to but not exactly the same as sales of new cars. For example, dealers can register cars in the names of salesmen without actually having sold them. The difference between registrations and sales is probably small, however, and can be neglected in this comparison.

It is evident from Table 5 that the Consumer Finances data have been consistently smaller than the R. L. Polk series by from 6 to 23 per cent. An observed difference in this direction and of approximately this magnitude is to be expected because the Consumer Finances data do not include new car purchases by government, by corporate business, or by the transient and institutional elements in the population. Just how large these categories are can be estimated only very approximately. For example, the Department of Commerce, in estimating consumer expenditures for automobiles, assumes that 30 per cent of passenger car purchases are for businesses, both corporate and unincorporated.⁶ If it can be assumed that a substantial proportion of the new car purchases by business are excluded from Survey data, then the agreement between the R. L. Polk series and the Survey of Consumer Finances data is remarkably good.

⁶ 1954 *National Income Supplement to the Survey of Current Business*, Department of Commerce, p. 116.

The sampling error, at the 95 per cent probability level, is approximately 1 million cars. This is large enough to explain the variation in the discrepancy from 0.3 million to 1.3 million.

Evaluation of the demographic data. One of the best checks of the demographic data is to compare the results of successive surveys. Most demographic characteristics of the heads of spending units can be expected to change very slowly, if at all. Therefore successive surveys should provide the same or very similar data.

The data obtained from the 1947, 1948, 1949, and 1950 Surveys of Consumer Finances regarding age, occupation, and education of the head of the spending unit were compared in a study published in 1950.⁷ The comparison showed very good stability from year to year in the percentage of the heads of households possessing certain characteristics. From this test it would appear that the demographic data of the Survey of Consumer Finances are reasonably accurate.

A similar comparison has been carried out for the demographic data collected in the interim Surveys. These data also show very good stability from Survey to Survey.⁸

Accuracy of recall data. Reinterviews of identical spending units offer another method of testing the reliability of survey information. Some questions should elicit identical responses. Although agreement in response doesn't prove that the answers are correct, disagreement indicates that at least one of the responses is in error. Experience in other surveys has given ample demonstration that a respondent will not always give the same answer to the same question when it is repeated at a later date. In an experiment by Cantil, for example, respondents were reinterviewed by the same interviewers after three weeks. Ninety per cent gave responses in the same 10-year age bracket, 96 per cent identical responses on car ownership, 87 per cent identical responses on telephone subscription, 90 per cent identical voting information, 79 per cent identical responses to an opinion question. Weekly income coded in six categories showed a correlation of .79 between the two interviews.⁹

⁷ *Federal Reserve Bulletin*, July 1950, p. 807.

⁸ George Katona and Eva Mueller, *Consumer Attitudes and Demand, 1950-1952*, Survey Research Center, University of Michigan, 1953, p. 104.

⁹ Reported by Stephen B. Withney, *Consistency of Report of Certain Financial and Demographic Items on Two Reinterview Surveys*, Ph.D. Thesis, University of Michigan, 1951, Chap. 1.

In the light of such experience it is not surprising to find discrepancies between responses in successive Surveys of Consumer Finances. The reinterview occurs a whole year later; the question may not be exactly the same; the interviewer may be different; and in some cases a different member of the same spending unit is the respondent.

On demographic items, analysis of reinterview data indicates high degree of consistency in the Surveys of Consumer Finances. In the 1948-1949 reinterview sample (655 urban cases) 81 per cent of spending units placed the age of the head of the household in the same 10-year bracket both years (six brackets).¹⁰ Given the facts that some heads of household will move in a year from one bracket to the next and that some spending units will have different heads, a perfect correlation is not to be expected. Eighty-one per cent also reported the same category of educational attainment of the head (four categories). Ninety-seven per cent reported the same occupational classification (11 classifications). The equivalent figure for occupation for the 1952-53 sample (1036 urban and rural cases) is 90 per cent.

The record is less reassuring on financial items. In early 1948, the 655 members of the 1948-49 reinterview sample reported their liquid asset holdings at the time of the interview, "at present." In early 1949, the same spending units were asked to estimate their liquid asset holdings "a year ago." Since "a year ago" may be as much as two months more or less than the period between interviews, the answers to the two kinds of questions are not quite conceptually identical. Frequency distributions and summary statistics are very little different for the 1949 "memory" estimates of 1948 holdings than for the 1948 "current" estimates. But this agreement conceals substantial individual discrepancies. The correlation between the two estimates is .62, although if three very large holders are excluded from the sample the correlation coefficient becomes .83. If holdings are classified into six categories (None, \$1-\$199, \$200-\$499, \$500-\$999, \$1,000-\$1,999, \$2,000 and over) and discrepan-

¹⁰ Withey, Chap. 6.

cies within a category disregarded, following are the percentages who gave consistent reports:

Savings bonds	67%
Savings accounts	63%
Checking accounts	74%
Total liquid assets	51%

Some systematic bias, with memory estimates tending to exceed current estimates, is evident in this reinterview sample. But in the main, the discrepancies appear to be random.¹¹

In similar fashion, two estimates of 1947 income were obtained from the same spending unit: a "current" estimate in early 1948, and a "memory" estimate in early 1949. Likewise, the 1952-53 reinterview sample provides two estimates of 1951 income, a "current" estimate in early 1952, and a "memory" estimate in early 1953. The frequency distributions and summary statistics of current and memory estimates are very similar. But these similarities again conceal many individual discrepancies, although the estimates of income are more consistent than the estimates of assets. Withey reports, from his study of the 1948-49 data, some bias due to an apparent reluctance to report a decrease in income during the second interview. If the respondent reports in the 1949 interview a 1948 income lower than the 1947 income he reported a year earlier, he will now give a lower estimate of 1947 income also. There is also some tendency, but less pronounced, for respondents who have enjoyed income increase since the first interview to remember a higher previous level of income than they had previously reported. If 1947 income is categorized in seven brackets, 62 per cent of respondents gave reports that placed them in the same bracket. Ninety-two per cent fall either in the same or in adjacent brackets.¹² The same percentages apply to 1951 income as reported in 1952 and in 1953, categorized in eight brackets.¹³

The errors to which memory reports of financial magnitudes are evidently subject underline the importance of reinterviews. It is

¹¹ Survey Research Center, University of Michigan, *Values and Limitations of Survey Saving Data* (unpublished), Chap. 3.

¹² Withey, Chap. 4.

¹³ Survey Research Center, University of Michigan, *Study 608*, Table RI-7B (unpublished).

difficult to obtain a very long reliable financial history of a household from a single interview.

Evaluation of the attitudinal data. Consumer attitudinal data are relatively new and still highly experimental. Any evaluation at this time is of necessity tentative. Nevertheless, it may be of value to discuss such data in the light of current knowledge.

Perhaps the most important question concerning such data is whether they meet needs which cannot be met by other statistics. There is good evidence that consumer attitudes influence consumer behavior—that is, consumers optimistic about future economic conditions (both personal and general) tend to make more purchases than consumers who are pessimistic about the future. But if consumer attitudes are simply manifestations of underlying economic factors that are themselves easily obtainable (for example, aggregate income, employment), then consumer attitudinal data do not provide any additional insights into consumer behavior.

It is possible, however, that consumer attitudes will differ from what would be inferred from objective economic data because these attitudes depend on how the consumer perceives his economic situation. Or consumer attitudes may result principally from the economic situation of consumers but not in a simple way. In this instance it may not be possible to infer a consumer's attitudes except by relating several economic variables (current income and recent changes in income, current holdings of liquid and nonliquid assets, recent changes in assets) at the individual consumer level. This can be done only with the joint distribution data obtained by sample surveys. Conceivably it would be simpler and less expensive to measure consumer attitudes directly.

To summarize, consumer attitudinal data may contribute useful information about consumers (1) if their attitudes are different from what can be inferred from economic aggregates and (2) if these attitudes are related to consumer behavior.

To meet these requirements consumer attitudinal data must exhibit a reasonable degree of stability.

If relationships between attitudes and behavior are employed for predicting consumer behavior, it must be possible to predict consumer attitudes in the future period for which a forecast is desired or to assume that the attitudes will not change from the time they are ascertained through that future period or to assume a lag

between attitudes and behavior equal to the time that will elapse before the forecast period. The extent to which the consumer attitudinal data meet the first two conditions will be discussed in the next chapter.

In the aggregate, the consumer attitudinal data are quite stable. This is true of purchase intentions and of attitudes toward the personal and general economic situation (including expectations about the future). This aggregate stability masks the fact, however, that many individuals reveal quite different attitudes from one survey to another. This kind of instability—that is, at the individual level—can be ascertained, of course, only by reinterviews. But the fact of its existence raises questions about the significance of the stability of the attitudinal data in the aggregate.

Of the various attitudinal data, purchase intentions appear to possess the most stability at the individual level, and expectations about future economic conditions the least stability. The latter instability was illustrated by appliance price expectations data secured during a panel-type study at the University of Illinois. The relative distributions of these data are shown in Table 6.

TABLE 6
APPLIANCE PRICE EXPECTATIONS OF CONSUMERS
[In per cent]

Price expectation	In first month	In second month
Up.....	3	2
Same.....	52	46
Down.....	32	34
No change.....	13	18
All cases.....	100	100

Theoretically, the differences in Table 6 could be accounted for by shifts in the expectations of 7 per cent of the respondents. Actually, 35 per cent changed their opinions between these two dates.¹⁴

The first part of Chapter III has attempted to evaluate the consumer economic, demographic, and attitudinal data from the standpoint of accuracy. In most instances this has involved comparison of an aggregate obtained from survey data with data from other

¹⁴ The data in Table 6 and some of the ideas of the preceding section are from a memorandum prepared by Robert Ferber for the Committee. Further light will be thrown on this problem by a current study being conducted by the Survey Research Center on a grant from the Ford Foundation, as noted in Chap. 5.

sources. The limitations of this kind of comparison are worth emphasizing.

Some of the aggregates from outside sources are accurate; others are not. Even more important, the survey data and the outside data usually differ substantially in concept and coverage and therefore exact comparisons are not possible.

An aggregate based on survey data requires an estimate of the total number of spending units for blowup purposes. If this estimate is in error, the aggregate will be in error regardless of the accuracy of the survey. But providing aggregate data is neither the sole nor the main purpose of the consumer Surveys. Their main purpose is to provide data regarding the relationship among the numerous variables relating to consumer behavior.

It is important to realize that it is entirely possible for the number of observations in a sample survey (say 3,000) to be large enough to permit an accurate estimate of the relationship between two (or more) variables even though the number of observations is insufficient to estimate the mean of each variable for blowup purposes.

It is true that in some instances the survey data are useful as aggregates because no other data are available. There is little doubt that a larger, more stratified sample than is currently used in the Survey of Consumer Finances would permit better estimates of the desired aggregates.

One important function served by the consumer data is to provide information which is not elsewhere available. In particular, many of the economic and demographic data provide frequency distributions and joint distributions of economic magnitudes such as income, asset holdings, debt holdings, and savings which are not obtainable elsewhere or not available from other sources until much later. In addition, some data such as purchases of used cars and used houses can be estimated in the aggregate only from the Survey of Consumer Finances data.

There is such a variety of information of this kind in the consumer survey data that its numerous uses cannot be indicated by a few sentences. There seems to be no doubt, however, that economists interested in studying short-term and long-term trends in the economy as well as market analysts have made frequent use of the data. The breakdown of used car purchases by money income or

age or occupation of buyer is a good example of information that can be extremely useful to economists and market analysts and is not elsewhere obtainable. (See comments of users in Appendix B.)

Some of this information is similar to Census information on income and demographic characteristics of households. So some doubt has been expressed whether it is necessary to obtain these data annually, rather than say, every five years. This question is especially pertinent in view of the fact that sampling and response errors may actually be larger than the usual year-to-year changes in some of these data. There would appear to be a number of reasons, however, for obtaining these data each year. In the first place, the advantage of expectations data plus economic and demographic data for individual consumers at identical time points would be lost for those years when only some of the data are obtained. Secondly, because of sampling and response errors, a large number of the time points are to be preferred to a small number, simply because this means additional independent observations of the same phenomenon.

IV. PREDICTIVE VALUE OF ATTITUDINAL DATA

What is the evidence concerning the predictive value of attitudinal data? Do these data enable more accurate predictions to be made than if they were not available?

The available evidence is of two kinds, aggregative and individual. Predictions regarding the consumer sector of the economy as a whole can be made on the basis of the entire sample; such aggregative predictions can be checked against actual events. At the level of the individual spending unit in the sample, prediction of future behavior can also be checked by subsequent reinterview. In examining both kinds of evidence, buying intentions should be distinguished from less specific attitudinal data.

We may summarize in advance the conclusions of our examination of the evidence:

- (1) Buying intentions, properly interpreted, appear to have predictive value. The extent of their predictive usefulness and the optimal way of combining them with other information are still to be determined by further research and experience.

- (2) Other attitudes are highly correlated with buying intentions, both over time and as among spending units; and there is so far no convincing evidence that they make an independent contribution to ability to predict, however interesting these attitudes may be for other purposes.

Aggregative predictions. Consumer behavior is necessarily influenced by factors beyond the powers of consumers to foresee or control. These factors, which include unemployment, war, strikes, inflation, recession, provide numerous reasons why plans are not realized and why attitudes are modified. It is asking too much to expect consumer surveys to predict consumer purchases. The level of these purchases will ultimately be determined by the interactions of decisions by consumers, business firms and governments. A survey of consumers can at best provide one piece, albeit a very important one, in a larger puzzle. It is more reasonable to expect surveys of plans and attitudes to predict whether consumer purchases will be high or low relative to the values of factors that households may have difficulty in foreseeing or controlling. One important determinant of consumer purchases is household disposable income; events in other sectors of the economy may cause marked and unexpected changes in income during a year. Consequently, it is often more appropriate to use survey data to predict whether purchases will be high or low in relation to income than whether they will be high or low absolutely.

A similar kind of complexity arises from the fact that the physical volume of purchases of any commodity depends on the supply as well as on consumer demand. A survey may correctly indicate that demand will increase, but the correctness of this prediction will not show up in statistics of quantity purchased unless the businessmen who produce and sell the commodity are able and willing to expand the supply. In the early postwar years there were many durable goods for which the supply was limited; if consumer surveys indicated more prospective than actual purchasers of houses and cars, this was no reflection on the value of the surveys. It simply means that their value must be judged by other dimensions of the market, price and unfilled orders. For more recent years, the same kind of problem may arise not from shortages but from producers' decisions to operate near capacity even if the prices of their goods must

fall in order to clear the market. Weakness in automobile demand may show itself in discounts, high trade-in allowances, and dealer distress rather than exclusively in reduction in the number of new car registrations.

In appraising the success of aggregative predictions from surveys of consumer attitudes, we can examine first those predictions which were actually made at the time. This approach is not as fruitful as it might be, because the Federal Reserve has tended to couch its interpretations of survey results in guarded language. Moreover, the *Federal Reserve Bulletin* did not until 1950 have articles reporting on the annual Surveys of Consumer Finances until the year to be predicted was already well along.

1946. The primary purpose of the 1946 "National Survey of Liquid Assets," as it was called, was "to obtain factual information on the distribution of these assets and on the uses that people expected to make of them under current conditions."¹⁵ On the basis of this survey, an article in the June *Bulletin* concluded that the prospects were inflationary. This conclusion was based both on plans to use liquid assets directly for purchases of durable goods and houses and on "the encouragement that existing liquid asset holdings give people to maintain consumption in the face of rising prices or other difficulties." An inflationary prognosis for the markets for consumers' durables and other nonliquid assets was affirmed even more strongly in the August *Bulletin*.

This prediction was, of course, correct. But by the time it was published it cannot have been news to many people, although earlier predictions of a number of economists had greatly underestimated the postwar strength of consumer demand. By the time the "Review of the Month" for the March 1946 *Bulletin* was written, it was already appreciated that consumers were reducing their rate of savings in favor of consumption expenditures of all kinds.¹⁶

1947. According to the first report of the 1947 Survey, in the June *Bulletin*, "some lessening of inflationary pressures is indicated (for durable goods other than automobiles), but buying will apparently continue at high levels." In the event, the prediction of a continuation of inflationary pressure was correct, but there was no

¹⁵ *Federal Reserve Bulletin*, June 1946, p. 574.

¹⁶ *Federal Reserve Bulletin*, March 1946, p. 221.

evidence that excess demand for other durable goods was either less than in 1946 or less than excess demand for automobiles.

1948. On the basis of the 1948 Survey, the *Federal Reserve Bulletin* noted in June the first signs of weakening of the asset position of consumers.¹⁷ Nevertheless, on the basis of expressed buying intentions, a continuing strong demand for durable goods and houses was foreseen. The break in commodity prices in February had occurred in the midst of interviewing, and the *Bulletin* was able to report that this break had "little influence upon consumers' optimism."

This prediction for 1948 was in the main correct, although it missed a general tapering off in the excess demand for consumer durables other than automobiles and houses. This tapering off was evidenced by decline in the proportion of income devoted to these goods, by abatement of price increases, and by the reappearance of normal buyers' retail markets. This development had been predicted for 1947, prematurely.

1949. One of the major achievements claimed for the surveys is the correct prediction that, in spite of the 1949 recession, consumer demand would continue strong. "Early in 1949 consumer attitudes and intentions to purchase durable goods yielded ample indications that consumer expenditures would not decline and that the inventory recession would not be lasting," according to George Katona of the Survey Research Center.¹⁸ This claim appears to be well founded. The survey found consumers in a very optimistic mood; price declines were widely anticipated but they were viewed as favorable to consumer purchases rather than the reverse. Purchase intentions indicated stronger markets for automobiles, television sets, and houses than in 1948, and slightly weaker markets for other durables. The June *Bulletin* articles reported these optimistic results, and on the whole the authors must be forgiven for surrounding them with precautionary prose regarding the changes in the economic climate since consumers were interviewed in the first quarter. Except for housing, the general ordering indicated

¹⁷ Irving Schweiger quotes from an unpublished Federal Reserve staff analysis, May 14, to the same effect. See "The Contribution of Consumer Anticipations in Forecasting Consumer Demand," *Short-Term Economic Forecasting (Studies in Income and Wealth, Vol. XVII)*, National Bureau of Economic Research, Princeton, 1955, pp. 475, 476.

¹⁸ "The Predictive Value of Data on Consumer Attitudes" (unpublished), p. 3.

by the purchase intentions data was correct. Durable goods other than automobiles and television were not as strong as in 1948; but since disposable income had fallen more than survey respondents had expected, the surprising thing was the general strength of all durable goods markets. In this perspective the survey erred on the conservative side.

1950. The 1950 Survey led, both in the April and June *Bulletin* articles and in an April 5 unpublished Federal Reserve staff analysis, to the general prediction that, so far as consumers were concerned, 1950 would be little different from 1949.¹⁹ Data for the first half of 1950 bear this out. The second half of the year was dominated by the economic consequences of Korea, and these were of course unanticipated by the Survey.

1951. Like 1949, 1951 is a year of major predictive success. Buying intentions and other attitudes indicated smaller demand than in the pre-Korea 1950 Survey. Once again, the Survey was able to report interesting results regarding consumer attitudes towards price changes. As in 1948 and 1949, consumers did not take a speculative attitude towards price changes; in 1950 they were more concerned about the high level of prices than about the prospects that prices might go even higher. Unfortunately the opportunity to measure buying intentions and other attitudes in the midst of a strong buying boom had been missed. No interim Survey was conducted in the second half of 1950, and so we do not know how far these indicators had receded in early 1951 from their presumptive Korean highs. The June *Bulletin* article—anticipated by an early April unpublished staff analysis and by an article in the April *Bulletin* reporting preliminary results—correctly predicted that “the demand for major consumer goods will be substantially smaller in 1951 than the annual rate of purchases in the second half of 1950.”²⁰ Not only was this prediction correct; it was timely information at variance with the general tendency to project into 1951 the inflationary conditions of 1950.

1952. The predominant interpretation of the 1952 Survey was “no change.” “Prospects for 1952 indicated by Survey findings were that consumer spending would continue at a moderate level in

¹⁹ Quoted by Schweiger, p. 481.

²⁰ Schweiger, pp. 482, 483.

relation to income as long as the attitude prevails that prices are too high.”²¹ The article went on to say that price declines during the course of the year might make purchases greater than anticipated. Intentions data indicated more strength in the car market than in 1951, but less strength in the demand for other durable goods.

In the event, 1952 was not as good a year as 1951, especially when the increase in disposable income is taken into account. The automobile market shared in the general decline of demand for durable goods.²² The survey did not anticipate the extent of the weakness of consumer demand, which might have had more serious general economic consequences if the defense program had not at the same time been bolstering income.

1953. The preliminary findings reported in the March 1953 *Bulletin* were indications that 1953 would be a better year than 1952 or 1951. These findings, repeated in later articles, were based both on buying intentions for houses, cars, and other durable goods and on general attitudes towards economic conditions, incomes and prices. This appraisal was generally correct. Certainly 1953 was a better year than 1952. In the case of automobiles, it was also better than 1951; but this was not the case for purchases of other durable goods as a proportion of disposable income. The failure of 1953 to live fully up to the predictions based on the Survey at the beginning of the year was in large part due to the economic changes that occurred in the fourth quarter of the year.

1954. The ninth annual Survey yielded pessimistic findings, and fears about the effects of announcing them in March apparently caused the Board to “emphasize the experimental nature of this method of economic research, . . . especially in view of limited experience in periods of receding general activity.” In spite of valiant efforts to find optimistic ways to interpret the data, the predominant tone of the prediction was gloomy. In the event, automobiles and other durables were down somewhat from 1953, but housing demand was somewhat greater. The weakness of

²¹ *Federal Reserve Bulletin*, July 1952, p. 739. Similar results were again reported in a preliminary article in April.

²² It is true that the steel strike reduced the supply of durable goods in the summer of 1952, especially automobiles. But the loss of automobile production did not exceed 200,000 units, and may have been entirely made up in the latter part of the year. Automobile prices were stable or declining slightly at the end of the year.

automobile and other durable goods markets is not fully indicated by quantity and expenditure figures; retail price reductions, discounts, and special sales were necessary in order to achieve these volumes. Once again the Survey correctly predicted the general direction of change.

In addition to the Surveys of Consumer Finances, the Survey Research Center has collected attitudinal information in a number of interim surveys, and we must examine the short-term predictions based on these.

July 1947 and July 1948. These two Surveys correctly confirmed the continuation of excess demand for durable goods during these years.

July 1949. The interim Survey in 1949 had as a primary objective "to determine the extent of change in the attitudes of American consumers during the first six months of this year in the light of the evident downward drift of prices, production and employment."²³ The conclusion was that consumers remained confident and were disposed to buy durable goods in spite of the recession. This strengthened the indication given in the 1949 Survey of Consumer Finances that the consumer sector would be a strong stabilizing influence. Like the earlier 1949 Survey, the interim Survey provided timely and accurate predictive information.

June 1951. The results of the June 1951 interim Survey were announced in a Survey Research Center press release in mid-July. The survey correctly indicated a continuation and indeed an intensification of the anti-inflationary mood of the public revealed earlier by the 1951 Survey of Consumer Finances. The press release summarized the findings as follows:

"For every two persons who consider the present a good time to buy consumer goods, there are five who think that it is a bad time to do so. In these attitudes and their spending-saving behavior, people are influenced primarily by the price increases of the past year. In addition, they now evaluate their financial situation in a rather cautious way and express uncertainty about their future."

November 1951. The press release of December 11 reported that attitudes were somewhat more favorable to spending than

²³ *Federal Reserve Bulletin*, October 1949, p. 1198.

earlier in the year. "But still in November there were more people who considered the present a bad time to buy consumer goods than who considered it a good time. . . . The attitude of the majority remained cautious and hesitant, giving no indication of a recurrence of buying waves." The indication of continued restraint in spending, rather than the possibility of some increase, was borne out by events of early 1952.

June 1952. The results featured in the press release of July 18 were a diminution in dissatisfaction with high prices and an increase in the proportion who believed it was a good time to buy. Nevertheless, the Center said, "It is too early to infer that people are getting accustomed to the present level of prices." Durable goods markets did in fact improve in the second half of 1952.

November-December 1952. The final Survey of 1952 revealed a remarkable degree of optimism, confidence and satisfaction. Neither inflation nor deflation worried the public. In unprecedented numbers, respondents felt better off than before and expected to be still better off in the future. But this postelection euphoria did not mean that consumers were ready for a buying spree. Nor did the Center so interpret these favorable attitudes. In a report dated January 13, 1953 but not generally released, the Center stated, "Nevertheless, the attitude of consumers toward major postponable expenditures continued to be characterized by restraint and caution." Consumers did not translate their optimism and confidence into a feeling that it was a good time to buy household goods. Indeed on this score opinions were less favorable than in June.

"In summary we find that people now are more satisfied with their economic situation and with business and price trends in the country as a whole than they were in early 1952 or in 1951. This shift in attitudes may lead consumers to spend a somewhat greater proportion of their incomes and to manifest less buyers' resistance than a year ago. But at present there are no indications that a substantial increase in consumer demand is in the making."

The first half of 1953 was in fact characterized by a revival in consumer demand for durable goods. Although it would appear in retrospect that a major part of the degree of satisfaction evidenced by the poll was of political rather than economic significance, events

did not bear out the negative indications of the "good time to buy?" question.

September-October 1953. A report on this interim Survey was published in *Business Week* of November 21. Like the Survey at the end of 1951, this one gave contradictory indications. But this time the contradiction was reversed. Considerably more pessimism about the maintenance of prosperity was expressed, and in almost all respects respondents viewed their personal economic situation and that of the nation with less satisfaction than in November 1952. But more consumers considered it a good time to buy durable goods than in any of the previous interim surveys in 1951-52. Once again the Center had to make a neutral forecast. In *Business Week's* summary headline, "Consumers: They're Willing, but You'll Have to Woo Them." The neutrality of the forecast did not turn out to do justice to the weakening of consumer demand in the last quarter of 1953 and the first quarter of 1954.

June 1954. According to the July 31 report in *Business Week*, "The consumer has just signaled that he is in a mood to increase his buying of automobiles and other durable goods." This time, all attitudinal indicators were more favorable than in the previous interim survey. Once again, consumers in record numbers found it a good time to buy durable goods. In addition, other attitudinal questions elicited more confidence and satisfaction than in September-October 1953, although still less than in November-December 1952. Consumer demand did strengthen in the fourth quarter of 1954.

October 1954. Once again *Business Week* (November 27) was able to report a continuation of the trend towards optimism and confidence and toward favorable evaluation of opportunities to buy durable goods. The Center was quoted, "The outlook for sales of automobiles and large household goods for the next six or nine months, dependent of course both on consumer resources and consumer sentiment, is better than at the end of 1953." All indications are that this was a correct prediction.

Comparison of purchase intentions and actual purchases. Our chronological review of predictions based on the buying intentions and other attitudes expressed in surveys can be supplemented by

statistical comparisons. We can compare time series of the estimated incidence of intentions to buy, or other attitudes, in the population with time series reflecting subsequent actual expenditures. For purchase intentions, such comparisons are presented in Figures 1 to 5. The general impression given by these Figures may be summarized as follows:

From 1946 to 1948 there is no conformity between "planned" and "actual" series. Nor should there be. These were years of supply shortages and price increases, and, especially after the experience of 1946, it is reasonable to conjecture that consumers took supply limitations into account in predicting their own purchases.

From 1948 to 1951 "planned" and "actual" series conform quite well.

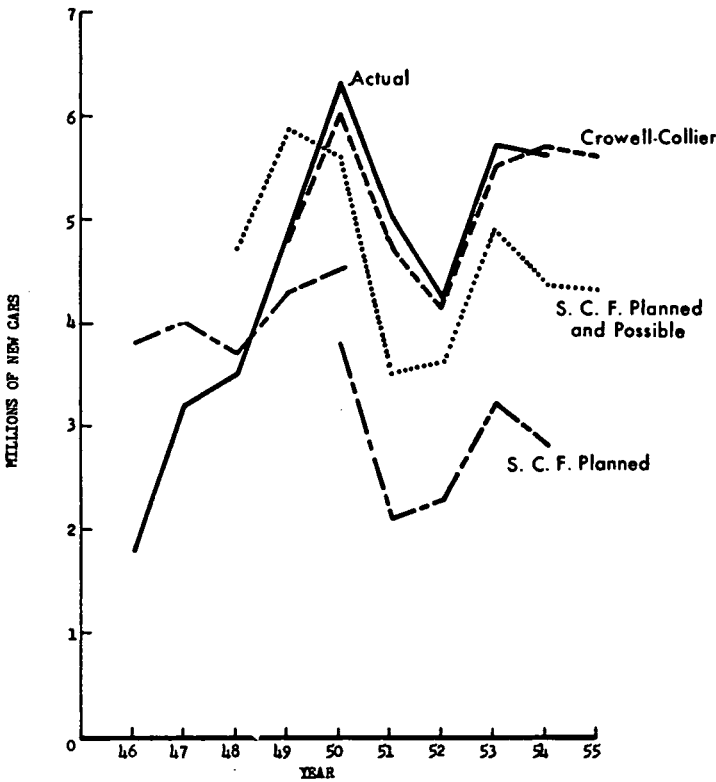
Since 1951, "planned" series have been much less successful in anticipating the direction of movement of "actual" series.

1. *Automobiles.* Figure 1 compares plans to buy new cars with actual new passenger car registrations. The direction of change of the "planned" series has conformed to "actual" in every year since 1948 except 1952. It appears that 1955 will be another exception; the apparent underprediction of 1955 automobile demand is somewhat surprising since the new models were already known to the public when interviews were taken in the first quarter of the year. The "planned and possible" purchases series comes closer than the "planned" series to the absolute level of actual new car registrations; but except for 1949-50, when it declined while "planned" and "actual" rose, it has the same time pattern. The figure also shows "prospects" for new car purchase estimated from the Crowell-Collier automotive survey, which is conducted in May and June of the previous year. In spite of this long lead, the Crowell-Collier series has a spectacular record of conformity to subsequent actual new car registrations, from 1949 to 1954. However, this survey too will evidently miss 1955 by a wide margin; in extenuation is the fact that the survey was conducted long before the new models were introduced.

The success of the Crowell-Collier survey argues strongly for the validity of intentions data as predictors. It also raises the question why the Crowell-Collier intentions data are better predictors, in

FIGURE 1
NEW CAR PURCHASES: PROSPECTIVE AND ACTUAL

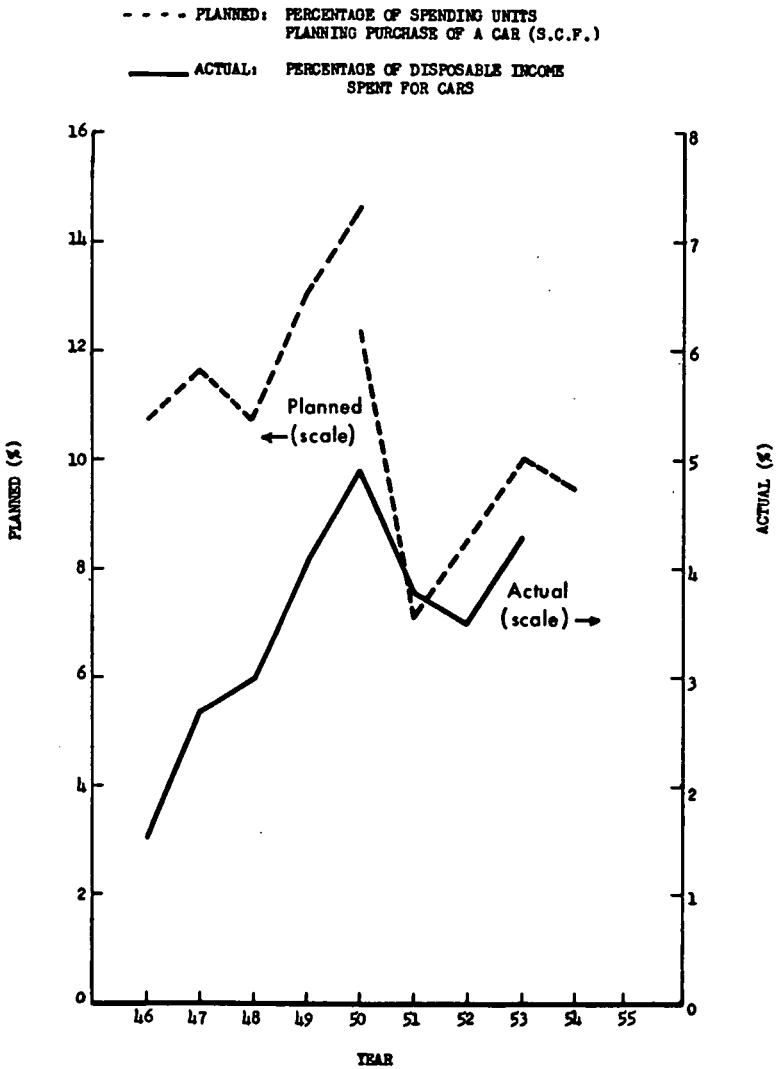
SURVEY OF CONSUMER FINANCES: NUMBER OF SPENDING UNITS REPORTING
 - - - - - PLANNED PURCHASES (DEFINITE OR PROBABLE)
 PLANNED OR POSSIBLE PURCHASES
 CROWELL-COLLIER SURVEY:
 - - - - - NEW CAR PROSPECTS
 ACTUAL:
 ——— NEW PASSENGER CAR REGISTRATIONS



spite of the longer lead, than Survey of Consumer Finances purchase intentions. We can do no more than raise the question, except to suggest that a survey devoted entirely to one subject, as the Crowell-Collier survey is to automobiles, may be able to elicit more considered anticipations than a survey, such as the Survey of Consumer Finances, in which this is just one subject among many.

In Figure 2 plans include used cars as well as new cars and are

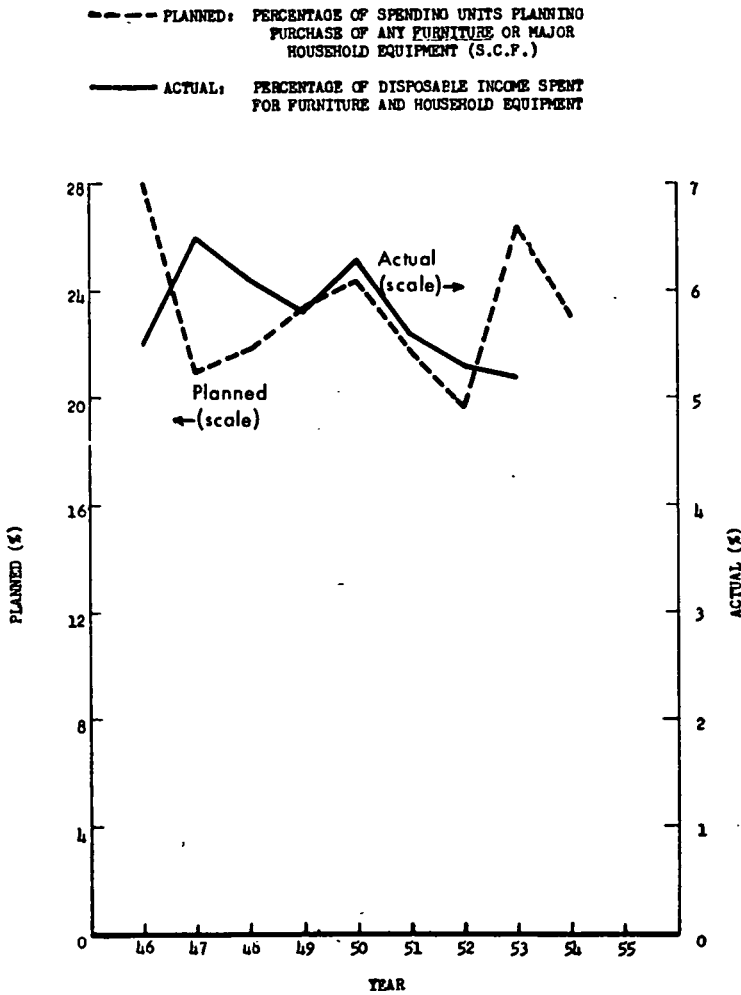
FIGURE 2
NEW AND USED CAR PURCHASES: PLANNED AND ACTUAL



expressed as percentage of spending units rather than absolute numbers. Since there are no comparable data on actual purchases from nonsurvey sources, the actual series used for comparison is the net expenditure of consumers on new and used cars, as a percentage of disposable income. Once again the series conform well

FIGURE 3

PURCHASES OF FURNITURE AND HOUSEHOLD EQUIPMENT: PLANNED AND ACTUAL

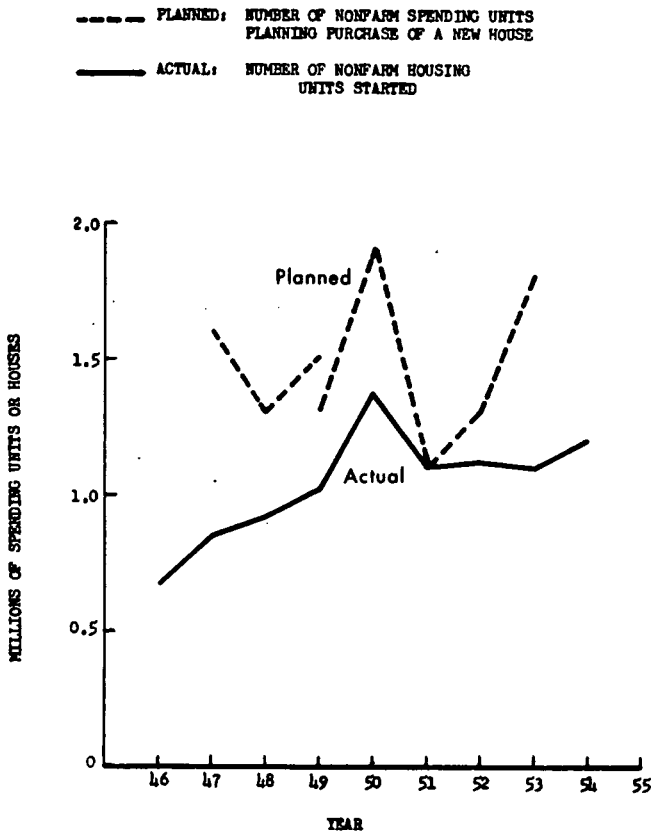


from 1948 to 1953, with the exception of 1952. The break in the "planned" series in 1950 is due to change in the procedure for classifying responses.

2. *Furniture and major household equipment.* A similar comparison for consumers' durables other than automobiles indicates

FIGURE 4

PURCHASES OF NEW HOUSES: PLANNED AND ACTUAL

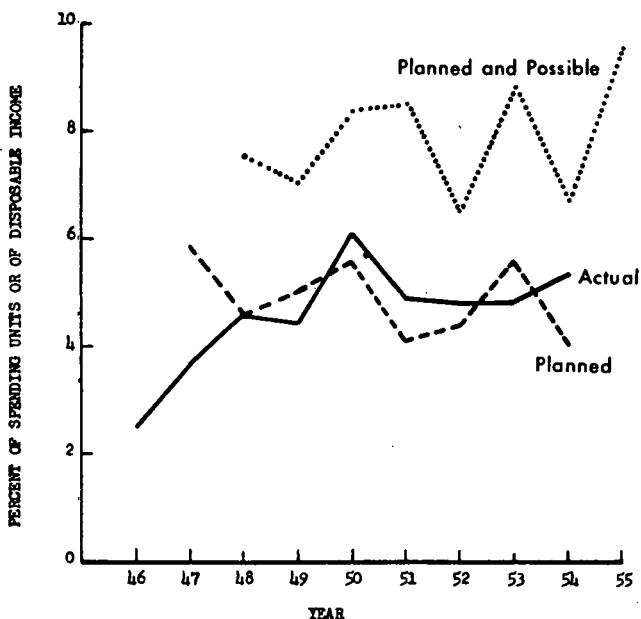


that since 1949 "planned" has correctly anticipated the direction of change of "actual" every year except 1953. The "actual" figure for 1954 is not yet available, but indications are that "actual" declined in 1954 although by no means as much as "planned" declined. "Planned" here refers to the percentage of spending units who said they definitely or probably would buy some furniture or major household durable equipment during the year. "Actual" refers

FIGURE 5

PURCHASES OF NEW AND USED HOUSES: PROSPECTIVE AND ACTUAL

SURVEY OF CONSUMER FINANCES; PERCENTAGE OF SPENDING UNITS REPORTING
 ----- PLANNED PURCHASES (DEFINITE OR PROBABLE)
 PLANNED OR POSSIBLE PURCHASES
 ACTUAL:
 ————— PERCENTAGE OF DISPOSABLE INCOME DEVOTED
 TO NONFARM RESIDENTIAL CONSTRUCTION



to the percentage of disposable income spent on purchases of this kind, as estimated by the Commerce Department. (There are conceptual differences between this category of goods in the Surveys of Consumer Finances and in the national income accounting of the Commerce Department. But they are enough similar so that

a high general disposition to purchase evidenced by positive responses in the survey should show up in a high ratio of purchases to disposable income in the national income estimates.)

3. *Houses.* As might be expected, there is in general less conformity between "planned" and "actual" series for houses than for other durable goods expenditures. Purchases of houses are neither planned nor made by more than a small fraction of the population; a small sample cannot estimate this fraction or the changes in it very accurately. Nevertheless Figure 4 shows that planned purchases of new houses have moved in the same direction as actual new houses started in every year since 1949, except 1953. Unfortunately the comparable "planned" series for 1954 and 1955 is not available. But, judging from the related series in Figure 5, these figures would show for 1954 a decline that actually failed to materialize. Figure 5 combines plans to buy new houses and plans to buy used houses and presents alternative series, one including "possible" buyers and the other excluding them. Since there is no time series of actual purchases of old houses, the "actual" series is expenditure for nonfarm residential construction, expressed as percentage of disposable income. From 1948 through 1951, "planned" and "actual" conform fairly well. But since 1951 there has been no relationship.

Other attitudes and actual spending and saving: annual data. The actual series with which attitudinal series other than specific purchase intentions should be compared are not as obvious for these diffuse attitudes as for time series of purchase intentions. Two series are used for comparison here:

- (a) Consumer expenditures on durable goods, as estimated by the Department of Commerce, as per cent of disposable income.
- (b) Personal liquid saving, as estimated by SEC, as per cent of disposable income.

Series (b), as may be observed in the Figures, is virtually the inverse of series (a). The choice between spending on durable goods and saving in liquid form is highly important in determining the inflationary or deflationary impact of the household sector. It is on

this choice that one would expect and hope attitudinal data to throw light.

Figures 6 and 7 present time series for responses to five attitudinal questions:

(1) *Evaluation of own financial situation.* The series shown in Figure 6 is the ratio of the number of those who responded that they are now better off to the total of those who responded that they are now either better off or worse off. This series does not include variations in number of respondents reporting no change.

(2) *Evaluation of durable goods markets.* Of those who responded that it is either a good time to buy or a bad time to buy consumers' durables, the series in Figure 6 is the proportion who thought it a good time. It does not reflect variation in the number who gave uncertain or noncommittal responses. Unfortunately this question was not asked before 1951.

(3) *Expected change in income.* The series omits those who expected to be making about the same a year from now and those who are uncertain. Of respondents who expected to be making more or less, the series is the proportion who said "more."

(4) *Expected general business conditions during the next twelve months.* Of respondents who expected "good times" or "bad times," the series gives the proportion who expected good times. Thus uncertain or neutral responses are not taken into account. Since this question was omitted in the Surveys of Consumer Finances for 1951-53, it has been pieced out by the results of interim Surveys of recent years.

(5) *Expected price movements.* Of respondents who expected prices "of the things you buy" to rise during the year or fall (omitting those who expected no change or were uncertain), the series gives the proportion who expected prices to rise.

No clear picture emerges from these Figures. On the whole, these attitudinal series conform less well to "actual" series than do purchase intentions. It would be difficult to say whether there is

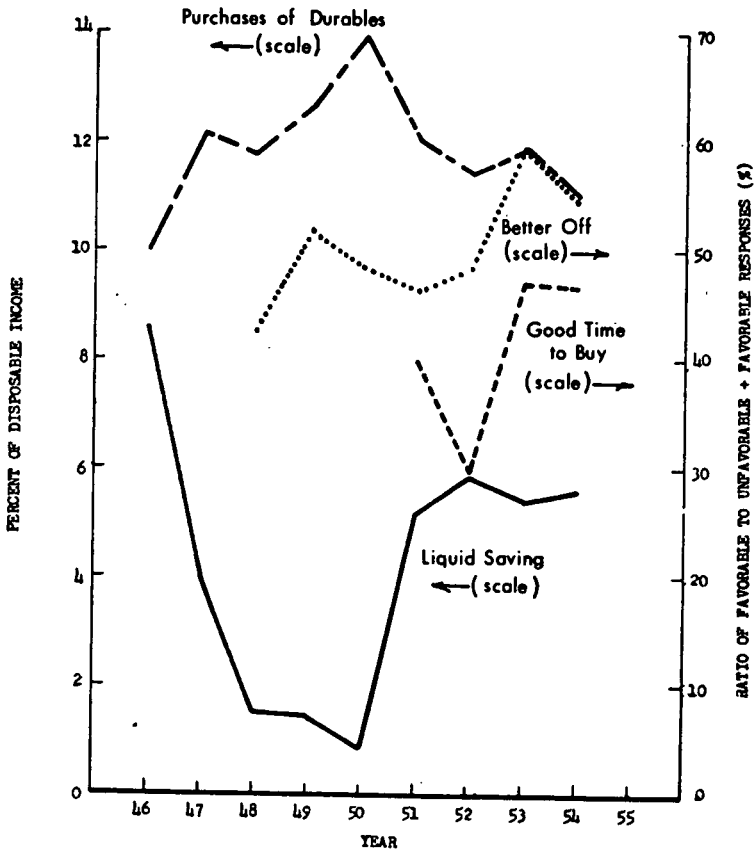
more conformity of favorable attitudes to subsequent durable goods expenditure or to subsequent liquid saving. This ambiguity may not be accidental. Confidence and optimism, in some sense, are necessary both for durable goods accumulation and for accumula-

FIGURE 6

CONSUMER ATTITUDES COMPARED TO LIQUID SAVING AND PURCHASES OF DURABLES

CONSUMER ATTITUDES (S.C.F.): RATIO OF FAVORABLE TO UNFAVORABLE + FAVORABLE RESPONSES
 OWN FINANCIAL SITUATION (BETTER OR WORSE OFF)
 - - - - - DURABLE GOODS MARKETS (GOOD OR BAD TIME TO BUY)

ACTUAL SERIES: PERCENT OF DISPOSABLE INCOME
 - - - - - CONSUMER PURCHASES OF DURABLES (G.N.P.)
 _____ LIQUID SAVING (S.E.C.)



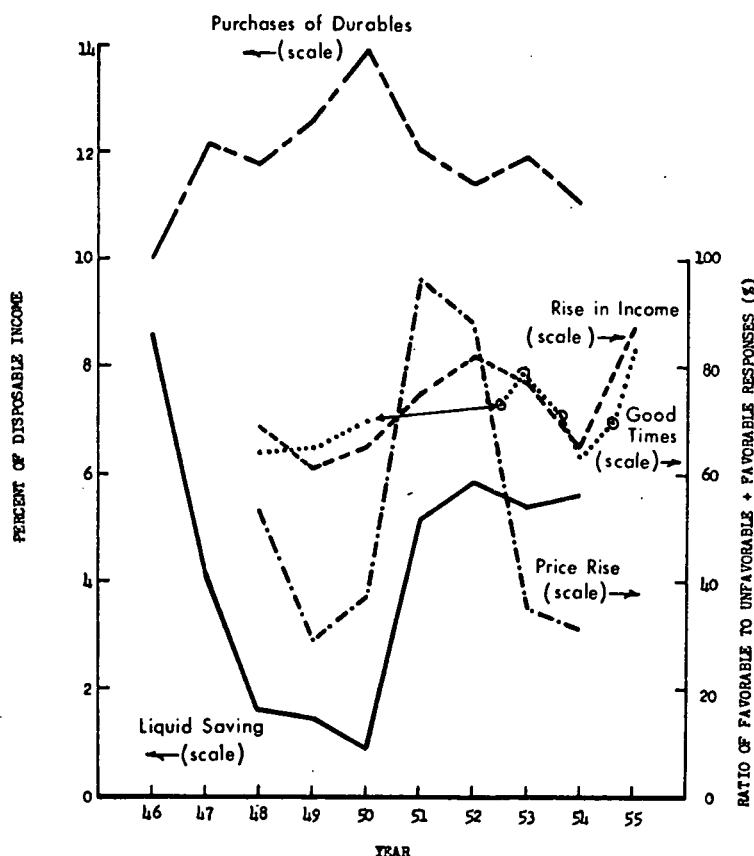
tion of other assets. Under some circumstances confidence and optimism may foster one kind of accumulation, and under other circumstances, another. Similarly expectations of price increases in the immediate year may lead either to speculative buying or to

FIGURE 7

CONSUMER ATTITUDES COMPARED TO LIQUID SAVING AND PURCHASES OF DURABLES

CONSUMER ATTITUDES (S.C.F.): RATIO OF FAVORABLE TO UNFAVORABLE + FAVORABLE RESPONSES
 EXPECTED GENERAL BUSINESS CONDITIONS*
 - - - - - EXPECTED CHANGE IN INCOME
 - . - . - PRICE EXPECTATIONS

ACTUAL SERIES: PERCENT OF DISPOSABLE INCOME
 - - - - - CONSUMER PURCHASES OF DURABLES (G.N.P.)
 _____ LIQUID SAVING (S.E.C.)



* Circled observations are from interim surveys.

postponement of purchases to a more opportune year. The attitudinal questions on which these series are based, unlike questions on intentions to buy, do not appear—either on the evidence of aggregative time series or on the evidence regarding individual household behavior about to be presented—to distinguish between the kinds of favorable attitudes that encourage buying of durable goods, other physical assets, and liquid saving.

A possible exception is the series on evaluation of durable goods markets. For the brief span for which it is available, it conforms well to the actual series, having the correct direction of change in every year. It is noteworthy that this attitude is closer to the specific purchase intention than the other four attitudes charted here. However, the analyses of interim surveys and of individual household data reviewed later in this chapter throw some doubt whether this attitudinal question contains any predictive information beyond that contained in intentions data.

Other attitudes and actual spending and saving: quarterly data. The interim Surveys of 1951-54, which we have already reviewed chronologically, offer also the opportunity to examine the predictive value of attitudes for periods of time shorter than a year. Unfortunately for the conclusiveness of any test, the relative stability during these years has left little opportunity for the Surveys to call major turns in actual consumer demand (relative to consumer income), but considerable opportunity for the Surveys to call turns that actually did not occur. There have been fluctuations and trends in the attitudinal series that have no counterparts in actual series. Certainly no one has yet shown how to distinguish those changes in attitudes, singly or in combination, which are harbingers of changes in behavior from those changes in attitudes which, though highly interesting as measures of welfare and public anxiety, mean little for economic behavior.

The actual quarterly series used in Figures 8, 9, 10, 11 are, as in the case of the annual comparisons, ratios to disposable income of (a) expenditures on durable goods, and (b) liquid saving. The durables series is seasonally adjusted, but the saving series is not. The attitudinal series are in every case the proportion of "favorable" responses among favorable and unfavorable responses, omit-

ting neutral and uncertain responses. The seven attitudinal indexes shown are as follows:

Figure 8: Recent changes in financial situation of consumers:
 (1) Better off or worse off than at the beginning of the year? (2) Making more or less money than at the beginning of the year?

FIGURE 8

CONSUMER ATTITUDES COMPARED TO LIQUID SAVING AND PURCHASES OF DURABLES

CONSUMER ATTITUDES: RATIO OF FAVORABLE TO UNFAVORABLE + FAVORABLE RESPONSES
 OWN FINANCIAL SITUATION (BETTER OR WORSE OFF)
 - - - - RECENT CHANGE IN INCOME (INCREASE OR DECREASE)

ACTUAL SERIES: PERCENT OF DISPOSABLE INCOME
 - - - - CONSUMER PURCHASES OF DURABLES (G.N.P.)
 _____ LIQUID SAVING (S.E.C.)

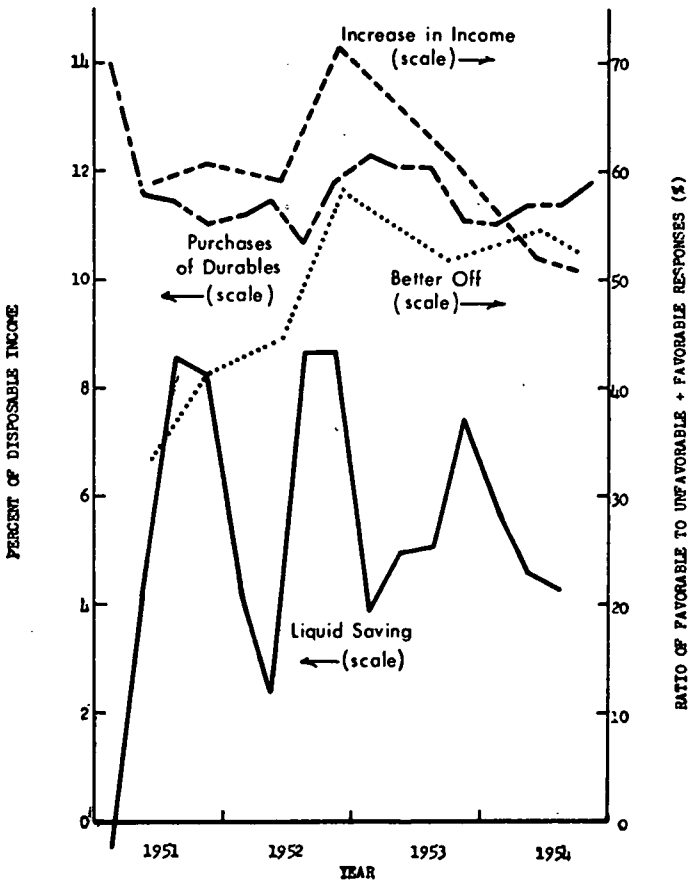


Figure 9: Expected business conditions (1) Good times or bad times during next twelve months? (2) Good times or bad times during next five years?

FIGURE 9
CONSUMER ATTITUDES COMPARED TO LIQUID SAVING AND PURCHASES OF DURABLES

CONSUMER ATTITUDES: RATIO OF FAVORABLE TO UNFAVORABLE + FAVORABLE RESPONSES
 BUSINESS CONDITIONS IN NEXT 5 YEARS
 - - - - BUSINESS CONDITIONS IN NEXT 12 MONTHS
 ACTUAL SERIES: PERCENT OF DISPOSABLE INCOME
 - - - - CONSUMER PURCHASES OF DURABLES (G.N.P.)
 ——— LIQUID SAVING (S.E.C.)

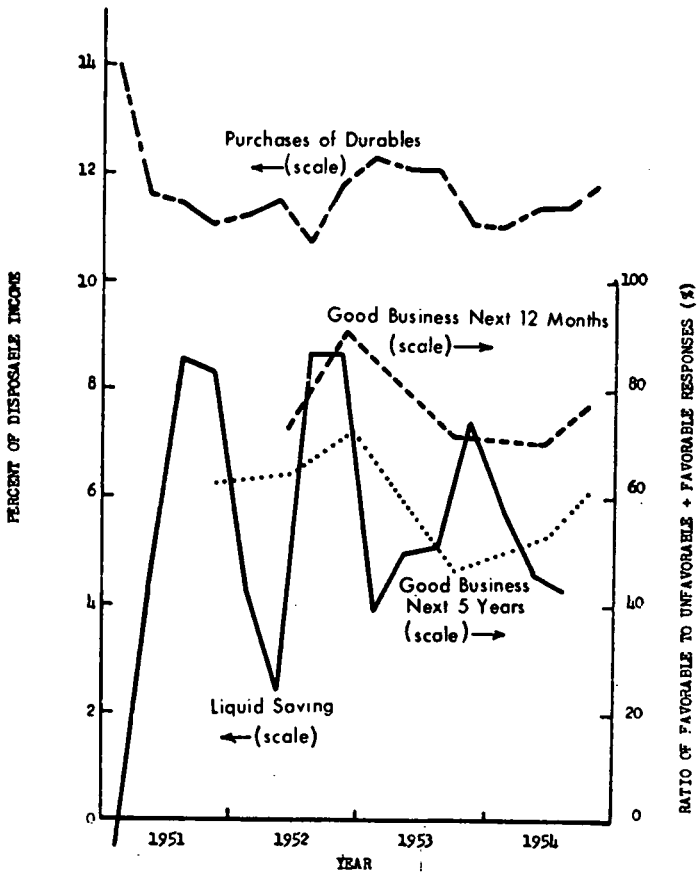


Figure 10: Price expectations for household items and clothing.
 (1) Up or down during next year? (2) Higher or lower five years from now than at present?

Figure 11: Good or bad time to buy large household items?

FIGURE 10

CONSUMER ATTITUDES COMPARED TO LIQUID SAVING AND PURCHASES OF DURABLES

CONSUMER ATTITUDES: RATIO OF FAVORABLE TO UNFAVORABLE + FAVORABLE RESPONSES
 PRICE EXPECTATIONS IN NEXT 5 YEARS
 - - - - - PRICE EXPECTATIONS IN NEXT YEAR

ACTUAL SERIES: PERCENT OF DISPOSABLE INCOME
 - - - - - CONSUMER PURCHASES OF DURABLES (G.N.P.)
 ——— LIQUID SAVING (S.E.C.)

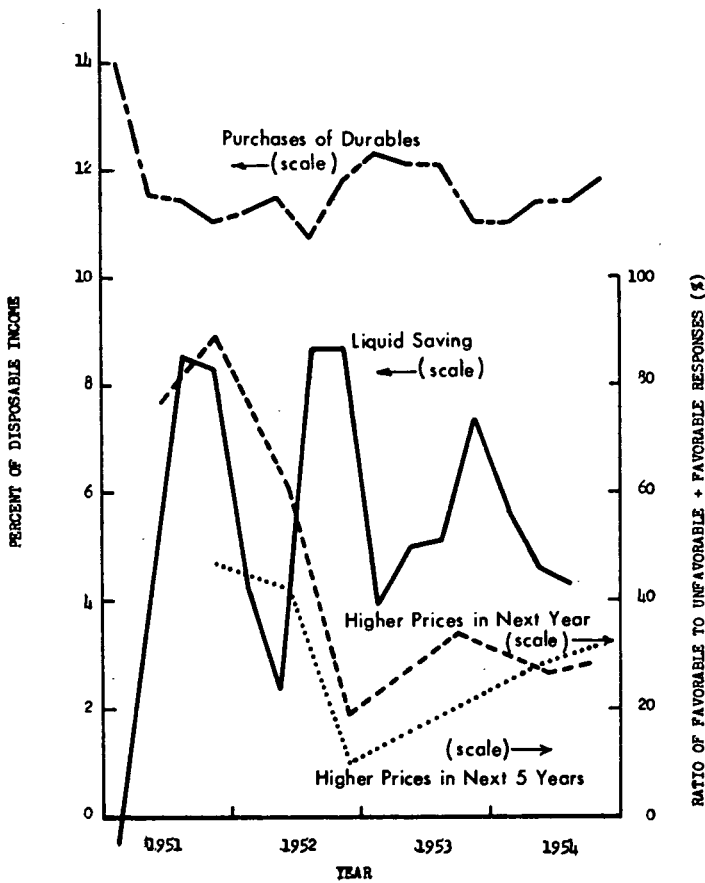
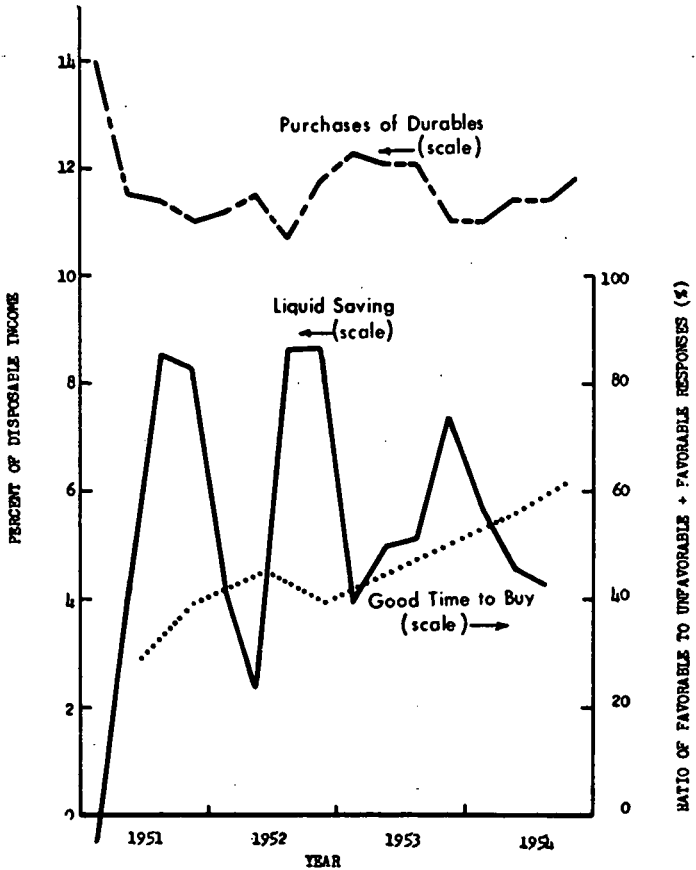


FIGURE 11

CONSUMER ATTITUDES COMPARED TO LIQUID SAVING AND PURCHASES OF DURABLES

CONSUMER ATTITUDES: RATIO OF FAVORABLE TO UNFAVORABLE + FAVORABLE RESPONSES
 GOOD OR BAD TIME TO BUY

ACTUAL SERIES: PERCENT OF DISPOSABLE INCOME
 —●— CONSUMER PURCHASES OF DURABLES (O.N.P.)
 — LIQUID SAVING (S.B.C.)



Individual predictions. Confidence that such predictive success as has been observed on an aggregative level is systematic and reliable rather than accidental would be greatly enhanced if we could observe some contribution of attitudinal data to predictive success on an individual level. Aggregative evidence is too scant and too

ambiguous to permit us to rely on it alone to reach conclusions regarding the predictive power of attitudinal data. The contrary opinion has sometimes been expressed, and much of the emphasis on aggregative predictions apparently rests on the assumption that attitudes and intentions have a life of their own.²⁴ According to this view, a survey can determine the prevalence of dispositions to buy; these dispositions may be transferred to an entirely different set of individuals with little attrition or modification. But it would surely be very difficult to construct a plausible model of human behavior, even allowing for much purely random and idiosyncratic differences among individuals, on which attitudes could influence subsequent behavior of large groups without influencing the behavior of those who were observed to hold them.

Reinterview of sampled spending units a year later permits testing of the degree of relationship of actual behavior during the year to attitudes and intentions expressed at the beginning of the year. Reinterview studies of this kind have been conducted by the Survey Research Center on three occasions. In early 1949, 655 spending units who had been interviewed in the Survey of Consumer Finances in early 1948 were reinterviewed. In October 1949, 590 different cases who were first interviewed in early 1949 were reinterviewed. More recently, 1036 spending units of the 1952 sample were reinterviewed in early 1953, as part of the 1953 Survey of Consumer Finances.

Reinterview data indicate a positive association between purchase intentions and subsequent purchases. The degree of this association is strongest for automobiles; over half of those who say they will buy or will probably buy a car actually do so. For other specific durable goods the association is much weaker. (It is not possible to test the association for houses, because those who moved from their old address could not be reinterviewed.) However, failure to carry out one purchase intention is often compensated by making an unintended purchase. Thus 51 per cent of those who said they expected to buy some major household good other than a car actually did so, even they did not necessarily, or even usually, buy the specific good they mentioned. The relevant data are summarized in Table 7. On one criterion, the degree of association, even for auto-

²⁴ See Schweiger, p. 460.

mobiles, is disappointing. Most buyers are persons who did not expect to be in the market at the beginning of the year; to explain why they are there the analyst must look elsewhere than to their beginning-of-year attitudes and intentions. But this criterion is probably too exacting; given the complexity of the forces making for differences among individuals in purchasing behavior, we should be grateful for any information to which subsequent behavior is significantly correlated.

TABLE 7

PERCENTAGE 1952-1953 REINTERVIEW SAMPLE OF SPENDING UNITS IN PURCHASE EXPECTATION CLASS WHO BOUGHT INDICATED ITEM IN 1952

[Total percentage of population in class is shown in parentheses]

Purchase expectation class	Percentage of spending units in expectation class who bought:								
	Auto- mobile (new or used)	Auto- mobile (new)	Auto- mobile (used)	Auto- mobile or any other durable	Any other durable	Refrig- erator	Furni- ture	TV	Washing machine
Expect to buy indicated item ¹	56(12.4)	37(n.a.)	50(n.a.)	65(29.6)	51(21.8)	20(4.4)	29(8.9)	38(6.0)	12(1.6)
Do not expect to buy indicated item ²	15(86.8)	3(n.a.)	12(n.a.)	38(70.4)	30(78.2)	4(95.6)	12(91.1)	8(94.0)	4(98.4)

EXAMPLE.—In early 1952, 12.4 per cent of this sample (1,036 cases) said that they expected to buy an automobile of some kind during 1952. Of this group 56 per cent (or 6.9 per cent of the whole sample) reported, when reinterviewed in early 1953, that they actually did buy a car in 1952.

n.a. Not available.

¹Will buy, Probably will buy, Undecided. Also includes a few cases who had already bought in 1952 prior to interview.

²Will not buy.

Source.—Unpublished tables of the Survey Research Center: Tables RC-1 and RDA-5 (revised) of Study 608. Also Table 1 of unpublished article by Irving Schweiger, "Preliminary Report of Findings from the Reinterview Study of 1953 Survey of Consumer Finances."

Attitudes other than purchase intentions also appear to be associated with subsequent purchases, although less strongly. These associations are shown in Table 8 for the 1952-53 reinterview sample. They are shown separately for different income groups in order to separate the effects of attitudes from those of income. Both attitudes and purchases are correlated with income, and it is only if attitudes give more information about purchases than income alone can give that they are useful in prediction. In the table, each of columns 3 to 7 should be compared with column 2. For example,

the importance of purchase intentions data for low-income households is indicated by the fact that of all spending units in the lowest income bracket only 22 per cent bought any durable good, while 46 per cent of those spending units in this bracket who expected to buy actually bought.

It is one thing to show a gross association between attitudes and purchases, as in Tables 7 and 8, and another and more difficult thing to discover whether there is a net association after the influences of many other variables, not just income, have been allowed for. Do attitudes provide any significant addition to the predictive information contained in economic, financial, and demographic variables? And do these variables, separately and in com-

TABLE 8
1952-1953 REINTERVIEW SAMPLE

1951 Income	Number of cases (1)	Percentage of spending units in income-attitude class who bought any durable good in 1952					
		All spending units (2)	Attitude at beginning of 1952				
			Expected to buy at least one durable (3)	Felt better off than year ago (4)	Good time to buy (5)	Prices will rise (6)	Prices will fall (7)
Less than \$1,000	103	22	46	33	32	23	30
\$1,000-\$1,999	125	29	48	43	44	29	38
\$2,000-\$2,999	147	45	64	57	48	37	66
\$3,000-\$3,999	180	57	82	68	48	65	47
\$4,000-\$4,999	146	58	66	62	56	62	54
\$5,000-\$7,499	172	53	63	58	47	55	26
\$7,500-\$9,999	50	54	66	57	63	61	61
\$10,000 or more	113	59	64	63	50	69	38

EXAMPLE.—There were 125 cases in the sample in the \$1,000-\$1,999 1951 income bracket. Of these, 29 per cent reported, on being interviewed in early 1953, that they purchased at least one consumers' durable good in 1952. Of the 125 in the income class, a smaller number, which is not indicated in the table, said at the beginning of 1952 that they thought it was a good time to buy durable goods. Of the smaller number who so stated, 44 per cent later reported the purchase of a durable good during 1952.

Source.—Lawrence R. Klein and John B. Lansing, "Decisions to Purchase Consumer Durable Goods" (unpublished), Tables II-V.

bination, provide any significant addition to the predictive information contained in attitudes? Questions of this kind can be answered only by fairly complicated statistical techniques which handle simultaneously a number of variables. The paper of Klein and Lansing, cited as the source of the data in Table 8, is virtually the only systematic attempt to answer questions of this kind. The nonattitudinal variables considered in their analysis are: age and

marital status of head of spending unit, region of the country, income in previous year and in current year, debt and liquid assets at beginning of year, expenditures on durables in previous year. The purchase behavior which they seek to explain by association with these nonattitudinal variables and with attitudes is measured in two alternative ways: one is simply to distinguish between buyers—those who purchased a car or any other durable good—without regard to the amount of their expenditure, and nonbuyers. The other is to compute the proportion of the spending unit's disposable income in 1952 that was devoted to the purchase (net of sales and trade-ins) of cars and other durable goods. The results of their analyses may be summarized as follows:

- (1) It is certainly not possible to dispense with nonattitudinal information. Income, debt, age, marital status, and region give information about the spending unit's propensity to purchase consumers' durables—information not contained in the answers to attitudinal questions.
- (2) Purchase intentions are a significant addition to these financial and demographic variables. Other things equal, those who expect to buy are more likely to do so; and the more they anticipate spending, the more they will actually spend.
- (3) Two other attitudinal variables appear to contain information not already contributed by financial, demographic, and intentions data. These are (a) the respondent's answer to the question, "Would you say that you folks are better or worse off financially now than you were a year ago?" and (b) the respondent's price expectations for the calendar year. But these variables are barely significant statistically. Also, the sign of the price expectation variable is at variance with impressions gained from previous surveys and from comparing one survey with another over time. In 1952 spending units with positive price expectations appeared, other things equal, to be bigger buyers. There is considerable evidence, some of it in an analysis of the 1949 reinterview study provided by Klein and Lansing in this article, that the reverse relationship has obtained in the past.
- (4) Other attitudinal variables—"good time to buy?" and income expectations for a year hence—make no significant contri-

bution. To the extent that these attitudes, and indeed all attitudes other than purchase intentions, are associated with purchases, they can themselves be predicted from financial, demographic, and intentions data.

These general conclusions are confirmed by some calculations incidental to another analysis of these same data by one of the members of this committee. It is always possible, however, that the results would look different if somewhat different procedures were used. In particular, a separation of the dependent purchase variable into cars and other durables, perhaps even dividing other durables into specific items, might yield less impressive results for purchase intentions and more significant results for the more diffuse attitudes. In the analyses we have been summarizing, the pooling of all items, in both actual and intended purchases, means that the intentions variable must be interpreted less as reflecting the execution of definite specific plans than as reflecting a rather diffuse disposition to buy durable goods. It is also quite possible that attitudes are multiplicative rather than additive in their effects, that the "interactions" of attitudinal variables with each other and with other variables would turn out to be more important than the "main effects." Thinking it is a good time to buy durable goods may, for example, do nothing to the purchases of an aged low-income consumer with pessimistic income expectations, but it may make a considerable difference for a young and optimistic high-income consumer.

It is no criticism of the Klein-Lansing paper to mention these possibilities; their paper could not test all the plausible hypotheses on the subject. But, considering the stake of the Federal Reserve and of the Survey Research Center in the basic questions at issue here, it is surprising and regrettable that more multivariate analysis of the role of attitudes as determinants of purchase decisions, both on the 1951-52 and earlier reinterview studies, has not been carried out. This is one of the most obvious ways in which the neglect of analysis in the face of the more immediate requirements of collecting data and publishing tabulations has left the program, even after 10 years, in doubt about what data to collect and to tabulate.

Other uses of attitudinal data. It is time to emphasize once more that prediction, at least in the fairly direct sense in which we have

been discussing it, is by no means the only use of attitudinal data, although it is the use which the Survey Research Center itself has almost exclusively emphasized. These data have considerable descriptive interest in themselves, as measures of households' assessments of their own well-being, as clues to the sources of popular feeling of anxiety and security. It may well be as important for the social scientist to explain fluctuations in measures of this kind as to try to use such measures to explain spending and saving behavior. Moreover, if spending units are to be interviewed for other purposes anyway, as in the case of the Surveys of Consumer Finances, the additional cost of attitudinal data is negligible. Indeed questions of this kind have considerable value just in arousing the cooperative interest of the respondent. Interim surveys, which collect solely attitudinal data, require more substantial justification.

V. EVALUATION OF THE TECHNICAL EFFICIENCY OF SURVEY OF CONSUMER FINANCES

This chapter is addressed to the following question:

Given the stated objectives of the Survey of Consumer Finances, how efficient and economical are the methods of operation?

As has been indicated previously, the Survey is a cooperative enterprise, involving the research staff of the Federal Reserve Board and the contracted services of the Survey Research Center, University of Michigan. The present analysis will concentrate primarily on the work done at Michigan, for which the annual budget is \$150,000. The cost of the Washington end of the operation is of course in addition.

While \$150,000 is a very small sum of money in comparison with the aggregate outlay of various government agencies for economic and financial statistics, it is a relatively large amount to pay for a survey involving only 3,000 respondents. We are duty bound to look carefully at this expenditure, with an eye to possibilities of achieving greater efficiency or economy.

The budget of the Survey Research Center for this enterprise has been unchanged since 1951. Prior to then, the allocation increased each year, from a low of \$109,600 in 1947 to \$141,600 in 1950.

The actual expenditures each year from 1947 through 1954 are shown in Table 9. These figures vary a little from the budget, small

TABLE 9
EXPENDITURES OF SURVEY RESEARCH CENTER
ON SURVEY OF CONSUMER FINANCES

Year	Planning and processing	Field operations including sampling	Miscellaneous	Overhead	Total
1954.....	\$53,548	\$65,618	\$15,954	\$13,513	\$148,633
1953.....	56,576	64,636	15,115	13,633	149,960
1952.....	59,972	58,348	15,016	13,333	146,669
1951.....	51,683	67,242	17,012	13,578	149,515
1950.....	46,989	63,339	15,404	12,873	141,605
1949.....	42,376	67,560	15,969	12,591	138,496
1948.....	35,827	63,835	15,392	11,505	126,559
1947.....	30,632	57,529	11,285	9,945	109,391

unexpended balances reverting to the Federal Reserve Board. The increases in costs during the years 1947 through 1950 were due in part to the general increase in the price level, and in part to a substantial increase in the amount and complexity of the material collected and processed in the surveys.

One crude index of this added complexity is the number of punch-card columns coded per interview, which is now over 50 per cent greater than in the early years of the survey. Another index of greater service is the speeding up of the preliminary tabulation and early reporting of the results related to buying intentions and other attitudes. In view both of the increases in wages and salaries and of the increases in volume and speed of services rendered, the Survey Research Center, in consultation with the Federal Reserve Board, met further cost increases in 1952 and thereafter by reducing the number of interviews in the sample from 3,500 to 3,000.

The work which goes into the Survey can be broken down into several aspects: (1) General planning; (2) The questionnaire; (3) The sample; (4) The field work; (5) Editing and coding; (6) Tabulation; (7) Preparation of current reports; and (8) Methodological and substantive research studies.

These operations will now be considered in turn.

1. **General planning.** As Table 9 shows, the share of the budget which is allocated to planning and processing has increased rather sharply between 1947 and 1954.

Further breakdown of the data shown in Table 9 indicates that about two-thirds of the costs chargeable to work in the office for planning and processing go for professional salaries. The Survey

Research Center appears to be scrupulous in not charging an excessive proportion of the salaries of its top management—Likert, Campbell, and Katona—to the Survey of Consumer Finances. In fact, the aggregate of their salaries charged to SCF was only \$5,000 in 1954. But there have been substantial increases in total professional salaries over the years, in keeping not only with changes in the cost of living but also with an increasing number of hours devoted to methodological and operations analysis, much of which has been directed toward increasing the efficiency of the operation and holding down processing costs in the face of a mounting price level. Total expenditure for planning and processing has fallen since 1952.

The responsibilities of the senior professional staff are by no means confined to the routines of administration. Each year, numerous modifications and improvements are made in some or all phases of the Survey, either in response to requests from the Federal Reserve Board or on the basis of the Center's own experience and study. The Federal Reserve Board, in turn, receives requests and suggestions from various agencies, such as the Treasury, the Council of Economic Advisers, the Veterans' Administration, and others.

It should be noted that the high quality of professional personnel could not be maintained on the budget of the Survey of Consumer Finances alone. Substantial grants of money, notably from the Carnegie Corporation, the Rockefeller Foundation, and the Ford Foundation, have made possible methodological studies which can be of direct value to the Survey without cost to the Federal Reserve Board. Current studies, now being made with Ford Foundation funds, are among the most important methodological surveys ever made in the field of consumer expectations and finances, and should be important in answering some of the questions which are raised elsewhere in this report.

In addition to planning the final tabulations for use by the Federal Reserve Board, the senior professional staff publishes independently, in economics, business and psychological journals, technical papers growing out of the experience and data of the Survey of Consumer Finances. A bibliography, of which many of the publications were prepared by this staff, as well as by the staff of the Board, is appended. These publications are important for their theoretical contributions as well as for the contribution they make

to educating people in government, business and academic life as to the materials made available by the Federal Reserve Board and in eliciting criticism and discussion.

We have high respect for the competence of the individual statisticians, economists, and psychologists who are assigned to this operation in Michigan. A particular advantage to the Federal Reserve Board is the location of this staff at a major university where there is opportunity for consultation with colleagues in economics, psychology, statistics, and other disciplines, and for training Ph.D. candidates and post-doctoral fellows, who in turn can be expected to contribute to knowledge in this field. The Carnegie Corporation recognized the value of the post-doctoral training by providing approximately \$50,000 for fellowships in the Economic Behavior Program of the Survey Research Center.

It must be recognized, however, that there are also disadvantages attending the relationship between a Washington office and a university research center.

The need for coordination between the ideas of the research staff of the Federal Reserve Board in Washington and the senior professionals of the Survey Research Center can and does result in considerable amount of time-consuming discussion. It seems to be agreed that much of the discussion and joint planning, both of questionnaires and tables, results in a richer product than if either staff were operating independently. Nevertheless, working relationships between the two research staffs, each with highly competent and independently minded scholars, is not without some difficulties.

It would seem that cooperation could be very more effective if the time involved in joint planning of a given Survey could be stretched out longer than at present. For example, it would help if the Board could make commitments of intent at least a year in advance with respect to the making or not making of a Survey. In some cases, the final decision to authorize a survey has not been forthcoming until summer. In view of the need to tailor each survey to changing requirements of the Federal Reserve Board and other agencies, this reduces to an all too short and hectic period the time to prepare and pretest a questionnaire to go into the field in the following January. Moreover, the Survey Research

Center needs to make its commitments to junior professional personnel in the spring rather than in the summer.

Further discussion of the problems of coordination is reserved for a later point in this chapter.

2. Questionnaire. The questionnaires used in the Survey of Consumer Finances have developed over the years into instruments formidable in their complexity. They are among the longest and most intricate of any questionnaire used by interviewers in a sampling survey.

Even more formidable than the questionnaires themselves are the detailed definitions and instructions which must cover every phase of the sampling, interviewing, and editing and coding operation. Over the years, experience has made it possible to build in various checks on internal consistency, and to organize the questionnaire for optimum interviewer efficiency.

This committee is well aware that the complexity of the questionnaire obviously could be reduced by not attempting to get certain items of information now sought, like savings or liquid assets. Whether such a saving would be wise is a policy matter on which much difference of opinion may be expected.

It is our opinion that, given the present objectives of the survey, the questionnaire now in use is not susceptible to much simplification. It is regrettable, however, that there has not been even more concern about the need for systematic studies of the effects of asking questions in alternative forms. Improvement in the wording of questions about attitudes and behavior should come as a result of carefully designed experimental research. Budgetary limitations on experimentation are part, but perhaps not all, of the reason for failure to carry out adequate research. Another might be too much complacency on the part of those responsible for the Surveys.

3. Sample. The Survey covers a sample of some 3,000 spending units. The method used is the probability sampling method, with oversampling of households in the higher income brackets.

The Survey Research Center was one of the first nongovernmental surveying agencies, if not the first, to use the probability method of sampling on a nationwide basis. The much cheaper quota method was the standard practice in almost all private agen-

cies prior to 1950 and is still in wide use. No responsible statistician would question the superiority of the probability method over the quota method, if an agency is willing to pay for recalls to reduce the nonresponse rate to a minimum. There can be little doubt that the probability sample costs from two to five times as much as the quota sample of the same size, but it eliminates at least one major source of interviewer bias and it makes possible mathematical calculations of tests of significance and of errors of estimation. However, there has not been as much actual computation of errors, especially errors of averages, as would be needed to exploit this advantage of probability sampling.

The probability method involves the random selection of small geographical areas throughout the country; the random selection of sample blocks or street segments or rural roads within each area; the prelisting of households to be interviewed from these lists. Because of the rapid mobility of our population, and of new housing developments, a sampling design cannot be frozen from one survey to the next, but needs to be continually revised. Far simpler and cheaper is the so-called quote method, which leaves to the interviewers the selection of respondents within their sample community, subject to restriction quotas on age, sex, economic status, etc. The interviewer is freed from the costly burden of numerous recalls to those not at home and from the very delicate process of winning cooperation after an initial refusal to be interviewed. Yet omission of people who are not at home when first visited or who are reluctant to cooperate could introduce—especially on a financial study—a very serious bias.

While we have not examined in all its elaborate detail the sampling design used in the Survey of Consumer Finances, we have reason to believe that the design meets high standards, as judged by the best survey practice.

4. Field work. A good sampling plan could, however, be spoiled by inadequate field work, just as could a good questionnaire.

The first test to be applied to the field work is the success in getting completed, useable interviews from the respondents at pre-designated addresses.

Records of the Survey Research Center show the following percentages of completed interviews:

1954	87.7	1950	85.3
1953	84.7	1949	82.8
1952	83.4	1948	83.4
1951	85.1	1947	83.8

Further breakdown of the figures show that the response rate always varies inversely with income (as indicated by the rent area to which the respondent belongs). For example, in 1954 in the upper income households it was 81.6 per cent, in middle income households 87.1 per cent, and in lower income households 90.5 per cent. Also it is lower in urban than in rural areas. It is lower for secondary spending units than for primary spending units.

In 1954, slightly less than half of the refusals, comprising 5.6 per cent of all spending units, represented refusals to disclose any information. Another 1.5 per cent refused to disclose information on income or liquid assets or both. The remaining losses were due to inability to make contact with a responsible person in the spending unit.

The level of success, together with the cost per interview, must be judged in the context of the character of the study. There are few if any subjects more likely to be regarded as an invasion of privacy than a detailed probe into income, expenditures, and assets. Moreover, it is not sufficient to contact any member of a household who happens to be at home, but the interviewer must make recalls until he or she locates a person in the spending unit who can give him the information. The skew distribution of income and savings necessitates relative oversampling of the high income brackets and these, as is well known, are the most difficult contacts to make, either through absence from home or through refusals. Finally, the Survey involves a very long and tedious interview, which can get broken off in the middle if, for example, guests arrive in the home, thus requiring additional visits for completion. An interviewing staff of high quality, well-trained and supervised, and experienced in asking difficult and delicate questions is required, and the Center has as competent a staff as can reasonably be expected.

All these problems are illustrated in the response rates and costs of the Survey as compared with a far simpler study made by the Center in 1954 for the Polio Evaluation Center.

In the polio study the total nonresponse rate was only 5 per cent as compared with 12.3 per cent in the Consumer Finance Survey and the refusal rate only 1 per cent as compared with 7.1 per cent in the Survey. Both studies used probability samples, but the polio questionnaire averaged only 10 to 15 minutes per interview while the Survey averaged 45 minutes to an hour.

More important, however, was the fact that any adult in a household could answer the polio questions—in fact 89 per cent of the respondents were females. By contrast, 85 per cent of the Survey respondents were males. The Survey restriction on respondents to responsible informants is reflected in the comparative number of calls necessary per completed interview:

Number of calls required	Polio Study (In per cent)	SCF (In per cent)
1	71	39
2	19	30
3	7	15
4	2	9
5	1	4
6	—	2
7 and over.....	—	1
	100	100

Inevitably, such differences are reflected in costs. The comparative costs per interview for interviewer's salary and travel were as follows:

	Polio Study	SCF
Salary	\$1.87	\$ 8.33
Travel74	2.24
Total	\$2.61	\$10.57

To anyone familiar with the costs of recalls, the fact that the Survey cost four times as much in interviewer outlay as the Polio Study does not seem excessive.

Of course, direct interviewing costs are only part of the field expenses. Salaries of office staff, regional and county supervisors,

and travel to supervisor meetings, together with training costs for new interviewers who must constantly be recruited because of the high turnover among this class of work, raised the costs per interview on the Survey to \$17.55. The cost of field work on the 1954 Survey was \$52,649, to which should be added \$12,964 for costs involved in selecting of the sample, preparation of maps, prelisting of households, etc.

While this is a very substantial sum of money, it appears to be a necessary expenditure considering the nature of the inquiry and the high standard of performance sought. It may be that some other agency could do as good a sampling and field job for less money, but any comparisons of costs with other studies, done by such an agency or by the Survey Research Center itself, clearly must take into account the nature of the inquiries being compared.

5. Editing and coding. These are highly complex operations, as compared with what is involved in the average study.

The information on a given questionnaire has to be brought together systematically for each main topic—for example, debt—and quite elaborate calculations carried out. This has two purposes: First, to discover omissions and palpable errors which if serious may be corrected by seeking further information from the interviewers. (In the case of minor omissions, assignment of arbitrary values sometimes is made according to specified procedures.) Second, to permit the calculation of many intermediate figures such as the ratio of personal debt to total income for each spending unit.

One of the heavy editing and coding operations involves the calculation of disposable income after income tax. This effort is required because of the Federal Reserve Board's policy decision, which is quite understandable, prohibiting the Center from seeking direct information on income taxes from the respondent. Two large work sheets, elaborate in their detail, are required for data transferred from the original schedule and many pages of detailed instructions. The editors find it reasonably simple to compute an estimated income tax for wage-earning households which are a single spending unit with no other income, but the problem is obviously extremely complex for entrepreneurs and for spending units in the high income brackets generally.

The Center is experimenting continually with various ways of cutting costs on editing and coding. This has been done, for instance, by increasing the work to be done in actual machine tabulations, but careful study is required to see whether a given proposed change actually reduces over-all costs, since increased tabulation costs can more than offset savings at this stage. The 1954 SCF cost \$8,358 for editing and coding and \$7,376 for machine tabulations.

6. Tabulation. Tabulation of the complex data from SCF is bound to be expensive, but is the more so because economic information is so skewed that weighted subsamples are required in order to get representation at the higher income levels. An elaborate system of weights, to take account both of different sampling ratios and different response rates, makes the building of aggregates a very complicated business. The Survey Research Center has experimented with a variety of methods of machine processing and has worked out, in cooperation with the University Tabulating Service, what is believed to be an unusually efficient technique for handling weighted runs.

In spite of the increase in elaborateness of cross-tabulations now furnished, and in spite of the very substantial rise in costs per hour of tabulating time, it may be noted that the tabulating cost of the 1954 Survey was the lowest for any Survey since 1948.

This is not to say that further improvements are impossible. Entirely new methods of tabulation—for example the use of tape in electronic computers rather than punched cards—might be applicable and might yield richer information at greater speed and no increase in costs. An electronic machine is available at Michigan, and the Center should be encouraged to experiment further with its use.

7. Preparation of current reports. The actual reports which appear in the *Federal Reserve Bulletin* are prepared by the staff in Washington from a much larger number of tables supplied by the Survey Research Center.

In 1950, advanced tabulations were introduced, speeding up the reporting process and making publication possible as early as the March *Bulletin*. Moreover, the total analysis process has been expedited. In 1949 the last tabulations did not reach the Board

until autumn; the 1954 tabulations were completed by July; and it is hoped to finish the 1955 tabulations by May.

This expediting has been effected by speeding up and streamlining as much as possible each phase of the operation. Without improved efficiency, this would have been impossible, since speed costs money, and the total budget of SCF has remained constant since 1951.

Obviously, the *Federal Reserve Bulletin* must be selective in the tables it actually publishes. It uses only a small percentage of those supplied, and in 1954 published one of the briefest reports for many years.

We view with an especially critical eye the failure to make a larger proportion of the assembled information available to the public, especially to responsible users in industry and in the academic profession. While cognizant of some of the difficulties, we feel that much more should be done than has been done in the past. Even if it is necessary to allocate additional funds, the expenditure would be small in comparison with the total cost of the Survey and could have a multiplier effect in disseminating the findings and stimulating new thinking about the consumer sector of our economy.

8. Methodological and substantive research studies. It is fairly obvious that the money available for the Survey of Consumer Finances does not leave much margin at Michigan for methodological or related substantive studies. We have already accounted for most of the \$150,000 expenditure, except for a miscellaneous item of \$15,954 in 1954 for vacation and annuity, and for travel and salaries not allocated to specific phases of the operation above, and except for an overhead figure in 1954 of \$13,513. (Incidentally, the overhead, which must compensate the university for housing, fuel, light, etc., and which amounts to about 8 per cent of the total contract, is low in comparison with government contracts to universities generally.) Some of the time of the senior staff, whose salaries are paid in part from the Survey of Consumer Finances, is, as was indicated earlier in this chapter, available for methodological research or related substantive studies. But almost all research for the improvement of techniques or the trying out of new concepts on a small-scale experimental basis must be paid for by funds from sources other than the Federal Reserve Board. Even when the Center was able in 1953 to experiment with a resurvey

of spending units, it achieved this with partial support for analysis from the Rockefeller Foundation.

By and large, such methodological studies as the Center has been able to make requiring new data from the field have been as a result of support from sources other than the Federal Reserve Board. The interim surveys, financed from various sources, are a case in point. One of the most searching research studies, financed by the Ford Foundation at a cost of \$148,500, is now in progress. It is called "The Relation of Attitudes to Economic Action."

It seeks to get repeated interviews from a sample of respondents at four separate points in time. Two main questions are being investigated:

- (1) How do shifts in people's attitudes and expectations come about? Why do substantial shifts occur at about the same time among many people?
- (2) How do changes in attitudes combine with traditional economic variables to affect behavior? What types of attitudes are most potent in this respect?

The Center hopes that this project will make some new contribution to basic economic thinking. At the same time, like the reinterviews in the 1953 Survey, it should provide, through its checks on the relation between individual expectations and individual behavior, source material for improving the kind of questions asked on subsequent Federal Reserve Board Surveys.

We are strongly of the opinion that a major fraction of the sample in each current survey should involve such repeated interviews. If the Ford Foundation study can suggest how to do this better, a major gain will result. We believe that there is room for improvement in tracking down respondents who move between the first interview and the second. This becomes almost impossible if a policy is rigidly adhered to of not keeping a record of *names* of respondents. Such a confidential record would not appear to conflict with the essential purpose of guarantees of anonymity. It must be frankly recognized that follow-up interviews can cost substantially in time and money, but such interviews provide our only source of information on the relationship between individual attitudes and behavior and on changes in individual's attitudes and behavior.

While we record our respect for the efforts of all concerned with the Survey to make new substantive and methodological forays, warning is needed lest success breed complacency. The research staff, both at Michigan and in Washington, always will need the constant challenge of new ideas. This is the strongest of all arguments in favor of broadening the interest of economists, psychologists, and others throughout the country in the potential values of the Survey of Consumer Finances. With increased use will come increased concern to make the Survey better and thereby help to contribute more effectively to government, business and to the science of economics.

9. **Summary.** Without, of course, claiming to have made a meticulous accounting of every detail of the Survey Research Center's service to the Federal Reserve Board, we can find no reason to doubt the integrity, the operational efficiency and economy, and the high technical standards which characterize the Center's work. We recognize the importance of continuity in the administration of the program by an organization with such a fund of experience and professional competence. This does not imply that costs could not be cut if major areas of the Survey of Consumer Finances were eliminated or that values of the Survey could not be enhanced if more money were available.

At the same time, we do not view the present operation with un-mixed satisfaction. On the side of making available important findings, there are shortcomings. Much more of the data collected and analyzed should be made public. There should be even more concern than at present with improvement of techniques and development of new concepts. In particular, increasing emphasis needs to be placed on repeated interviews, which, though often difficult and costly, are the only means for studying the relationship between an individual's intentions and his subsequent behavior or for studying an individual's shift in his intentions or his more general attitudes.

VI. POSSIBILITIES OF IMPROVEMENT

Our general assessment of the Survey of Consumer Finances is that it has been a useful and worthwhile undertaking by the Federal Government—particularly when supplemented by private endeavor

in the same field, which the Government's activity can induce. It is an activity which reflects credit both on the vision of the Federal Reserve Board and the skill of the Survey Research Center. An organization such as the Survey Research Center, financed by both private and government funds, can probably achieve better results than would be achieved if it were wholly government or wholly private. Complete reliance on private support, particularly support from organized business, agricultural and labor groups, might lead to overemphasis on short-run forecasting and relative neglect of collection of data that are basic to an understanding of consumer behavior. Complete reliance on government would deprive the enterprise of the support that it already receives from private sources and might well limit the amount of experimentation and research which it carried on.

The Survey of Consumer Finances is particularly useful because it stresses information concerning the present as well as expectations concerning the future. Any further concentration of resources on expectations, to the detriment of data on actual behavior, would seriously diminish the usefulness of the Survey, while elimination of the expectations part of the Survey would cut off a new and promising type of economic information. We therefore recommend that the Survey should retain its present scope. Specifically, it should continue to deal with (a) expectations, estimates of the current situation, and buying intentions of consumers; (b) their current economic and demographic circumstances; and (c) past income and spending and saving behavior.

We emphasize that the main justification for the Survey of Consumer Finances is not the provision of direct information concerning future purchases by consumers. The connection between expressed intentions and future action is tenuous and complex. An intention to buy or not to buy at the present time is merely one relevant factor in predicting what the consumer will actually do. In addition, information is needed on his capacity to carry out his intention—his income, his assets or his debts—and on his customary behavior as indicated by past experience. A prediction for say a year hence must also take into account the impact of changes in general economic conditions on the economic position of the consumer as it is today. The usual methods of prediction that depend

essentially on the analysis of the behavior of the economy as a whole and on the projection of past trends in consumer behavior can be usefully supplemented, but not replaced, by surveys of attitudes and intentions.

Our endorsement of the general usefulness of the Survey of Consumer Finances does not mean that we consider it perfect. In fact, our appraisal in the foregoing chapters indicates that the Survey of Consumer Finances leaves much to be desired. Some of its shortcomings are inherent in any survey—for example, no technique can jog the human memory into perfect accuracy; nor can it prevent intentions to buy, however firm they may seem at the present time, from being revised. Other defects may be removed by some redirection of effort, experimentation with new survey designs, interviewing techniques and analysis and presentation. Still others require, for their removal, a larger sample and more elaborate and expensive interviews and analysis.

To give practicality to our suggestions, we divide them into two categories: those that could be accomplished within a budget of the present size, and those that would require increased expenditures. We see no possibility of a substantial reduction in the present budget without serious deterioration in the usefulness of the Survey. Some of our proposals are suggestions rather than definite recommendations. We are impressed with the fact that an outside reviewing group cannot make final prescriptions without the benefit of extensive operating experience.

A. IMPROVEMENTS THAT REQUIRE NO APPRECIABLE INCREASE IN THE PRESENT BUDGET

1. **Reinterviews.** The usefulness of the expectations part of the Survey of Consumer Finances depends heavily on our ability to relate expressed buying intentions to actual purchases. If intentions are abandoned or revised, we need to know why. And comparison of intended with actual subsequent behavior can throw much light on the nature of intentions themselves. How firm a commitment in the consumer's mind do they represent and what time span do they cover?

We are convinced that the full usefulness of surveys of expecta-

tions can only be realized if such comparisons between actual and expected behavior are possible. Something can be done on an aggregative basis. Total expected purchases can be compared with total subsequent sales. But these comparisons add little to our basic understanding of consumer behavior. What is needed is comparisons for the same individuals. These can only be made by reinterviewing the same individuals and making direct comparisons between what they actually did and what they said they were going to do.

Reinterviews can also improve information concerning the past. For a family to remember what its income or assets were a year ago is extremely difficult, and the survey results are bound to be inaccurate on this account. If the same families are interviewed for two years in succession, some indication of the reliability of memory information is obtained and the need to rely on memory data is reduced.

To reinterview the whole sample is of course costly and could not possibly be undertaken within the present budget. But it is feasible to construct the sample for a particular year half with newly selected families and half with families that were interviewed in the previous year. This was done in 1953. Without appreciable change in the present interview schedule, it will then be possible to compare expected with actual behavior for the latter category of families.

Such a procedure does mean some slight technical impairment of the sample and it does not wholly meet the need for reinterview. For instance, families who had moved from their former addresses were not reinterviewed in 1953, although those who had moved in were covered. Despite these disadvantages, we believe that the procedure should be used more than it has been in the past, and we would further suggest that families in the reinterview sample who have moved within the same city or county be traced and reinterviewed whenever practicable. These follow-ups would eliminate a large part of the attrition due to moving. It would, indeed, be necessary for the interviewer to secure the name as well as the address of the respondent. However, we have not been persuaded that this would cause a serious refusal problem.

We therefore recommend that the Survey Research Center regu-

larly draw half of its sample for the Survey of Consumer Finances from the sample of the previous year and thus secure reinterview data for testing both expectational and memory statistics.

2. Conferences on policy and methods. We discern in the Survey Research Center some inclination to adhere to certain psychological and economic preconceptions which should be the subject of continual testing and discussion with other research workers and users of survey data. For instance, the Center has tended to the view that the existing stock of consumer durable goods is not a major factor in predicting future purchases, and inadequate information on this subject is contained in the Surveys. Furthermore, the published tabulations and cross-tabulations necessarily reflect the judgment of the compilers concerning the relevance of the economic variables involved. On such matters we believe that the Federal Reserve Board should seek the advice of other competent workers in the field of consumer behavior through direct conference as well as from their published research.

We therefore recommend that periodic conferences be held with respect to the scope, methods and analysis of the Survey of Consumer Finances. University research workers and users of survey data from the fields of business, labor and agriculture might well be invited to participate.

3. Stimulation of research and analysis. We are convinced that both the financial and attitudinal data gathered in these surveys need to be analyzed more extensively in order to exploit the potentialities of the data more fully, to meet the needs of users more adequately, and to improve the concepts and planning of the survey itself. To this end we believe that research workers outside the collecting agencies should have maximum feasible access to the survey data. Several means to this end have been suggested. Special tabulations of the data have normally been made available by the Federal Reserve Board or Survey Research Center upon request, and this should be continued. Research work by both regular staff and visiting scholars at the University of Michigan should be continued and expanded. Arrangements should also be made with other research centers to undertake analysis of Survey data. All raw data, including the punched cards, would naturally be made available to those research centers. As another possi-

bility, duplicate punched cards with identification removed could be made available to research workers who familiarize themselves with the concepts, methods and limitations of the Survey.

We feel that the present system for providing special tabulations on request is inadequate for university research work on at least three counts: (a) correlations and other calculations from the original data cards are often needed; frequency distributions, even with several variables, do not suffice; (b) such calculations can be done more cheaply and flexibly by those conducting the research at universities than by the collecting agency; and (c) the sequential nature of much research makes it impossible to determine in advance what tabulations are needed.

On the other hand, we recognize that making either duplicate punched cards or detailed tabulations widely available raises problems of feasibility deciding on the qualifications of applicants, and possible misuse of the data. It is assumed, whatever procedure is adopted, that the collecting agency has a responsibility to explain, and the recipient of the data a responsibility to familiarize himself with, the concepts, methods, and limitations of the survey.

We recommend: (a) that the Federal Reserve Board or the Survey Research Center make special arrangements with particular research centers to undertake analytical research on Survey data; (b) that procedures be established to provide research workers with adequate access to Survey data, and, in view of the fact that a similar problem confronts many government agencies, that a committee of the American Statistical Association study the problem of how to make original data of government agencies more readily available to research workers.

4. Continuity of data. Although the Survey of Consumer Finances must necessarily be the subject of experiment and change, its usefulness has been impaired by changes in methods of presentation and in content that seem to us to be unnecessary. This is true of some of the attitudinal questions. The usefulness of the Survey will depend very largely on the accumulation of series of data that are comparable over a number of years. Each annual survey, simply standing on its own feet, has but limited usefulness.

We therefore recommend that the Surveys provide data that are comparable over as long a period as is feasible.

5. Information on sampling errors of Survey statistics. Estimates of the sampling error for percentages of distribution based on various numbers of respondents were published in technical notes or appendices in each year from 1948 to 1952 and in 1955. There has been no such presentation of sampling errors for medians or means, and reference to sampling and response errors in the tables and text of articles reporting survey results has been minimal. Yet one of the principal advantages of using the relatively expensive probability sample is that it permits computation of reliability statistics. We believe that a data-gathering agency has a responsibility to acquaint users of its data with the reliability of the various statistics it publishes, and we feel that estimates of sampling error should accompany tabulated data in text or table, so that they will be seen and understood by the educated nontechnical reader.

We recommend that published data be accompanied by indications of sampling errors whenever feasible, and that a detailed discussion of sampling errors be made available to technical users.

6. Integration of the Survey of Consumer Finances and interim Surveys. At the present time, the information on attitudes and buying intentions contained in the interim Surveys conducted by the Survey Research Center is not readily comparable with information on the same subjects in the Survey of Consumer Finances. The usefulness of the interim Surveys, which contain meager data on the financial or economic positions of those interviewed, would be materially increased if their published results were related to the data on those subjects included in the annual survey. And the expectational statistics in the annual Survey would be more useful if they could be used in conjunction with the interim Survey figures. We recommend: (a) that the interim Survey use a sample that overlaps in whole or in part the sample of the previous Survey of Consumer Finances; (b) that the questions on expectations, intentions and attitudes be consistent in the two Surveys; (c) that statistics from the interim Surveys be republished as part of the reports on the Survey of Consumer Finances; (d) that the published reports of the interim Surveys include relevant data from the annual Surveys.

7. Comparability with other Federal survey statistics. The usefulness of the Survey of Consumer Finances can be increased and confusion avoided to the extent that avoidable differences of con-

cept and classification between it and other survey statistics can be eliminated. At the present time, there are differences between the Survey of Consumer Finances and the Census Income Survey, the Bureau of Labor Statistics Survey of Consumer Expenditures, and the surveys conducted by the Department of Agriculture. While these differences were probably inevitable when the survey methods were in their formative stages and reflect on none of the surveys, they are confusing to the user. For example, the differing definitions of households, families, unattached individuals, and spending units are confusing and frustrating to users of data from several surveys.

We therefore recommend that the Bureau of the Budget and the agencies engaged in conducting surveys cooperate to eliminate avoidable inconsistencies and to explain justifiable differences in the various survey statistics.

B. IMPROVEMENTS THAT REQUIRE APPRECIABLY LARGER ADDITIONAL EXPENDITURES

When the limitation of a fixed budget is removed, many other possibilities of improvement are available. We believe that the Federal Government could usefully spend more money on consumer surveys, but it is not our province to suggest how much. We merely mention various ways by which the scope and reliability of the Survey could be improved.

1. Larger and more stratified sample. A national sample of 3,000 spending units is decidedly small from the point of view of what the Survey of Consumer Finances attempts to achieve. As an indicator of national behavior, its results are subject to considerable error when behavior varies considerably among economic groups and among regions of the country. The spending and saving behavior of high-income groups may differ widely from that of low-income groups, and purchases, say of automobiles, depend on the congestion and availability of other types of transportation in particular cities.

The small sample becomes extremely small when the cross-classification breakdowns are considered. With the present sample, national estimates frequently have to be based on blowups of "pockets" of as few as 100 spending units.

If a larger sample is undertaken, part of it should be devoted to finer stratification and more oversampling of high-income households. At the present time, a limited attempt is made to improve the results of the Survey of Consumer Finances by oversampling high-rent areas. That is, the proportion of high-income spending units in the interview sample is greater than their proportion in the national total. Finer stratification and even more oversampling are needed because of the greater variability in household incomes, assets, and spending behavior within high-income groups. If the sample data on income, assets, savings or expenditures are to be blown up to give national aggregates, this step is indispensable. It will also improve the reliability of estimates of behavioral relationships based on Survey data.

In addition to regular oversampling on the basis of income, it would seem desirable to oversample occasionally other types of households, e.g., farm households, families that have recently moved, unemployed, newly-formed households, unincorporated businesses, suburban households, perhaps groupings by city size or region. Oversampling of a particular kind of family, by increasing their number, permits more detailed cross-tabulations of data secured from those households and this facilitates research into the economic behavior of the group. We suggest that such groups whose behavior has special characteristics be oversampled periodically in order to obtain more complete and reliable information regarding them. The oversampling could be on a rotating basis, one or two groups being selected in a particular year.

A two-stage sampling procedure is apparently the most practicable procedure for finer income stratification and for oversampling most other groups. A preliminary large sample of households would be interviewed briefly to determine the characteristics relevant for stratification and then a smaller sample of households with the desired degree of oversampling would be interviewed with the complete questionnaire. The cost of the preliminary interviews would be roughly comparable to the cost of the Polio study reported in Chapter V.

In summary, a larger sample would yield: (a) detailed information concerning groups of households with special characteristics; (b) more reliable cross-tabulations of data; (c) improved national

aggregates, and (d) more reliable estimates of behavioral relationships.

2. More frequent and inclusive interim Surveys. The unreliability of memory and the volatility of attitudes both suggest that an annual survey covers too long a period in prospect and retrospect for many items. This is particularly true for changes in liquid assets and debt, the smaller expenditure items, buying intentions, and expectations; it is not so important for income, house and automobile purchases and much demographic data. Consequently, we suggest that three interim surveys be regularly scheduled between each annual survey and that they cover those items in the annual survey which need to be secured more frequently.

3. More extensive reinterviews. With a larger sample, more extensive reinterviewing of a significant number of families would be feasible. For many purposes families should be reinterviewed twice or even more times. For example, data on a given family at three points in time are needed to test the hypothesis that fulfillment of purchase intentions depends on rate of change of assets in the preceding year, to test for the influence of income averaged over several years, or to determine time lags in consumer response. With additional financial resources it would be possible to follow up not only those who have moved within the same community but also those who have moved to other parts of the country.

In our opinion reinterviews provide the only satisfactory way to test the usefulness or relevance of statistics on expectations and intentions. Without such tests we cannot tell whether expectational variables add to our understanding of consumers' behavior. We are even left in doubt about the nature of the intentions at the time they are expressed, whether or not they are subsequently revised.

4. More inclusive publication of Survey results. We are informed that, in connection with the Survey of Consumer Finances, about 500 tables are prepared. Since only a fraction of these tables are published, a large amount of useful information is apparently going to waste. If additional funds become available, some part of them should be spent on more comprehensive publication of the Survey results. We suggest preparation of a source book covering the Survey of Consumer Finances and the interim Surveys which would summarize the historical data in comparable form and describe the

methods and limitations of the Surveys. This could then be supplemented by an annual publication which would make detailed tabulations of the most recent survey data available to interested persons.

5. More complete financial data. Prior to the 1952 Survey of Consumer Finances an attempt was made to obtain changes in the total net worth of families interviewed, thereby leading to an estimate of total saving. Much of the information needed was hard to get and much was admittedly inaccurate. But if the size of the sample were increased and added attention given to groups with special characteristics, such an estimate within a reasonable margin of error should be feasible. If an adequate enlargement of the sample is undertaken, we believe that the net worth savings estimates should be restored.

6. More information concerning stocks and acquisition of durable goods and houses. Especially for short-run forecasting purposes, information is needed concerning not only the numbers of durable goods owned or houses occupied but also concerning their age distribution (now given for cars and houses) and other characteristics. Also data are needed on sales of houses and other durable goods (other than trade-in of cars, now covered), on receipt of consumer durables as gifts, and on number of consumer durables installed in rented premises or purchased with a house. The collection of such data has been consistently neglected in the Surveys. We share the opinion of many users of the statistics that the usefulness of the Surveys would be greatly increased if information of this type were obtained.

7. More analysis of results and experimentation in methods. We have already stressed the need for more analysis—to interpret Survey results more adequately, to develop predictive formulae and to improve the Survey itself. This need will be partly met if the raw data are made available to independent research workers. But to achieve the best results more analysis than is now being done should be carried on by agencies with operating experience. Accompanying this analysis should be more use of pilot studies on small samples, experimental research to test specific hypotheses and methodological research on the collection and processing of the data. Examples of needed methodological research are more experiments with alter-

native methods of question wording and more experiments which explicitly compare actual records with responses from memory.

8. More checks on accuracy of Survey results. In addition to the use of reinterviews for checking the accuracy of Survey data, we feel the need for more efforts at validating Survey results. Given an increased budget, additional funds should be devoted to checking survey results against information from independent sources, e.g., financial institutions or national income aggregates adjusted to cover the same population as that sampled in the Surveys. Such checks might well lead to improvements in both of the compared sets of statistics and could increase the confidence of users of Survey data.

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APPENDIX A

INFORMATION ON INTERIM AND REINTERVIEW SURVEYS
CONDUCTED BY THE SURVEY RESEARCH CENTER

INTERIM SURVEYS

Date	Sample size	Publication
July 1947	700	(1) <i>Federal Reserve Bulletin</i> , October 1947.
July 1948	1655	(2) <i>Federal Reserve Bulletin</i> , November 1948.
July 1949	1850	(3) <i>Federal Reserve Bulletin</i> , October 1949.
October 1949	1242	(4) Butters, Thompson, and Bollinger, <i>Effects of Taxation: Investments by Individuals</i> , Boston: Harvard University Graduate School of Business Administration, 1953. (5) Katona, George, "Expectations and Decisions in Economic Behavior," <i>The Policy Sciences</i> , eds., Lerner and Lasswell, Stanford, California: Stanford University Press, 1951. (6) ———, <i>Psychological Analysis of Economic Behavior</i> , New York: McGraw-Hill Book Co., 1951.
August 1950	500	(7) Katona, George, and Mueller, Eva, <i>Consumer Attitudes and Demand, 1950-1952</i> , Ann Arbor: Survey Research Center, University of Michigan, 1953.
June 1951	999	(8) See (7).
November 1951	957	(8) See (7).
June 1952	929	(8) See (7).
November-December 1952	1133	(8) See (7).

Date	Sample size	Publication
September–October 1953	1023	(9) <i>Business Week</i> , Nov. 21, 1953. (10) <i>Michigan Business Review</i> , January 1954.
June 1954	1365	(11) <i>Business Week</i> , July 31, 1954. (12) Katona, George, "The Predictive Value of Data on Consumer Attitudes," paper presented at Montreal meeting of American Statistical Association, Sept. 10, 1954.
October 1954	1139	(13) <i>Business Week</i> , Nov. 27, 1954. (14) See (12).

The first three of the above surveys were financed by the Federal Reserve Board. Subsequent surveys were conducted in conjunction with the Public Affairs Program and the Human Relations Program of the Survey Research Center.

REINTERVIEW SURVEYS

Date	Sample size	Publication
January–February 1949	655	(1) Lansing, John B., and Withey, Stephen B., "Consumer Anticipations: Their Use in Forecasting Consumer Behavior," <i>Short-Term Economic Forecasting (Studies in Income and Wealth, Vol. XVII)</i> , National Bureau of Economic Research, Inc., Princeton: Princeton University Press, 1955. (2) Klein, Lawrence R., ed., <i>Contributions of Survey Methods to Economics</i> , New York: Columbia University Press, 1954. (3) Katona, George, <i>Psychological Analysis of Economic Behavior</i> , New York: McGraw-Hill Book Co., 1951.

Date	Sample size	Publication
January-February 1949 (Cont.)	655	<p>(4) ———, "Expectations and Decisions in Economic Behavior," <i>The Policy Sciences</i>, eds. Lerner and Lasswell, Stanford: Stanford University Press, 1951.</p> <p>(5) Katona, George, and Fisher, Janet, "Postwar Income Changes of Identical Consumer Units," <i>Studies in Income and Wealth</i>, Vol. XIII, New York: National Bureau of Economic Research, Inc., 1951.</p> <p>(6) Klein, Lawrence R., "Assets, Debts, and Economic Behavior," <i>Studies in Income and Wealth</i>, Vol. XIV, New York: National Bureau of Economic Research, Inc., 1951.</p> <p>(7) ———, "Estimating Patterns of Savings Behavior from Sample Survey Data," <i>Econometrica</i>, Vol. XIX, No. 4 (October 1951).</p> <p>(8) Klein, Lawrence R., and Mooney, H. W., "Negro-White Savings Differentials and the Consumption Function Problem," <i>Econometrica</i>, Vol. XXI, No. 3 (July 1953).</p>
October 1949	590	<p>(9) Butters, Thompson and Bollinger, <i>Effects of Taxation: Investments by Individuals</i>, Boston: Harvard University Graduate School of Business Administration, 1953</p>
Summer 1952	1388	<p>(10) See (1) through (8) above. Mail reinterview, no publication of data.</p>

Date	Sample size	Publication
January-February 1953	1036	(11) Klein, Lawrence R., and Lansing, John B., "Decisions to Purchase Durable Goods," unpublished research report of the Survey Research Center. (12) Schweiger, Irving, "Preliminary Report of Findings from the Re-interview Study of 1953 Survey of Consumer Finances," unpublished report of the staff of the Federal Reserve Board, dated Sept. 9, 1954.

In addition to the above, the Survey Research Center is now conducting a three-year study financed by the Ford Foundation. The study began in March 1954, and involves several waves of interviews with some reinterviews and some new respondents in each wave after the first. The sample size is about 1500.

Of the four reinterview studies listed above, the first and fourth were conducted as a part of the Survey of Consumer Finances. The field work for these two and the mail reinterview survey were financed by the Federal Reserve Board. The Rockefeller Foundation financed the analysis of the first two reinterview surveys listed above. The field work for the second was financed by the U. S. Treasury, Harvard University, and the Survey Research Center.

APPENDIX B**EXCERPTS FROM RESPONSES TO COMMITTEE'S QUESTIONNAIRE
SENT TO USERS OF SURVEY DATA**

PURPOSE AND METHODS

In order to obtain more knowledge of the usefulness of currently published consumer survey data, the Committee supplemented its interviews by a mail questionnaire. Present or potential users of consumer survey data were asked to give information on their sources and uses for such data and on their evaluation of currently published reports on consumer surveys.

The questionnaire letter, reproduced below and on the following page, was sent to 66 persons—26 suggested by Committee members on the basis of their interest and qualifications in the field under investigation and 40 from Federal Reserve Board mailing lists of persons who have requested reprints of other information about the Surveys of Consumer Finances. The Committee's mailing list included industrial marketing research analysts, trade union economists, research personnel in financial institutions, trade associations and publishing companies, economic consultants, and noncommercial economic research workers in universities and elsewhere. (Government economists using survey data had been interviewed previously.) Twenty-nine replies were received from a wide range of users of consumer survey data.

Since the Committee's mailing list was drawn up to include persons familiar with consumer survey data, it is not surprising that all of the respondents indicated they used such data, though three said they make little use of them. It is also to be expected that, as shown in Table 1, most of the respondents used data from the Survey of Consumer Finances. Other sources were probably used by more respondents than mentioned them specifically in their answers.

Littauer Center
Harvard University
Cambridge 38, Massachusetts
February 21, 1955

The Federal Reserve Board has set up a Committee on Consumer Expectations to review and appraise survey research in the consumer field. The Committee is concerned with major continuing programs for gathering economic data by means of household interviews. Though data on consumer expectations and buying intentions are of primary concern, the Committee will also

evaluate survey methods for obtaining historical data on consumer finances and spending.

To aid it in judging the need for statistics of this type and the adequacy of currently published consumer survey data, the Committee is inviting comments from a broad range of users, or potential users, of such information. We should welcome your thoughts on this problem.

In your response the Committee would like to have you cover such questions as the following:

Do you use published data obtained from consumer surveys?

What types of data and from what sources?

What are the principal uses of such data to you?

Are the consumer survey statistics as currently published adequate to your needs?

What additional information of this type would be most useful to you?

What needs can be met by consumer survey data, in particular by data on consumer expectations and intentions, which could not be met by other statistics?

We appreciate your contribution to an evaluation of this relatively new field in economic statistics.

Sincerely yours,

ARTHUR SMITHIES, *Chairman*

Committee on Consumer Expectations

TABLE 1

SOURCES OF CONSUMER SURVEY DATA USED BY RESPONDENTS

Source	Number reporting use
Survey of Consumer Finances	28
Interim Surveys of the Survey Research Center	7
Census Bureau	4
Bureau of Labor Statistics	4
Department of Agriculture	3
Crowell-Collier Automotive Survey	3
Miscellaneous	3

USES OF CONSUMER SURVEY DATA

The uses made of survey data are numerous. Industrial economists and market analysts use the information in preparing general economic forecasts (often as a check on other methods), in analyzing the market for particular goods, as a guide to advertising and distribution efforts, in setting production schedules, and in planning expansions of capacity. Trade associations and economic consultants use survey data for general and market forecasting and also distribute selected portions of the survey reports to their members or

clients. Financial institutions are particularly interested in savings, debt, and liquid asset information and in data on the housing market as a help in setting investment policies. Publishing companies engage in economic forecasting, use survey data as the basis for articles, editorials, and analyses of particular markets, and also take survey information on distributions of families by various characteristics as a benchmark in describing their readers to prospective advertisers. Finally, noncommercial research workers use the data for analyzing consumer behavior, for making predictions, and as a basis for lectures and articles.

OVER-ALL EVALUATIONS OF CONSUMER SURVEYS

Over-all evaluations of present consumer surveys were generally favorable, in part of course because of the selection of the persons contacted. The most frequently recurring comment was that much of the data obtained in the surveys was simply not available from any other source. Excerpts from some of the replies follow.

The survey of households represents one of our major sources of information on the characteristics of car buyers. . . . Literally dozens of special studies and reports have been developed for our management from consumer survey data. . . . We are not aware of any other source of material on consumer intentions and expectations that is as reliable as the Survey Research Center.

We shall continue to encourage research which will provide us with fairly reliable indicators of what consumers' buying plans are likely to be. Even though we are able to develop estimates of expenditures . . . from other sources, the consumer survey data are valuable as a check and it is possible that we may one day place a more complete reliance upon them.

Frankly our use of SCF (Survey of Consumer Finances) is rather limited and we are concerned at the emphasis placed by the press upon the conclusions, with usually no mention of the limitations of the data.

We find very valuable the information found in the Survey of Consumer Finances sponsored by the Federal Reserve Board.

The data published in these surveys are helpful in analyzing the current general business situation and, to some extent, in forecasting over-all business conditions. . . . To the present time, we have found no way of quantitatively taking these findings into account, but they are considered as qualitative factors in analyses and forecasts made largely by other means. . . . Experimentation with such surveys may provide much-needed insight and should be continued.

The Survey of Consumer Finances is the only source of much of the data it supplies.

The statistics currently published as a result of consumer surveys seem to be largely adequate for our needs. . . . Obviously consumer survey data supply information regarding consumer expectations and intentions which cannot be supplied by any other means.

We find consumer surveys of great value in our work. . . . We have been especially dependent on your own "Survey of Consumer Finances" for information on automobile purchase and ownership which is available from no other source. . . . We have always had a high regard for this annual survey and hope that it will be continued.

The surveys have been extremely helpful in measuring the response of consumers to changes in economic conditions and world affairs—military or international developments.

Looking ahead, we think, is precisely what consumer surveys may be able to do, and to the extent that they succeed in this they are meeting needs that cannot be met by any other statistics that we know of.

It would seem to me that data on expectations and intentions has value that no existing data has in that it tends to predict the future positively rather than by inference from the past.

Current data on the characteristics of savings bank deposits and depositors is nonexistent, so that the information collected by the Board and published in the *Federal Reserve Bulletin* is invaluable.

In general, we feel pretty well satisfied with the work that is being done in this field, even though there is still room for extension of that work—as there always is with economic statistics.

None of (my associates) place heavy reliance on statistics of the consumers expectations. One of them checked the Federal Reserve expectations against subsequent events and found considerable deviation.

If one thing is evident on the subject of consumer expectations and plans, it is that little is known relative to what has yet to be ascertained. . . . Even if the survey technique were totally unsuccessful in obtaining *ex ante* data on consumer behavior, its value in providing *ex post* information on this subject, much of which cannot be obtained in any other manner, more than justifies its use and continual work to improve it.

Consumer survey data supply information by income classes, and on patterns of expenditures which are not met by other statistics.

Much historical information not elsewhere available is furnished by the Surveys. . . . I would still urge continuing the work of consumer intentions and expectations but would stress more investigation of what it has actually added to our understanding of consumer behavior.

I feel that an annual national survey of income and consumption with special emphasis on durable goods is a valuable part of the statistical series

of the Federal Government . . . providing important insights as to distributions. . . . I am fully in sympathy with the objective of the collection of data on consumer expectation and buying intentions, namely better prediction of demand for those portions of the consumer budget most likely to fluctuate a good deal from year to year. The contribution these data make to prediction is by no means established.

I consider this (intentions) type of survey to be potentially as important an aid to forecasting as has been developed. There is no other method available for obtaining a feel of the future demand for existing residential property and no other that can cover so well the demand for new houses.

SPECIFIC CRITICISMS OF CONSUMER SURVEYS

After their commendations of the consumer surveys the respondents turned into critics and pointed out deficiencies and omissions which they noted in the survey data. Criticisms of the surveys will be grouped below into (a) those applying to the collecting of historical data on financial and demographic characteristics of spending units and (b) those relating to the attitudinal data—buying intentions, assessment of current economic situation, and expectations regarding the future.

(a) Criticisms related to historical data collected in consumer surveys:

(1) *Larger sample.* Despite recent improvements in sampling technique, a sample of some 3,000 spending units out of 53 million is bound to be subject to significant sampling and reporting errors. We are especially concerned with the validity of the cross-classification breakdowns. In some cases, these estimates are based on a blowup of "pockets" of as few as 100 spending units or less.

For our purposes we would like very much to see the basic sample enlarged in order to permit more thorough analysis of some of the minor variables.

Unfortunately for my purposes—analyzing construction markets and the demand for mortgage credit—these surveys seem to me of doubtful dependability because of the smallness of the cells into which the sample is subdivided by the time it gets down to these subjects. An enlargement of the sample would greatly add to the confidence that can be placed in the data and hence to the uses to which they may be put.

Larger samples are needed to make available regional data.

(2) *More detailed tabulations of data.* A cross-classification showing liquid asset holdings of those spending units with instalment credit outstanding would be useful to show the extent to which people borrow even though they have liquid assets available to purchase durable goods.

I would like to see a breakdown of *savings bank* deposits by income class, occupation, and age.

To the extent that the size of the sample employed permits, it would be desirable to cross-tabulate information on veteran status of the head of the family with information on income and age.

We would also like to see a clear breakdown, both in the field of intentions, and in the field of purchases during the past year, between new cars and used cars.

We would like to know what the liquid asset holdings are of people who plan to buy houses in various price brackets. We would like to know the amount and composition of consumer debt for persons who have varying amounts of liquid asset holdings.

In the supplementary table on investment preferences, the findings are shown by income groups. In this particular category, however, it would be useful if the "\$7,500 and over" income bracket were subdivided further, i.e., \$7,500 to \$9,999, \$10,000 to \$14,999, etc., even if this means adding upper income spending units to your sample. . . . It would be very helpful if the above information could be furnished more often than once a year and if it could be broken down geographically, although, of course, we are aware that this might be impracticable

One phase of consumer purchasing which we would like to see more emphasis on is the family development of the life cycle type of information and analysis. . . . Useful information in this connection would be information relating the ages of children to family purchasing.

In presenting these savings data, it is essential that they be given separately for the group of consumer units in each cell of the cross-classification generated by the following classification: (1) urban, rural nonfarm, farm; (2) single individuals, families of two or more; (3) non-entrepreneurial head, entrepreneurial head.

Reporting on a regional basis, or even better, on a community basis for the metropolitan areas . . . would be very useful.

(3) *Expanded coverage.* I do think, however, there is a most definite need for a more comprehensive picture on consumer current conditions. By this, I mean it would be most invaluable to know . . . how much of (the consumers' income) goes to food, to housing, and to steady forms of expenditure. But more important, how much is his indebtedness during the year ahead, so that we will find out exactly how much free money he has available for purchases.

Data which showed for the nation as a whole, by income or other socio-economic breakdowns, the natural rates of consumption of various classes of consumer goods (would be most useful).

At the present time, the Survey of Consumer Finances is limited to a relatively narrow range of products. Possibly, in the future you might consider enlarging on the number of products studied and including figures on nondurable expenditures for food and clothing.

My only regret concerning (the historical information) is the neglected opportunities for more comprehensive information. I would like to see consumer expenditures and consumer savings by income size distribution, with specific detail as to type of expenditure and saving.

The chief gaps, for our purposes, are as follows: Expenditures by type (both durable and nondurable) by income classes, income and other data for higher income classes (above \$10,000).

(4) *More information on savings.* My chief criticism of the consumer survey statistics is that "savings accounts" include saving in savings banks, commercial banks, and savings and loan associations. It would be a major contribution to savings and banking statistics if accounts in these three major institutions were distinguished.

The chief gaps in our statistical information are in the area of the consumer credit statistics.

Certain important series such as consumer savings should be collected on a yearly basis. Their omission for a period means that the stability of certain relationships cannot be studied at different levels of economic activity. As aggregate savings change, we should be able to follow changes in the distribution by income groups and by other relevant classifications.

Through 1950, these surveys present some material on savings. Since then, savings has been dropped, presumably because blowups of the sample data yielded results quite different from the available aggregate estimates. I believe this was a mistake. Though the savings data are clearly imperfect and subject to considerable biases, my own work convinces me that the pattern of savings by income classes, and broad differences among occupational and similar groups, are quite reliable. Data for individual consumer units are not elsewhere available on a regular basis.

Information on saving from the Surveys of Consumer Finances dropped after the 1950 Survey should be restored, as well as data on net worth.

One of the areas in which we would like to see more information . . . is data on saving by consumers not only in terms of repayment of debt but in terms of the accumulation of saving, the form it takes, current volume and potential volume and related factors.

(5) *More information on consumer durables and housing.* The residential market . . . is of sufficient importance to warrant giving it some

special attention. I should like to see answers to such questions as these:

1. How large a sample would be required to assure the same margin of accuracy for housing data as for the commoner forms of household expenditures?
2. Would it be more economical to conduct a housing market inquiry separately from the regular survey . . . ?
3. Would it be more practicable . . . to have a double-barrelled survey, in which purchases of housing and other durables were given more expanded treatment?

The present Federal Reserve Board studies indicate the proportion of spending units buying one or more of several types of durable goods. To be most useful to us, we would like these data broken down by specific product classifications, and the range of products covered considerably widened.

Additional information is needed concerning the characteristics of the stock of consumer durable goods. For example, who owns the over-age refrigerators? At what age are appliances scrapped? Does movement up or down the income scale affect replacement of consumer durables? . . . The whole major area of the relationship between purchases of homes and the related purchases of appliances, furniture, the second automobile, etc., can best be investigated with consumer surveys."

For specific appliances such as washers, refrigerators, and ranges . . . there is evidence that an increasing number of new homes are being equipped . . . by the contractor. How many prospective purchasers of such appliances obtain these appliances with their purchases of new homes?

(6) *Reconciliation with other statistics.* We feel that some of the data would be more useful if tabulated on a household basis. Ownership of and demand for appliances is probably more closely related to the number of households than to spending units. . . . Comparisons could then be made with Census data by households.

It would be considerably easier to compare the Survey of Consumer Finances data with other information . . . if veteran families were defined as families with a World War II veteran head. Such a definition would also coincide more closely with that used by the Bureau of the Census.

The coordination of work done by the various research groups such as the Bureau of Labor Statistics, the University of Michigan Survey Research Center and the Bureau of the Census would increase the usefulness of consumer data. Where possible and consistent with survey objectives, demographic categories and dollar amount brackets should be the same (or divisions of the same categories) in all surveys.

The usefulness of these surveys would be enhanced if they could more easily be tied into the national income accounts. In particular, information on income in kind and other items accounting for the difference between "money income" and "personal income" would be useful.

(7) *Timing of survey reports.* One unfortunate aspect of the Surveys of Consumer Finances is their timing, which comes after the period when we give our principal consideration to business conditions during the coming year. The latest date upon which such a survey could be utilized in our formal planning and budget preparation would be early in October.

Ideally, for our purposes, the data should be released quicker and written in simpler language, with fewer footnotes.

It would be extremely helpful if the tables containing the statistical information could be made available promptly, instead of months later, when the detailed verbal analysis is presented in the *Bulletin*.

Very useful . . . would be more frequent and more current reporting; the reasons are obvious.

(8) *Improved continuity and presentation of data.* My main complaint with the F.R.B. surveys is that they switch their bases, so that it is difficult, if not impossible, to apply them regionally, or even to the general economy. . . . Of recent years I find the F.R.B. surveys are tending towards a variety of bases, some on the actual base of units surveyed, some on a percentage basis, and to reduce them to the national, or regional, picture, is often a man-sized job and then not too exact.

One of the serious shortcomings which we find is the projectability of the income figures. We like to know, for example, how many (not percentage) of the Clerical and Sales spending units earn various amounts of income. . . . The present rounded figures published by the Board do not permit us the luxury of such projections for various occupation groups.

I feel that the usefulness of (survey data) is greatly handicapped by the failure to report various series regularly. For example during this past week in following through the series on value of dwellings I failed to locate data for some years.

In presenting the distributions the number of cases should be published and not just the percentage of reports in various cells. Where reports are few numbers permit more accurate interpretation of distributions than do percentages as commonly reported.

(9) *More analysis and experimentation.* The treatment of the data by the Michigan Survey Research Center is unsatisfactory. Their own scientific analysis of the data is predominantly an analysis of a single body

of data, carried out as if no other comparable or relevant data exist, rather than an analysis of *problems* using all relevant data.

There is constant need for scrutinizing the data to determine what additional series they would provide that might be useful. Such additions are needed to adapt the survey to changing conditions. They should also reflect the increased understanding of causal relations revealed by research.

(10) *Greater availability of data.* Despite the wealth of data now available, some increase in publication of data collected would greatly enhance the field. For example a "source book" containing tabulations and cross-tabulations from the Surveys of Consumer Finances might greatly facilitate wider use of the data collected. Its production periodically—every two or three years—should be invaluable.

It seems to me that the project of the very highest priority in this area is to make available to scientific workers in general as much of the raw material obtained in these surveys as possible—and to make it available in as near its original raw form as possible. Information about the methods of collection and warnings about interpretation of the data are justified; statistical isolationism, protectionism, and censorship are inexcusable.

b) Criticisms relating to attitudinal data—buying intentions, assessment of current economic situation, and expectations regarding the future:

(1) *Doubts regarding predictive value of attitudinal data.* Aside from sampling error, special caution is required in interpreting any survey of consumer *intentions*. . . because (1) it is far easier for an individual to change his mind (especially with reference to the purchase of a durable good) than for a corporation or the Government to alter its plans, and (2) the time lag required for such a change is relatively substantial for the institution and negligible for the individual.

Consumer expectations are based upon forecasts regarding their individual employment and incomes. Such forecasts tend to be extrapolations of their current situations. . . . A downturn in government spending and/or private capital expenditures which results in a decline in employment during the year can make "bad planners" out of many "good planners" by drastically changing their financial situation.

The series reflecting intentions to buy new cars has been of very limited use to us. . . . In our opinion, auto industry analysts generally have over the years been as successful in forecasting direction (of new car sales) and far more successful in forecasting magnitude than the Surveys.

We do not feel that we have sufficient historical experience to use the expectations data with any great confidence.

There is some indication that the predictive values of buying intentions are more reliable for some goods than for others.

In the survey interview, the consumer is required to assume the role of a business forecaster since to a great degree his spending plans are contingent upon the accuracy of his business forecast. We all know that forecasts, even by "professionals", tend to be colored by conditions prevailing at the time of the forecast, and I . . . would not assume that forecasts by relatively uninformed persons would be free from this drawback.

It seems to me that two questions have to be answered before the value of expectations data can be established. They are: First, to what extent are consumer expectations simply manifestations of underlying economic factors that are themselves easily obtainable, e.g., recent income trends of the family, and to what extent do expectations represent other factors, whether psychological or something else? Second, how closely is this residual component of expectations related to consumer behavior?

...

In order to employ any relationships that may exist between expectations and behavior for forecasting purposes, it must be possible to predict the state of expectations in that future period for which a forecast is desired, or to be able to assume that expectations will not change from the time they are ascertained through that future period.

Data on intentions or plans to purchase goods would seem to offer considerable promise in the prediction of consumer behavior, when properly obtained. The trouble is, however, that . . . we still have to devise procedures for determining *a priori* which plans will be fulfilled and which plans will not, and the time elements involved.

My belief is that progress toward the objective of better prediction will come through better objective data on consumer resources and their outlays and prices paid. . . . This should not be sacrificed to permit more schedule or publication space for data on stated expectations and intentions, at least until those already available have demonstrated greater merits for prediction than objective data.

(2) *Improvements in data gathered.* Even if it were possible to predict the season's sales results on the basis of information concerning buying intentions, we should still be left in the dark as to the month-by-month or even quarter-by-quarter trend within the season.

I'm wondering if it is possible to measure the intensity and realizability of consumer intentions. . . . Does the investigator examine whether he really means to buy and whether his income would permit him to do so?

Is it possible to get from each respondent a lump-sum estimate of over-

all big-dollar items in relation to income? . . . That would make it possible to determine the realism of the respondents' intentions.

Is it possible to get more information about the intensity of an expectation that would add to the value of specific, vis a vis general, expectations?

It would seem to me that the critical fact about a decision (to purchase major durable goods) is that it has a considerable *period of gestation*—nine months may not be far off. . . . In view of the developmental character of decision to buy, what are we really measuring when we ask about expectations to purchase particular articles without being able to question fairly astutely concerning the intensity of the expectation? It seems to me that one reasonable answer would be that we are simply measuring a general sort of optimism about the future—an optimism that is in part a function of several characteristics of the family, and in part a function of their current view of the economic scene that is immediately ahead of them.

(3) *More analysis and research.* We would like to see some re-interviewing of households to:

1. See if they did what they planned to do.
2. Explain their major decisions over some recent period of time.

We feel that it would be fruitful to conduct further research by interviewing people covered in previous surveys to determine if their expectations were realized.

It would appear to us that some analysis should be made of the rate of change possible in consumer expectations. From this analysis it would be possible to appraise whether or not consumer expectation surveys are made frequently enough.

Some kind of program to discover why various classes of consumers change their minds about buying would also be useful, as would additional material on intentions to purchase specific products.

The Federal Reserve Board and any other government agencies interested would be well advised to spend a substantial portion of any sums set aside for research and experimentation in this area (of consumer expectations and plans) rather than on continuing programs. Such research should be directed toward two broad objectives:

1. Determining the value of plans, expectations and related data in explaining consumer behavior.
2. Ascertaining the most reliable techniques of obtaining these and other data from consumers by survey techniques. . . . Panel methods in particular seem to me highly promising means of ascertaining basic determinants of consumer behavior.

Methodological research should be promoted to improve the reliability, validity and predictive value of consumer surveys. In the study of intentions, exploratory work (not necessarily on a nationwide scale) might be undertaken in the relation of intentions to past behavior. The relation of expectations and intentions to each other could be pursued more intensively.

Judgments must continually be made concerning the validity of expectations by matching them with actuality, so that the expectations data do retain some of their vitality.

Since the main virtue of consumer surveys is the wealth of detail of a cross-sectional nature, presumably additional insights will be gained by simultaneously taking into account many facets of a given market. These cross-sectional aspects of the expectations part of the annual Surveys need to be considerably broadened and deepened.

One area which has not been sufficiently explored in the Surveys is the significance of the concentration of liquid assets and net worth. (There is a) high concentration of liquid assets at all income levels. . . . Any investigation of the role of liquid assets in spending and saving decisions would have to concentrate on the spending behavior of these (comparatively few) individuals (who can and want to hold relatively substantial amounts of liquid assets), something which has not been done hitherto. Similarly studies of consumer behavior classified by net worth should also be undertaken.

In the collection I would like to see further sets of reinterview data. Such collection should of course be accompanied by thorough analysis to determine their special contribution. It may be that they should be a regular part of each annual survey.

(4) *Timing of Survey reports.* More frequent interviews of consumers, perhaps 3 or 4 times a year, would be of considerable value.

The Surveys are useful as a check upon other forecasts, but their usefulness is limited by the delay in publishing results. Preliminary results are available in March and final tabulations in June or July. We must start to project for planning purposes by the previous November.

Their usefulness (consumer intention surveys) will depend, largely, upon the promptness of their compilation.

Currently published data often is old before it is released, although the Federal Reserve has made great improvement in this respect in recent years. Much needs to be done in this field, however, to keep the "expectations" part of the titles meaningful.

If we could choose one improvement in the present arrangement, we

would like to have the surveys made more often; once a quarter would be about right.

There is need for more frequent surveys of expectations. Over a business cycle, even a so-called inventory cycle, such expectations may change quickly. . . . Even surveys twice a year would be of great assistance in interpreting current trends in consumer behavior, but the goal should be still greater frequency, quarterly, or bimonthly.

(5) *Continuity and presentation of data.* Important changes in the series (on intentions to purchase new cars) have been made through the years which make it difficult to evaluate on a consistent basis.

I think it essential that all buying plans be applied to the general economy in round numbers, involving both units and dollar valuations.

(6) *More detailed tabulations of data.* We would also like to know the total picture of consumer expectations in farming communities, industrial areas faced with greater than average unemployment and many other meaningful classifications.

In the preliminary results of the Survey of Consumer Finances, it would be helpful if the data on consumer financial positions were tied to the data on consumer attitudes and plans . . . which income groups planned to buy automobiles, homes, or furniture. . . .

Plans to purchase are of the greatest interest. . . . The additional materials are interesting, but are not sufficiently cross-classified to suggest meaningful hypotheses. For example, were the 38 per cent of the spending units who stated that they were better off in early 1955 than a year ago the same 38 per cent making more than a year ago?

(7) *Larger sample.* The number of people which are included in the Federal Reserve sample who plan to buy a new house, an automobile, or other major appliances in a particular year is so small that we would hesitate to change our forecasts built up by some other information should the survey differ significantly from our own estimates.

(8) *Reconciliation with other statistics.* From our point of view it would be very desirable to set up the gross national product accounts and the consumer expectations surveys so that a person can go from consumer expectations to gross national product and be sure that he is considering comparable sectors of the economy.

In the savings area in particular, it would be desirable to be able to forecast savings based on expectations as well as to forecast consumer expenditures on automobiles and appliances. . . .

For a long range program it is our opinion that statistics of consumer expectations should be tied in if at all possible with Census and other aggregative data.

CONCLUSIONS

The responses to the Committee's questionnaire indicate that consumer survey data on the current and historical financial position of families are relied upon in a wide variety of uses. The data on consumer buying intentions and expectations are used for predictive purposes, usually along with other methods, but there is widespread doubt regarding the stability and independence of the data and a feeling that more analysis and research into attitudinal data are needed.

Many of the criticisms of the Survey of Consumer Finances reflect failure of survey data to meet rather detailed needs of particular users, and suggestions for improvement are made without consideration of cost. Nevertheless, taken together the criticisms do point to some areas in which improvements in the Survey would benefit many users.

APPENDIX C
**LIST OF PERSONS INTERVIEWED BY THE
COMMITTEE ON CONSUMER EXPECTATIONS**

December 27 and 30, 1954, Survey Research Center, University of Michigan:

Rensis Likert
George Katona
John B. Lansing
James N. Morgan
Charles F. Cannell
Leslie Kish
Samuel P. Hayes, Jr.
Irving Morrisett

January 19 and 20, 1955, Federal Reserve Board Headquarters, Washington:

Ralph A. Young	}	Staff of the Federal Reserve Board
Homer Jones		
Tynan Smith		
John Frechtling		
Kenneth Williams		

Dorothy Brady, Bureau of Labor Statistics

Miss Marguerite C. Burke	}	Department of Agriculture
Earl E. Houseman		
Miss Trienah Meyers		
Miss Janet H. Murray		
Mrs. Gertrude Weiss		

Peter Henle	}	American Federation of Labor
Bert Seidman		

Stanley Lebergott, Bureau of the Budget

Mrs. Selma Goldsmith, Office of Business Economics

David Lusher, Council of Economic Advisers

Morris H. Hansen	}	Bureau of the Census
Herman P. Miller		
Conrad Taeuber		

D. Harry Angney, Coordinator for the Board of Governors.

March 6, 1955, Littauer Center, Harvard University:

Mrs. Eleanor Maccoby, Harvard University

March 7, 1955, Federal Reserve Bank of Boston:

Lester Frankel, Alfred Politz Research, Inc.

Ray Robinson, Crowell-Collier Publishing Company

Samuel Barton, Market Research Corporation of America

July 8, 1955, Littauer Center, Harvard University:

John Kofron, National Analysts, Inc.

James Bayton, National Analysts, Inc.

The CHAIRMAN. Mr. Tobin, you may proceed.

**STATEMENT OF JAMES TOBIN, YALE UNIVERSITY, ON BEHALF OF
ARTHUR SMITHIES, CHAIRMAN, CONSULTANT COMMITTEE ON
CONSUMER SURVEY STATISTICS**

Mr. TOBIN. In the absence of Arthur Smithies, the Chairman, I have been asked to summarize the report of the Consultant Committee on Consumer Survey Statistics.

The task of this committee was to review available statistics on consumers' expectations, attitudes, and intentions.

By consumers' expectations, I mean their answers to questions regarding their own economic future, or the future of the national economy. Examples of such questions are:

Do you expect to be making more money next year?

Do you expect predominantly good times over the next 5 years for the Nation as a whole?

Consumers' attitudes refer to evaluations of the present and recent past:

Do you think that the present is a good time to buy automobiles and other durable goods?

Are you folks better off now than a year ago?

By consumers' intentions, I mean their plans with respect to purchases and other economic actions:

Do you intend to buy a house or a car or a refrigerator during the coming 12 months?

Consumers' expectations, attitudes, and intentions are a relatively new contribution to the body of economic statistics. Data of a more retrospective and objective nature have long been collected from consumers. Household budget surveys, for example, those by the Bureau of Labor Statistics and the Bureau of Home Economics of the Department of Agriculture, have collected data on a wide variety of household expenditures and savings. These studies have occurred irregularly for a variety of special purposes and have not built up a continuous series of comparable data. While our committee is not primarily concerned with data of this kind, we have had to consider them in conjunction with the subjective and prospective data that are the main concern. This is because consumers' expectations, attitudes, and intentions need to be interpreted in conjunction with financial and demographic information on the same household. The same surveys which have pioneered in the collection of expectations, attitudes, and intentions have also provided the first regular consistent series on household financial variables. To some extent, therefore, there is inevitable overlap between our report and that of the task group on saving statistics.

The committee's task has required it to concentrate heavily on the Surveys of Consumer Finances conducted annually for the Board of Governors of the Federal Reserve System by the Survey Research Center of the University of Michigan, and on other surveys conducted by the Survey Research Center. Since we have had to focus so sharply on the Survey Research Center of the University of Michigan, I would like to say at the outset that the committee has found that the center possesses and deserves a fine reputation in the field of survey

work. The work of the center is characterized throughout by high technical and scientific standards, by integrity, efficiency, and imagination. For example, the center has led the way in probability sampling: that is, in selecting its respondent households in such a way as to insure that the households sampled are really representative of the United States population. Although the center's sampling and field work are of the highest quality, the center is more than a technical agency for survey work. On its staff are some of the leading social scientists in the country, and the center is outstanding in the analysis of data as well as in their collection.

The Survey Research Center and the Federal Reserve deserve great credit for their path-breaking work in collecting data on consumers' expectations, attitudes, and intentions and in establishing a program for regular collection of strategic information from consumers. Pioneering work in this field was done by Rensis Likert, George Katona, and Angus Campbell at the Division of Program Surveys of the Department of Agriculture, during the Second World War. In 1946 the group moved to the University of Michigan and established there the Survey Research Center. The Board of Governors of the Federal Reserve System showed vision and courage in appreciating the potential contributions of the survey approach to economic statistics. Beginning in 1946, the Board of Governors has sponsored every year a Survey of Consumer Finances, obtaining both data on financial and economic magnitudes and data on expectations, attitudes, and intentions. Each year the results of the annual survey are published in a series of articles in the Federal Reserve Bulletin.

In addition to the annual Surveys of Consumer Finances, the Survey Research Center has conducted a number of other economic surveys, called interim surveys, because they occur between the annual Surveys of Consumer Finances. Compared with the annual surveys, the interim surveys have been concerned more with expectations, attitudes, and intentions, and less with debts, assets, savings, and expenditures. The samples are also generally smaller, from 1,000 to 2,000 instead of 3,000 as in the annual surveys. Interim surveys have not occurred at regular intervals. In some years there have been none, while in other years there have been as many as three. Originally the interim surveys were sponsored, like the annual Survey of Consumer Finances, by the Federal Reserve: More recently they have been financed privately and the results have been published not in the Federal Reserve Bulletin, but in private publications.

A combination of private and public interest and support for this kind of a statistical program seems to this committee to be all to the good. Unfortunately, however, the divided nature of the support of the economic surveys of the Survey Research Center has meant that the program has not been well integrated. In some cases the questions used in the Survey of Consumer Finances are not directly comparable with those used in the interim surveys. Moreover, in the reports of the Survey of Consumer Finances published in the Federal Reserve Bulletin, no reference is now made to the interim surveys. Use of the results of previous interim surveys would add considerably to the value of the information contained in the Survey of Consumer Finances. Similarly, the reports of interim surveys do not refer to the annual Surveys of Consumer Finances. The interim surveys

would be more informative if their results were interpreted against the background of the preceding annual survey.

The task group strongly believes in the importance of both an annual Survey of Consumer Finances and a series of smaller surveys concentrating more heavily on consumer expectations, attitudes, and intentions. We suggest that three interim surveys be regularly scheduled each year. These two series of surveys should be closely integrated at every stage, in design, in analysis, and in publication of results. We are confident that this can be done whatever may be the sources of financial support. To make sure that the two kinds of surveys are closely integrated, the committee recommends that the households interviewed in the interim survey be wholly, or in large part, households that were interviewed in the previous annual Survey of Consumer Finances.

The main reason for interest in surveys of consumer expectations, attitudes, and intentions is the hope that these data will have predictive value, that they will enable better forecasts to be made regarding economic trends in general, and regarding the results of various economic policies and programs. We believe that there is considerable foundation for this hope. On certain occasions in their brief history, surveys of this type have correctly indicated trends that were hard to foresee from other economic indicators. At the end of the war, for example, some economists feared deflation and unemployment due to the cessation of war expenditures and the demobilization of the Armed Forces. Other observers feared that the accumulation of liquid savings during the war would result in an inflationary explosion. Consumer attitudes toward their wartime savings and consumers' buying intentions, as elicited in surveys, showed correctly that the outlook was inflationary but that there was no need to expect a sudden rush to cash in savings bonds accumulated during the war.

A second example concerns the beginning of 1949, a time when there were generally fears of an intensified economic recession. The survey of Consumer Finances gave optimistic indications that the consumer sector would be a strong point in the economy. These indications proved to be correct. Similarly, in early 1951, when there was every reason to believe that the inflationary buying boom set off by the Korean war in the second half of 1950 would continue, the Survey of Consumers Finances indicated the contrary.

These examples of success in prediction do not mean that the evidence for the whole period is clear cut. On other occasions, the indications of surveys, at least their surface indications, have not been justified by subsequent events.

The committee concluded that consumer intentions are useful data. But we are not so sure how useful expectations and attitudes are for prediction, although they are in themselves very interesting data. It is not to be expected that there is any simple way to go from a survey report to an accurate forecast. Generally speaking, our committee believes that the results of these surveys are information anyone in the business of economic forecasting would want to use; but he would want to use this information in combination with many other indicators. Our own survey of forecasters indicates that, with some exceptions, they do indeed find survey information useful in conjunction with other data.

A great deal more research and experience are needed to determine which are the best questions to ask, and just how the answers can best be used. In the past 10 years or so, great progress has been made in finding out how to elicit an amazing range of information from a representative sample of consumers. Progress in collection of financial and psychological data has not been matched by progress in analysis of the surveys. Unfortunately the survey research center has not had adequate time and financial support for analysis of the data it has collected. The committee strongly recommends the encouragement of more analyses of survey results, at the center where the data are collected, at the Federal Reserve Board of Governors and other Government agencies, and by independent scholars at universities and research centers.

The committee favors a more thorough program of publication of survey results. The Federal Reserve Bulletin articles and the other periodical articles where survey results are reported do not, and cannot, give enough information for serious users of the data. A sourcebook is needed with basic information on the design of the surveys, the methods and concepts used, the errors and possible biases to which the data may be subject. The sourcebook should contain detailed tables of the results of the entire series of surveys, and it should indicate what further detail is available on request. Annual supplements to this sourcebook would keep it up to date, with tables reporting the most recent surveys. Such a publication would do much to facilitate further analytical research. But full exploitation of the potentialities, both of these data and of modern methods of data handling and computation, will frequently require access to untabulated raw data.

Comparison of overall survey indications with national economic trends is one valuable way of assessing the usefulness of survey information. But this method is limited by the shortness of our experiences with surveys of this type. More can be done by research on the individual households interviewed in the survey. What are the characteristics of households that buy? What makes a household save? What are the characteristics of households that tend to fulfill their expressed intentions to purchase? What are the attributes of households that tend not to fulfill their purchase plans?

Much useful research on these questions has been done by the survey research center. Much more remains to be done. This kind of analysis is virtually impossible unless identical households are interviewed more than once. One of the major recommendations of our committee is for greater use of reinterviews, both in the interim survey program and in the series of surveys of consumer finances. The survey research center has experimented with reinterviews in the past, and is now engaged in further experiments along this line. We hope that the results of the center's experiments will help make it feasible to implement our recommendations for much greater use of the reinterview technique.

Expectations, attitudes, and intentions are most useful when they are combined with demographic, economic, and financial data on the same consumers. We are, therefore, interested in improving the accuracy of survey financial and economic data, both for individual respondents, and for national totals. To this end, our committee has various recommendations. One is the reduction of memory errors by

the use of reinterviews, which we have already advocated for other purposes.

Another is to enlarge the sample. After all, it is expecting a great deal, even in this day of modern scientific sampling, to expect that a national total for some financial magnitude, for example, savings accounts, can be estimated accurately from a sample as small as 3,000.

For the sake of accuracy, as well as for other reasons, our committee also recommends a more highly stratified sample. A relatively small proportion of households contribute heavily to the national totals of such magnitudes as savings or holdings of liquid assets. These households, in the upper income and wealth brackets, are, moreover, widely different among themselves in their financial behavior. In a small sample, an error in representing these segments of the population can be much more serious than an error in representing the more numerous segments of the population who are all small savers or small holders of liquid assets. Those segments of the population for whom errors can result in serious distortion of national total should be heavily sampled, even though they may be a small percentage of the population. The survey of consumer finances already oversamples, to some extent, and we believe that further oversampling should be tried.

Our committee also recommends further methodological research and experimentation in the collection of financial and other information on households. Great progress has been made in the collection of financial and other data from households, but we believe that further improvement is possible, if new methods of collecting these data are tried out. Unfortunately, time and money are just as short for methodological experimentation in collection of data as for analysis of data already collected. The committee believes that it would be extremely useful in the long run to devote resources to methodological experimentation and research as well as to current collection of data.

To summarize, our committee believes that the experience of the last 10 years clearly justifies continuing the collection of statistics on consumer expectations, attitudes, and intentions. Indeed, we think that more funds, both Federal and private, could usefully be devoted to this purpose. But we emphasize that this is a relatively new field. Experimentation is still needed, and a great deal of analytical research is required to determine what data are most important to collect and how they may best be used in forecasting. Some of our recommendations concern the stimulation of greater analysis of survey data.

We also believe that the research in the field can be used to guide the further collection of data, just as a clear understanding of the process of data collection can lead to more intelligent use of the data. One means of accomplishing a continuing interaction between research results and data collection is a periodic conference on the scope and methods of the survey of consumer finances and related surveys.

The persons who conduct the survey could then exchange information and opinion with other research workers in the field and with users of survey data in Government, business, and labor organizations.

The CHAIRMAN. Thank you very much, Mr. Tobin.

I will now proceed to ask the other members of the panel and the other participants if they have something to add, and I will start with Mr. Seidman.

Mr. SEIDMAN. Thank you, Mr. Chairman.

Let me say at the outset that Mr. Tobin has stated very well the major conclusions which the committee arrived at after about 6 months of very intensive investigation of the field of statistics which was assigned to us.

I was very happy, as a representative of a labor organization, to have an opportunity to participate in this panel.

As I indicated when I appeared before your subcommittee last year, we in the trade-union organizations have a very considerable interest in the whole field of statistics. We rely on them a great deal in arriving at economic judgments and in attempting to make our own economic forecasts.

One of the fields in which we have had the greatest interest is this whole field of the development of survey techniques for obtaining formation on consumers' expectations, consumers' attitudes, and consumers' intentions. We, perhaps even more than some others in this field, regard the actions of consumers which eventuate in consumer expenditures as playing a very strategic role in the entire economy.

I was particularly interested the other day to see the study which has just been made in the Department of Commerce of the role which consumers' expenditures have been playing, the changes in consumers' expenditures in the economy, particularly during the past couple of years, and the effect of the maintenance of consumer expenditures at a high level in staving off a deeper economic recession and helping economic recovery.

With regard to these particular surveys, I would agree with the value which the acting chairman of our panel has placed on the interim surveys. I think that they have a particular value, because occurring in between the periods of the annual surveys, they can help to pinpoint turning points in economic trends. In that regard, I think it is very important that they be coordinated with the annual survey in terms of the way the surveys are conducted, the questions that are asked, the people who are interviewed, and the method of publication.

I say that they should be coordinated as closely as possible with the annual surveys so as to produce the most valuable results.

I also feel that it is important for users of these data to have made available to them, insofar as it is feasible to do so, and accurate to do so, publication of more detailed data than have been presented thus far in the annual surveys, but more especially than have been presented in the interim surveys. The data presented in the interim surveys, perhaps because of the method of publication in a private business periodical, have been much more sketchy, if anything, than the data published in the annual surveys.

I would also stress the importance of the reinterview technique, so that we can assess whether the judgments that consumers make as to their own expectations and intentions are actually realized in their future expenditures.

Professor Tobin referred to the need for oversampling of special groups. He mentioned particularly the high-income group as being a strategic group in the population in terms of the effect that their expenditures have on the economy.

Of course, the oversampling by the statistical techniques that are used merely makes it possible to get more detailed data on the inten-

tions, or actual expenditures of the particular group, and it does not in any way affect the accuracy of the total picture, because this over-weighting is taken into account in the way in which the final figures are actually computed and presented.

I would also suggest the possibility of using this oversampling technique to obtain information with regard to consumer expectations, and also with regard to the expenditure patterns and changes in expenditure patterns of certain other strategic groups about whom we know, perhaps, too little.

One such group would be those people who become unemployed. It seems to me it is very important to get as much information as we can about what happens to expenditure patterns of such people.

The unemployed have very limited incomes, but does it necessarily follow that a family which is depending, let us say, on unemployment compensation and has a certain total of income from the unemployment compensation, has the same pattern of expenditures as a very low-wage family, which may have approximately the same income?

We don't know, but I think this is important information to obtain.

It would also be interesting to get that kind of information on families who move, or on families who are just beginning to be families—that is the newly married couples, or the couples in the first 4 or 5 years of marriage. What are their expenditure patterns as compared with others in the population?

Turning to another recommendation of the committee, I would heartily endorse the idea that there should be periodic conferences of research workers, together with users of the data in business, labor, and other organizations. I think that if this kind of pattern, perhaps annual conferences, can be developed, it will make available to those who are compiling the data, the needs and desires of those who are using the data, and they can be guided accordingly in the way they set up their surveys.

I think that this approach which has been developed by your committee of setting up panels of people outside of the agencies which are actually developing these various areas of statistics, and here I am not simply referring to our own area which this committee has been concerned with but also the various types of statistics which have been studied, is a very useful one. I think this has been a very valuable experiment.

I think that it is worthwhile every now and then for a group which is not living day to day, so to speak, with the job of developing the particular types of data, to appraise from the viewpoint of users of the data, primarily—although they are nevertheless people who are very familiar with the data—to appraise the work that has been done, to get outside of the detailed aspect of the work that is carried on by the group that is developing the data, and to try to take an overall view of the entire field.

In that regard, I for one would hope that this experiment which has now been carried out, I think very successfully in five areas, could be extended to other areas of important statistics. There might be developed in these other areas the same type of overall view from the standpoint of people who are using the data.

Finally, I would like to assure your committee of the continued cooperation of the labor organizations in the development of better statistics, more usable statistics, and more accurate statistics.

We hope that we will be able to increase our work in this field, perhaps as a result of building up our research work in our merged federation which will be established in December. I can assure you that we will cooperate in every way, both with the Government agencies and with your committee, and with private groups as well, in contributing whatever we can to the development of better statistics for the use of all groups.

The CHAIRMAN. Thank you, Mr. Seidman.

Mr. Orcutt.

Mr. ORCUTT. I would like to say that I feel that Mr. Tobin's remarks very well summarize our report. There are a couple of points in our report that I would like to elaborate on. In particular in our report it was indicated that insufficient resources have been available for analysis of data, testing their reliability, and experimenting with alternative hypotheses concerning consumer behavior.

It was also indicated that accompanying this analysis there should be more use of pilot studies on small samples, experimental research to test specific hypotheses, and methodological research on the collection and processing of the data.

I want to make a brief statement which will indicate some directions in which I think specific steps could be taken.

One of the important reasons for the collection of data is the hope that their use will lead to improved prediction. This is equally true whether the major interest is one of simple forecasting, or whether it is one of predicting the effects of various possible courses of action.

Data play two distinct roles in the achievement of useful predictions. They provide a basis for testing relationships that various individuals may hope have predictive value and also the application of relationships found to have predictive value.

At the present time, predictive ability is extremely limited with respect to economic variables thought to be dependent on consumers' behavior. Furthermore, the difficulty is a basic one, in the sense that what is lacking is an adequate knowledge of predictive relationships. Thus what faces us is not simply a problem of how to collect more accurate data on a small, well specified set of variables. Since we lack an adequate knowledge of relations, we do not even know with any great exactitude what variables will finally need to be measured, let alone with what accuracy.

This being the situation, a great effort should be made to achieve a still more effective use of consumer survey methods and data in the discovery and testing of potentially useful hypotheses about consumer behavior. More effort is needed in the formulation of working hypotheses, in specifying and obtaining the data needed for testing these hypotheses, and in the testing of these hypotheses on the basis of all available data. It is simply not sufficient to think only of improvement in the collection of data, for adequate provision needs to be made for continuing formulation of potential useful hypotheses, and for extensive analysis of data in testing.

One way of implementing these ideas would be to set up a continuing survey program directed primarily to research needs. Such a program should—

1. Make systematic and continuing use of a committee of leading experts on consumer behavior in its relationship to governmental

policy. This panel of experts should play a central role in the formulation of working hypotheses and in specification of the information to be sought for purposes of testing them.

2. Insure that the forthcoming data are thoroughly analyzed by a highly competent and broad group of research workers. This group should include, but be more extensive than the committee which has responsibility for guiding the survey.

3. Collect data from households every 3 or 4 months. This would facilitate a close, continuing and rapid interaction between hypotheses formulation and hypotheses testing. It would permit effective testing of a wider variety of hypotheses. It would make it possible to follow up on promising leads before the situation had changed drastically. It would permit smaller samples and a more flexible mode of operation. It would facilitate more continuous use of a small but highly trained field staff, and finally would reduce the problems associated with memory errors.

4. Incorporate repeated interviews of identical households as a fundamental aspect of its sampling design. This would make it possible to study the way in which households adapt to changes in their income, value of assets, family composition, price changes, advertisement, job opportunities, and so forth. It would obviate the necessity of assuming that different households are fundamentally the same in their responses to such change in their environment as might be inferred from cross-sectional differences at a point in time. It would greatly improve the analysis of intentions, the period over which they extend, the firmness with which they are held, and the extent of fulfillment and reasons why they are not fulfilled.

5. Use flexible sampling procedures, modified as needed so as to facilitate testing of specific hypotheses and estimation of specific relations. In experiments aimed at investigating the influence of one variable on another, an attempt is made to hold other variables reasonably constant while varying the first variable over a wide range and observing the second variable. Some of the advantages of this sort of experimentation can be obtained by sampling within selected strata, instead of from the entire Nation. In this way, situations are studied in which certain variables are approximately constant. Within these strata, it is desirable to oversample those members of the strata which have experienced large variations of the variable whose influence is under study. This being the case, it is clear that ordinary probability sampling from the entire population of households within the United States is not always the most effective design for research purposes. Probability sampling from the whole population is indicated when trying to estimate average properties of the entire population of the United States households, but may not be the most effective sampling design when trying to determine whether certain variables play any significant role, and, if so, the approximate nature of the relationships involved.

6. Initially concentrate on investigating a few major types of actions at great depth. Memory error is likely to be less serious in connection with major action than with minor purchases or other individually unimportant actions. Investigation at great depth is likely to yield more results than if each individual survey tries to get information about a large range of small items.

7. Such a program should obtain respondents' views concerning their own behavior, incorporate these into new hypotheses and test these hypotheses on new groups of respondents.

8. Restrict, in general, the size of samples taken to a few hundred households. Larger samples might be needed to provide a basis for selection of the smaller samples, but the questionnaires needed for the larger samples could be very short. At a later stage, it might well be that final estimation and utilization of the relations found by this survey might require larger samples, but this phase of the work could be more adequately handled by some existing organization such as the Survey of Consumer Financing. In this sense, the new survey might serve as a pilot plant for the Survey of Consumer Financing.

The CHAIRMAN. Thank you, Mr. Orcutt.

Mr. Passer?

Mr. PASSER. Mr. Chairman, I should like to reiterate the viewpoint that has been expressed here by the members that have so far spoken. Mr. Tobin has summarized very well the recommendations and the conclusions of this task group. I should like to make a few comments about these consumer survey statistics from the viewpoint of an economic forecaster.

At the present time, there are economic forecasters not only in business organizations, but in labor organizations, and in some Government agencies. These individuals are responsible for preparing forecasts of future economic conditions which serve as one of the bases for policy decisions by the responsible executives in these various business, labor, and Government organizations. I should like to make a few comments about the usefulness of these statistics for this purpose, and, further, I should like to emphasize several of the recommendations of this task group that relate particularly to this use of these data.

The first point that I would like to make is that these consumer survey data are, in fact, the only source of information currently available about the attitudes and intentions of consumers. All economic forecasters realize the importance of consumer spending. Without these attitudinal data, the only thing an economic forecaster can do is to examine information on earnings, income, hours worked, number employed, and various indications of consumer spending, and try to gage from this the current position of consumers and their ability and willingness either to increase their spending or to decrease their spending.

When consumer survey data of attitudes, expectations, and intentions are available, however, the economic forecaster has another important measure of this probable willingness on the part of the consumers either to increase or decrease their spending. As most of us know, the recovery from the recession of 1954 was not brought about by increases in Government spending or in business spending, but in consumer spending. It was this change, therefore, in the willingness of consumers to spend that occurred at a crucial time (and which was in fact measured by these survey statistics) and that brought about the recovery from that particular recession.

Now, I shall go on to just two of the recommendations of this committee that I feel relate particularly to the use of these data in economic forecasting. The first is the recommended integration of the Survey of Consumer Finance with the interim surveys. What has

been envisioned is three interim surveys each year coordinated with the annual survey conducted in January and February.

This is an extremely important recommendation from the standpoint of economic forecasters, because they are now faced with the problem that the questions used, their methods of tabulation, and the extent to which the results are published, are different for the annual survey from the interim surveys, and currently there are only two interim surveys scheduled a year. If there were three scheduled, that would mean there was information becoming available on consumer attitudes, intentions, and expectations each quarter, which would put it on a comparable basis with many other types of statistics.

The other recommendation to which I should personally like to give emphasis is the need for greater research into the meaning and interpretation of these various questions that have been asked and of other questions that could be asked attempting to probe expectations, attitudes, and intentions of consumers.

A recent example of difficulties that are still present is the fact that in the June 1955 interim survey, there was a marked increase in the percentage of the respondents who expect price increases in the near future. On the basis of previous experience with these questions, and other work that has been done, it is not possible to know whether this means consumers are going to increase their spending markedly, or whether, in fact, a kind of buyers' strike is going to develop. Here is what seems to be an important piece of information, but the economic forecaster is confronted with quite a dilemma in trying to interpret how this will affect the short-run economic situation.

I should just like to emphasize that even though I am speaking from a standpoint of what you might call practical use of these figures, I feel that the several proposals here calling for additional research into the meaning of these various questions and of improving the ways of probing the attitudes of consumers would be extremely valuable to the people who are making practical use of these figures.

The CHAIRMAN. Thank you, Mr. Passer.

Mr. Stouffer?

Mr. STUFFER. My remarks will be very brief in view of the fact that if I extended them, they would be repetitious of what my associates have said. I would merely like to underline one point in Mr. Tobin's statement which I think it is very important for us to keep in mind, and that is that we are dealing here with a tool of research which is relatively new. It is not perfected, indeed it has been going through quite a technological revolution in the past 10 years.

One of the jobs of this panel was to take a critical look at how this tool or these tools were being used to ask questions in view of what we know about the technological improvements in survey methods. Is the work being done with efficiency and economy, taking advantage of the accumulated statistical knowledge that we have?

Our conclusion, as has been reported, was that we felt the job was being done extraordinarily well, given the budget which was available for it, and we felt particularly that there were a unique set of advantages resident in the fact that the survey research center was operating in a university environment. That is, it was possible to keep in contact with new ideas in economics, psychology, statistics, mathematics, and so on, and to relate the kind of research that was being done

in a technical way in the field with current thoughts in these other areas.

We felt that this was a great advantage. At the same time there was an advantage in the liaison as it operates between the staff in the Federal Reserve Board and the Survey Research Center.

However, we do believe that there is an opportunity to improve the operation. Some of the improvements will cost more money, some perhaps can be done by making some substitutions in what is now being done. I myself feel that perhaps the most important single technical improvement that is needed is the devoting of more time to reinterviews. Every speaker, I think, has commented on the need for these reinterviews.

I think the reason is simple, and that is that if we are going to check a person's intentions against what he finally did, we have got to see him twice. We can't just see him once.

Now, there is the possibility of using memory, of course, asking a person "What did you intend?" But people forget. It seems to be of critical importance that we greatly increase the extent of reinterviews.

We also need more technical study of the methods of doing these reinterviews in an efficient manner. The Survey Research Center has a rather large appropriation now from one of the foundations which is making it possible for them to study this problem more, but we are still in infancy, perhaps, in what can be accomplished in the way of using effective reinterview methods.

I have a great deal of confidence that with a relatively small increase in money, a large increase in value of this survey could be obtained. The thing that seems to me to be of utmost importance here is that we recognize that we are in a period of technological change with respect to the research tools themselves, and that as this work carries on it be carried on with a great deal of attention, particularly as Mr. Orcutt suggested, to making technological studies for improving methods.

We do feel that we have been able to make a few suggestions in the course of our report which ought to be helpful in this direction.

The CHAIRMAN. Thank you, Mr. Stouffer.

I imagine that the secretary of the task group such as this has an interesting and complicated job. I wonder if he has any comments.

Mr. Lippitt.

Mr. LIPPITT. Mr. Chairman, since I had particular responsibility for the questionnaire that our committee sent to users of the data, I think I might make my remarks against a background of the returns from those questionnaires.

We sent out 66 questionnaires, partly to persons that the committee members knew were competent and interested in the field, and partly to persons on the mailing list of the Board of Governors of the Federal Reserve Board to receive information with regard to these consumer-survey statistics.

We received responses from some 29 users. The selection of persons on our mailing list had assured, of course, that they would be familiar with and interested in the consumer-survey data. It brought a response from a wide range of users. There were industrial marketing research men; there were economists for financial institutions, publishing com-

panies, and independent research agencies, also private economic consultants, and university economists.

We had asked them whether they used survey data with regard to consumers, what were the sources of the data they used, how they assessed the adequacy of the data currently available, and what criticisms or suggestions for improvement they might have.

Two favorable comments occurred over and over again in their responses: One, the Federal Reserve Board and the Survey Research Center surveys of consumer intentions and expectations provide data that simply are not available elsewhere; two, the data are considered valuable and are widely used—they are used in making general economic forecasts, in making forecasts of markets for particular products, as a guide to sales and advertising efforts, in setting production schedules and planning expansions of productive capacity, in formulating investment policies, and as a basis for published articles and talks.

Nearly all of the respondents suggested extensions of the survey which they desired. They wanted more areas of spending and saving covered in the interviews, or wanted presently covered areas probed in more detail. There were frequent requests for more detailed classifications of the data to give information about regions of the country, or special groups of families, such as recently married couples, or farm families, or unincorporated businessmen.

Some of the respondents recognized that data involving finer classifications would require, to be valid, larger samples than currently used.

Accompanying these affirmations on the use and value of data on consumer expectations and intentions, and accompanying the requests, there was frequently an expression of uneasiness with regard to the data.

Economic forecasters indicated that they used the results qualitatively in their work, but did not know how to combine the data quantitatively with their conventional forecasting data and methods.

Economic research workers indicated that they were somewhat skeptical of the significance of data on consumer attitudes, buying plans and expectations. They could not tell whether such data made a significant contribution to explaining consumer behavior after they had taken account of the effects of income and family size and composition, residential location, recent move to a new house, and so forth.

The general impressions given in the answers to the questionnaires are these:

First, consumer data on consumer expectations and intentions provide information not available elsewhere; second, information is useful to persons in many lines of work; third, there is considerable uncertainty as to how such survey data can be used quantitatively in explanation or prediction of consumer behavior.

My personal reaction to these responses is that they are consistent with the thinking of this committee regarding surveys of consumer intentions and expectations. In particular, they seem to reinforce the committee's emphasis on the need for more analysis of the data, analysis to determine the unique contribution which this information can make to understanding and predicting consumer behavior, and analysis to improve the selection of data to be gathered, and the methods of getting it.

As a step in the direction of more adequate analysis, I would support the committee's recommendations for making the survey data more easily and widely accessible.

The CHAIRMAN. Thank you, Mr. Lippitt.

The representative of the Bureau of the Budget present today is Mr. Stanley Lebergott, economist for the Office of Statistical Standards.

Mr. Lebergott, I would not only like to have you make any comments you would care to make, but also to ask any questions of the panel that you may have.

Mr. LEBERGOTT. Thank you, Mr. Chairman.

Perhaps the most important thing I would like to do is echo Congressman Talle's remark that this is an exceptionally able subcommittee, and to add that although not all exceptionally able subcommittees produce exceptionally able reports, I think this one has done so.

The report should be unquestionably of value to us in our work of coordinating and improving Federal economic statistics. I am certain that it will be of direct value to the Reserve Board, and Mr. Jones will undoubtedly comment on that aspect of it.

So far as the coordination is concerned, I would like to note one initial point, and that is that the committee very properly felt that it had a large enough bear by the tail in the area of attitude and expectation data. It considered related surveys only insofar as they supplemented and made useful such data. We are talking here, primarily, of a single set of surveys—the Survey of Consumer Finances, and the interim surveys—and what might be improved in those surveys.

With respect to the improvement of the data, the committee, I think, essentially reached a single conclusion—the data were good. Then, like most statisticians and economists, they also added the data were not good enough.

I think this conclusion is not merely precise, but it is a little more applicable in this field than it is in some of the others under review by your subcommittee. This is not merely, if I may say so, the "normal" demand of an economist or statistician for more data. That demand is incessant and endless. As Mr. Passer indicated, if you are in the business of forecasting, or trying to understand the economy, you never have enough good data. I imagine the committee itself, on occasion, has reached that same inference.

There is something more, however, than that feeling on the work in the report. As indicated in Professor Tobin's summarization and the other remarks, it is a fact that this is essentially a new device, in this form. Although it builds on some very old knowledge, some very old understanding, it is essentially a new device.

As Professor Stouffer indicated, it is going through a technological revolution. It is essential, therefore, to realize that this horseless buggy is not merely a wonderful machine, but it needs improvements and it needs them in short order. We do have, I think, a windshield wiper as standard equipment on it. But the brakes are not too good yet. Therefore the committee's set of recommendations—essentially, for more research. The reinterview proposal is a kind of proposal for more research, and the various other specific proposals are.

The able physicians on the committee have, in addition to their joint diagnoses, today recommended various other pink pills which would be useful in improving the condition of the survey. Although there is some difference of emphasis and opinion here, I think it tends to reflect the fact that they are all emphasizing the going nature of the operation, and the fact that we are not doing enough in research. It is only when somebody actually gets down to do that, that you know more precisely what you wish to do in the way of research.

On the main conclusions reached, I can express personal and, I think, very warm official receptiveness to them. They are sound, and they are in many instances closely in line with some of the thinking of the Reserve Board personnel, some of our own thinking, and I am almost certain that some of them rest on information gathered from the Research Center people themselves.

While certain recommendations can be carried out within existing resources, the pressure of demands to keep producing this only set of available expectation information as the respondents to Mr. Lippitt's survey indicated is going to preclude, I believe, the diversion of many resources to research. That means that insofar as your committee is recommending to the Reserve Board that it look into these matters, and insofar as you are looking for action to improve these data, this action will have, at some point, budgetary implications.

If I might express just one minor point of difference with Professor Stouffer, this relatively novel instrument was actually begun within the Government under congressional sponsorship a good many years ago. It reflected, I should add, able personnel with university background and ideas who happened to develop them there. This suggests that we have the possibility of improved work, of increased research within the Government—as well as outside.

In this particular area, less so than the inventory statistics which you have scheduled for discussion later on, this work is much more localized within a single agency. I would therefore defer consideration of this very difficult budgetary problem to Mr. Jones, but if the subcommittee wishes to take it up further, I would be happy to do so.

The CHAIRMAN. Thank you, Mr. Lebergott.

The representative of the Federal Reserve Board present today is their Chief of the Consumer Credit and Finance Section of the Division of Research and Statistics, Mr. Homer Jones.

I would ask you for any comments or suggestions that you would care to make at this time.

Mr. JONES. Thank you.

The Federal Reserve Board has been very happy to be of any service in this connection, and make this committee's work available to you. We appreciate the opportunity. We think it has been a great stimulus and a great help to us, and we have been in great need of work in this field.

We were very fortunate in securing the services of a group of people who were authorities on various aspects of consumer economics and upon matters bearing upon consumer economics, and they have worked very hard and produced a report which is going to be very valuable to us.

In a way, the Federal Reserve was more interested in the work of this committee than in any other of the five committees that were

provided, because we had most especially devoted a great deal of effort over a long period of time to securing statistics in this field. It was most especially vital at this time that we get some evaluation of what we had accomplished. Where we were going, and make an evaluation for the future.

But for that very reason, because of our very special interest, we thought it was particularly important that we be in a rather "hands off" position, that we in no way push our views or our ideas upon the committee. We wanted to get a completely independent evaluation; so while we have stood ready to supply any information that we could, we have tried to make it possible for the committee to be utterly independent of us, and I believe that that has been accomplished. This has been most worthwhile, as we can see from a study of the report at the present time.

It occurred to me there was 1 major question, or it might break down into 2 or 3, which there might be some value in my simply stating, but possibly they would be in the form of a question to the committee; if they thought it was an answerable question.

We are impressed in reading the report, that a great many suggestions have been made, a great many recommendations have been made, and they are, I might say without exception, valuable and worthwhile suggestions. They would all be worth carrying out.

On the other hand, we are a little overwhelmed by the number of them, and by their implications of effort and time and money.

Possibly Mr. Orcutt's suggestions even emphasized this, this morning, because as I interpret them they involve in a sense going back to the beginning and taking a completely new look at what this is all about and what we are up to, and what are the best methods of approach, developing hypotheses of economic theory, and then seeing whether we can get those facts and then going out and getting the facts.

Well, I don't personally disagree with this at all. I am quite sympathetic to that view, but, nevertheless, to come to my question if we can't do everything at once—in fact, if possibly we can do only a very little of it at one time, what do we do first?

Possibly one might put it this way. If there are these great methodological problems, and I think there are; if there are great problems of what hypotheses on which operations should be carried out—suppose it were a choice of going ahead with this possibly rather routine operation which we have had over the past 10 years—if there were a choice between continuing that, with minor changes, to provide currently useful information as we have in the past, and stopping that and starting over along the lines Mr. Orcutt suggested in methodological research—and that has been suggested on almost every page of this report—which is the more important? Without dropping the present survey, what resources are needed for research analysis and development of hypotheses, as compared with the resources needed for a continuing survey?

This is my most general question, and if that is too general, possibly I could be more specific.

The CHAIRMAN. Would the members of the panel like to respond to that question which poses the dilemma?

Mr. TOBIN. I could start by saying that our recommendations are divided into two groups: First, improvements that require no appreci-

able increase in the present budget, and then we have, after that, improvements that require appreciably larger additional expenditures. This is a part of the answer to Mr. Jones' question: We do have labeled, first of all, things we think could be done even if no more resources or very little more resources were available for this operation.

We didn't feel that we had the information, or the authority, or any basis to judge for the Federal Reserve, or for any other branch of the Federal Government, how much money it could afford for this purpose as opposed to other purposes, other statistical programs, or other programs that the Federal Reserve and other agencies might have that compete with this. We are just dealing with one phase, and somebody else who has the overview of all the possible claims for money for statistical purposes will have to decide which of these various lines of improving statistics have priority.

To contribute to this decision, we did think that we could say quite emphatically that the productivity of additional funds devoted in this line would be high, that you could spend funds here and get some good results, that you haven't really begun to exploit the potentialities of this method of collecting data and providing data of use for economic forecasters and others.

After all, this operation, so far as the survey of consumer finances is concerned, is in the neighborhood of \$150,000 a year. That perhaps is not a very large amount for the Federal Government to be devoting to the collection of data which has as strategic a purpose as these do.

I didn't think that the committee report, or Mr. Orcutt's personal view expressed this morning, indicated that we wanted to suspend the continuing survey of consumer finances while we go into methodological research. Quite the contrary, I think we say quite explicitly that the continuing collection of data would fill important needs. It should be modified as research indicates the direction in which it should be modified. But when we say things could be improved and we need research on the way in which things could be improved, that doesn't mean we need to stop collecting data until we know the best way it ought to be collected and used.

I wouldn't like to be held to any formula for matching funds that are used for collecting data with funds for methodological research and for analysis of the research results. Perhaps something like a 1 to 1 formula wouldn't be too far off. This should be applied, however, not just to the funds of the agency that collects the data, but to all the funds available from a variety of sources for research on the data, and for experimentation on how to collect better data.

Methodological research, as Mr. Orcutt pointed out, is not necessarily very expensive. Often it involves small samples of a hundred or two hundred families, compared with the 3 to 5,000 you might want in a full-blown operation. The payoff may be extremely great, and perhaps it would be wise for the Federal Reserve always to devote some fraction, 10 percent—I wouldn't like to have to defend that figure—to encourage methodological research, some experimentation on how better to collect the data. The data would be better now, if such a policy had been followed over the past decade.

The CHAIRMAN. Are there other comments from the panel?

Mr. SEIDMAN. If I might express an individual judgment, I think that the one aspect of this which has been pointed out most strongly,

is the need for considerably greater use of the reinterview technique. The whole problem of the extent to which consumer expectations, or consumer attitudes are really realized, is, it seems to me, one that requires a considerable amount of investigation, and I think that such investigation can only be achieved by incorporation into the survey, itself. It is the very problem that Mr. Passer spoke about before, that is how to gage particular data that are developed in the survey without having a body of experience as to the extent to which the attitude of consumers is actually affected by a given set of expectations, or a given set of attitudes. Such a question as where prices are going up or going down, for example, or whether business is going to be good or going to be bad, or getting to a much more precise point, whether when you say you are going to buy a house, you are actually going to buy that house, it seems to me is of very great strategic importance. I personally think that this aspect of it could afford to be emphasized to a much greater extent than it is at present.

The CHAIRMAN. Thank you.

Is there any comment by any other member of the panel?

Mr. TALLE, do you have some questions of the panel?

Mr. TALLE. Yes, Mr. Chairman, I do have some.

The need for improvement in methods has been mentioned, I think, by every member of the panel.

First I want to say that I am very favorably impressed with the improvements that have been made in statistical methods, and I think it would be helpful to all of us, Mr. Tobin, if you would give a brief explanation of how a sample of 3,000 households can be used to represent all the households in the United States.

Mr. TOBIN. Well, I will make a stab at that, anyway.

The 3,000 households are chosen in such a way that every household in the United States population has a known chance in advance of being included in the sample.

Now, for the reasons that we went into earlier, these chances are not always equal, because it may be more important to have more observations of high income households, or unincorporated businessmen, or farmers, than it is to have observations of other people.

Perhaps I could explain this in the following way: Suppose you were trying to predict an election, and you know that everybody in a given community is going to vote the same way. The only problem is which way they are going to vote. You need to take only one observation from that community to be able to predict its vote. In another community you know it is going to be closely divided, touch and go, 51-49, or 49-51. Then you are going to have a pretty big sample from that community before you make any prediction. In general, you try to oversample people whose behavior is more likely to be variable, in order to get more reliable indication of what the variable people, the people that are likely to be different from each other, are going to be doing.

Whatever is done about that, the sample is drawn so that each household has a known probability of being included in the sample. We say it represents the United States population, in the sense that each family, so to speak, stands for thousands of other families in the population who aren't in the sample, and we use that family's characteristics to infer the characteristics of the many thousands that aren't included. This way of selecting the sample is meant to avoid bias. It

is meant to be representative in the sense that samples like this are, on the average, like the population they are drawn from. If you take samples like this again and again and average the results, they would look like the whole United States population, whereas a biased sample, in which you don't take care that every household in the country has a certain probability of being included, won't represent the United States population at all.

We go back to the famous Literary Digest poll of 1936, where the Digest, to its misfortune, sampled not the voters of the country, but the population of subscribers to itself, and to telephone service. People who didn't subscribe to the Digest or get listed in the phone directory didn't get a chance to be represented in that sample at all, and the Digest prediction, therefore, was quite wrong.

Now, this doesn't mean a sample of 3,000, even if it is chosen by probability methods, is highly accurate. It only means that it isn't biased, and that you can perhaps compute how close you are to hitting the national total. There is always a good chance that if you chose a different 3,000, if you drew another sample, other names out of the hat, so to speak, but still by the same procedure, you would get different results. You would almost certainly get different results because you have different people. But you can compute what the range of variation due to sampling variation is, and put some limits on the deviation of the statistic you compute from the sample from the statistics that would apply for the whole population. You can't get something for nothing here. If you want these limits to be narrower, if you want to have a narrower band within which you are sure the national total will fall, a narrower band around what the sample indicates, you have got to have a bigger sample. There is no way of getting around it. While for many things a 3,000 sample may give you results that are within tolerably close limits for the users of the data, for other things, a 3,000 sample still contains so much possibility of variation from one sample to another that you don't come close enough to the national total for the purposes of the users.

I don't know if this is helpful.

Mr. TALLE. I am grateful to you, Professor Tobin, for that statement.

I was wondering in this connection, when questionnaires are sent out, or oral interviews made, who are the people that answer? Are they mostly the women in the household, or men, evenly divided, or do women predominate?

Mr. TOBIN. In these Surveys of Consumer Finances, a special effort is made, as I understand, to get the response from the head of the household, who knows about the financial affairs of the household. I believe in 85 percent of the cases this is successful, that the response from the chosen household is from the head, who is either the male, if there is a male present, or it may be a household in which there is no male head and then it would be a woman.

This is one of the things that makes a financial survey more expensive than other surveys. If you try to make this effort to get the response from the man, who supposedly knows, then you have to go back when he is going to be there in the evening.

Mr. TALLE. The old Romans used to say, "Femina est varium et mutabile," which I think translated would be "Woman is a fickle and changing thing."

I am not saying anything against women because I think perhaps men are as fickle and changing as are women, but I am wondering whether you have encountered a psychological difficulty of that sort.

Mr. TOBIN. I don't know about that. I know there must be some households in which the woman knows more about the financial affairs than the man.

Mr. TALLE. Quite a few.

Mr. TOBIN. In those cases they try to get them both to answer the questions.

Mr. TALLE. If I might ask another question, is it ever possible, with a sample of this size, to produce any useful data by regions? I thought of that in connection with Professor Orcutt's statement, where the matter of strata was brought up.

Mr. TOBIN. Why don't you answer, Mr. Orcutt?

Mr. ORCUTT. I think it is possible.

Certainly it has been one of the criticisms that has been made of the survey, that when you want the data real relating to breakdowns of the strata, there aren't enough observations in the particular cell or particular strata to give the accuracies you want, and that has been a frequent criticism.

On the other hand, it depends a little on what you want. If what you want to do is make an estimate of some aggregate for that region, or a subtotal, you are up against a worse situation than you would be if what you were trying to do was estimate some relationship which might hold between, let us say, consumption and income for that particular strata.

Mr. TOBIN. A good many of the answers to the committee's questionnaire, I think, included requests for regional data, or for data for particular subgroups of the population. To get these estimates of the strategic economic variables within the limits that you would like to tolerate from a survey, you would certainly have to have a national survey larger than 3,000.

A 3,000 national survey isn't going to give enough observations in each region or occupational subgroup to give the kind of estimates that these users are requesting.

Mr. STOFFER. If I might make an additional comment there; for that reason the committee felt that periodically there ought to be oversampling of different segments of the population so that in one report we might get a very careful study, let's say, of farmers, whereas you probably could not say too much about farmers' intentions from the farmer's proportion of a national sample of 3,000. If you, say, doubled or trebled the number of farmers for a particular survey, then you could say something about farmers. You wouldn't do that every year, because if you did it for all groups, you would have to have ten or fifteen thousand cases, but this is one of the ways of economizing; and still getting information, not annually but occasionally, on various important subgroups of the population.

We feel that that is one of the devices, on the assumption that very large funds won't be available, for increasing the size of the sample and giving you some of the segments that you are asking questions about.

I would like to make one other comment and that is that in the opinion of most of us who have worked with the technical problems here, the greatest sources of inaccuracies are not due to sampling.

The greatest sources of inaccuracies are due to the inability to ask the right questions in the right way, and there is where perhaps the most important methodological research is needed. Reinterviews are a good check on such question asking.

I think we know a great deal about the technical sampling, thanks particularly to the work of the Bureau of the Budget and the Bureau of the Census, which have contributed greatly to our understanding of this problem.

Mr. TALLE. Mr. Jones, do you choose to comment?

Mr. JONES. I was simply going to say that about 5 years ago, the pattern of this sample was changed so that some regional data have been provided for four major regions of the country, and some regional data have been presented in the Federal Reserve Bulletin. It is true, however, that the use that could be made on a regional basis has been rather limited, and we have not been able to do a great deal in this respect.

Mr. TALLE. Mr. Orcutt?

Mr. ORCUTT. I wanted to say one of the advantages of having pilot studies would be that even with a sample of, say, three or four hundred directed to a particular strata, you could determine whether or not that strata is behaving in a substantially different manner than other groups should be treated, on a different basis, or not.

Even a sample of two or three hundred in a particular strata would be far larger than the sample now available for a particular strata out of the 3,000.

Mr. TALLE. Now I have a final question.

From the standpoint of the Joint Committee on the Economic Report, which of the improvements listed, beginning on page 80 in your report, would you consider most helpful?

Mr. TOBIN. This may be a matter on which opinions differ among members of the task group. I would put emphasis on the use of reinterviews, which comes first in our improvements, and also on the integration of the Survey of Consumer Finances with other surveys conducted by the Survey Research Center. But I would hate to draw invidious distinctions of importance on these recommendations.

Mr. TALLE. I can understand that. I would welcome comments from other members of the panel, if they choose to make them.

Mr. PASSER. I would like to reiterate the point that Mr. Tobin originally made in answer to Mr. Jones' question, the very knotty question of additional funds. There are important recommendations which we don't think will take any more funds.

I think this is an extremely important point. For instance, consider the recommendation about conferences on policy and methods and the stimulation of research and analysis. This additional work which will help in answering some of the very tough methodological questions is probably possible through tapping private funds, in universities and in other places where there are persons willing to work on these questions if given a greater opportunity.

When you take the three points about reinterviews, integrating the surveys, and the stimulation of additional research, and when you realize—at least it was our view and of course we are not a hundred percent sure we are right, but we think this is right—that this is possible within the present budget, I think that it is an extremely

important conclusion that even if no additional money is made available, these very important recommendations could be carried out.

Mr. TALLE. That conclusion is certainly significant and encouraging. Thank you, members of the panel, and thank you, Mr. Chairman.

The CHAIRMAN. I have 1 or 2 questions.

In regard to your recommendation, that periodic conferences be held with respect to the scope, methods and analysis of the survey of consumer finances, in which university research workers and uses of survey data from the fields of business, labor, and agriculture might well be invited to participate—who should sponsor such a conference?

Mr. TOBIN. I think we had in mind, or at least in the back of our minds, that if the Federal Reserve continued to be active in this statistical field, they could well sponsor the conference.

The CHAIRMAN. Is it possible or desirable, in connection with consumer surveys, to obtain data on stocks held by consumers—for example, the major consumer durables?

Mr. TOBIN. Yes, indeed; and one of our recommendations is for further information of that sort. That comes on page 88. We think it is very important for the problem suggested by the word "saturation." Whether people get saturated with durable goods is a really important question for the future of this economy, and we do favor collecting a lot more data on that subject.

The CHAIRMAN. Are there any further comments from members of the panel, or questions?

If not, gentlemen, on behalf of the subcommittee, I would like to express to you our very deep appreciation for the fine job you have done. I would like to express the personal pledge to you, and I am sure I speak for all members not only of the subcommittee, but of the full committee, that we have no intention of allowing this report or any other reports we have received through the fine cooperation of the Federal Reserve Board and various individuals, to go unnoticed.

We are profoundly concerned that there be action ensuing from the fine work which you have done.

The subcommittee is now recessed until 2:30, when we will hear the Consultant Committee on Business Inventories.

(Whereupon, at 11:45 a. m., the subcommittee recessed, to reconvene at 2:30 p. m., the same day.)

REPORTS OF FEDERAL RESERVE CONSULTANT COMMITTEES ON ECONOMIC STATISTICS

TUESDAY, OCTOBER 4, 1955

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT COMMITTEE ON THE ECONOMIC REPORT,
Washington, D. C.

The Subcommittee on Economic Statistics of the Joint Committee on the Economic Report met at 2:30 p. m., the Honorable Richard Bolling, chairman, presiding.

Present: Representatives Richard Bolling and Henry O. Talle.

Also present: Ralph A. Young, Director of the Division of Research and Statistics, Federal Reserve Board, and Frank R. Garfield, advisor on economic research in the Division; Stanley Lebergott, economist for the Office of Statistical Standards, Bureau of the Budget; and John W. Lehman, clerk.

The CHAIRMAN. The subcommittee will be in order.

We heard this morning from the task group reviewing statistics on consumer expectations, which was the third of a series of five panel discussions to consider the findings of these groups on selected economic statistics sponsored by the Board of Governors of the Federal Reserve System at the request of the Subcommittee on Economic Statistics.

This afternoon we hear from a panel of distinguished analysts who will present their findings in regard to inventory statistics. We are, of course, most grateful to the Federal Reserve Board for organizing this study, but we especially appreciate the cooperation of the members of the panel who have taken on this responsibility in addition to their already busy schedules.

As I explained to the panel this morning, we have also asked to sit with us today Mr. Ralph Young, Director of the Division of Research and Statistics of the Federal Reserve Board, Mr. Frank Garfield, of the Federal Reserve Board staff, and Mr. Stanley Lebergott, economist for the Office of Statistical Standards, Bureau of the Budget, who will be representing Mr. Raymond T. Bowman, Assistant Director of the Bureau of the Budget for the Office of Statistical Standards.

Senator Sparkman, who is also a member of this subcommittee, has sent his regrets at being unable to attend this meeting because of being out of the country.

Mr. Dewhurst, I suggest that you proceed with the opening presentation in your own way, introducing the other members of your panel either now or as they may be called upon. At the conclusion of your opening statement, we will proceed with a general discussion between and among the panel members and the subcommittee.

Before we start, Congressman Talle, is there anything you wish to say at this time?

Mr. TALLE. Mr. Chairman, I will not take time to say anything except thank you to the gentlemen of the Federal Reserve System and to the panelists, all of whom I want to commend for distinguished scholarship, great energy, and wholehearted cooperation.

The CHAIRMAN. Mr. Dewhurst, will you proceed?

STATEMENT OF J. FREDERIC DEWHURST, THE TWENTIETH CENTURY FUND, AND CHAIRMAN OF THE COMMITTEE ON ECONOMIC STATISTICS

Mr. DEWHURST. Before proceeding, I should like to introduce the other members of the committee present today.

On my right is Mrs. Ruth P. Mack, of the National Bureau of Economic Research.

On my left, Mr. William H. Shaw, of E. I. du Pont de Nemours Co., and Mr. Joseph K. Heyman, of the Trust Company of Georgia, Atlanta, Ga.

Last, but not least, Mr. Arthur L. Broida, of the Federal Reserve staff, who has served as secretary of our committee.

There are two members not present today, who sent their regrets—Mr. Lester S. Kellogg, of Deere & Co., and Mr. Moses Abramovitz, of the National Bureau of Economic Research and Stanford University. They were unable to be present.

Mr. Chairman, we have deliberated over a period of 10 months, holding our first meeting last December and our last meeting here less than 2 weeks ago, and we have reached a number of conclusions and 32 recommendations on which we have had unanimous agreement.

These conclusions and recommendations are embodied in the mimeographed material which is already in your hands.

I regret to say that the entire report has not been completed and will require some additional time. The committee is agreed on the substance of the report, but some of the changes which were agreed upon at our last meeting will require time to be embodied into the report, and additional time will be required for checking factual data in the text and in the appendixes, and for printing. All this I would say would extend the time required for preparing the complete report and getting it into your hands in printed form by perhaps 2 or 3 months—we would hope by the end of the year.

The complete report will extend to some 350 or more typewritten pages. It will include three background sections in which we have attempted to discuss the role of inventories in the economy, the need for inventory data, and the nature of the data now available.

There will be three sections of findings, together with the analysis and supporting data, and appendix material which will run to greater actual length than the body of the report itself; as I say, a total of some 350 or 360 pages.

It may be of some interest to point out very briefly how we have operated during the past 10 months, and what we have tried to do in our report.

The committee has held seven meetings. As I say, the first one was held last December and the last one—not counting this one—a couple

of weeks ago. As a rule, we have met for 2 or 3 days, and in the aggregate we have met for a total of 16 days.

During these meetings we have conferred with some 30 representatives of Government agencies responsible for collecting and publishing inventory data, and certain of the agencies who are users of inventory data. These representatives are from some 10 of the agencies of the Federal Government, 8 of them responsible for collection, and 2 primarily interested in inventory data as users.

In addition to our meetings, various members of the committee have conferred at considerable length on numerous occasions with representatives of these Government agencies. In addition to that, we have had from all of them letters and memorandums responding to special inquiries which the committee directed toward them. Beyond that, we have canvassed a large number of representatives of banks, insurance companies, business firms, university professors, and other users of inventory data throughout the country, and have received some 200 replies, of which 180 gave us very significant substantive suggestions as to the improvement of inventory material.

Finally, the Federal Reserve staff has rendered us aid continuously throughout the period of our service. Mr. Broida has been made available full time, and I will say that he has had full-time work to do.

I think this is the appropriate time to thank everyone involved for the cooperation we have had—first of all, the Federal Reserve for the extensive use of their personnel and facilities and their help in every way at every stage of our work; the various Government agencies and the very busy officials of these agencies, for their very ready and patient cooperation; and beyond this, the public, the users of the data, whose response was perhaps the best evidence of the importance of inventory statistics that it would be possible to present.

Now, as to what we have tried to do in the report, we realized that our primary mission was to consider the improvements which we thought, and which others thought, might be made in inventory statistics as they are now collected and presented. We wanted to go beyond that, however, in presenting a description of all the inventory statistics available, to the extent that it was possible to do so in the time available to us. We felt that our report should provide a sort of a sourcebook of information to scholars in the field, both in public agencies and in private industry. So we are presenting in the appendix descriptions of the main Government inventory value series, and a listing and brief descriptions of the several hundred Government and private quantity series for individual commodities. I think we are all astonished to find the extent and variety of inventory data already in existence. We also are presenting a very extensive summary of the users' views, prepared by one of the staff of the Board, and based on the two-hundred-odd replies from various users of inventory statistics.

In addition to all of this, of course, we are presenting our conclusions and recommendations, as I indicated earlier.

I should say that we have limited our field of inquiry necessarily, because I suppose if you defined inventories widely enough you might define them as being synonymous with the national wealth. We concluded that we should limit our attention to business inventories—

which means inventories in the hands of farmers, manufacturers, wholesalers, and retailers.

We have excluded from consideration consumers' inventories, which are obviously very important, perhaps, in the aggregate—that is, in total value—more important than total business inventories.

We have excluded another category, and that is unsold houses, which we believe important, but which we felt could not be dealt with by us, and we have given only limited attention to Government inventories, though recognizing that they are very important in two fields—in agricultural commodities and in the stockpile of strategic materials. We have made a recommendation regarding the handling or treatment of Government inventories, but, on the whole, we devoted no great attention to that field.

We were not able, very extensively, to discuss and analyze the relation of inventory data to a great variety of other types of information currently made available, although we have recognized such relation to sales and to orders data.

Again, we have limited our attention to national figures rather than regional or local figures, although the latter are obviously important in some cases. We felt that our primary concern was with inventory data useful in analysis of general business conditions, rather than specific conditions concerning a particular industry or a particular commodity, although we recognize that detailed statistics relating to particular commodities are of great importance to particular industries and business firms.

We have recognized the importance of commodity data, however, as possible source material for the construction of a general index of physical inventories, somewhat comparable perhaps, to the Board's index of industrial production, although much more complicated.

Finally, we have been very glad to accede to one limitation upon our responsibilities, which was contained in the directive we received from Chairman Martin, and that was that we were not to concern ourselves with any recommendations as to which Government agencies should collect particular types of information. As I said, we have been very glad to accept this limitation.

Now, as to our findings and recommendations, in the first place there is no question of the importance of inventories in the economy. Even in the way we have defined our scope, business inventories at the end of last year were valued at something like a hundred billion dollars, based on data which we recognize are not entirely adequate. That means they constitute something like 30 percent of the gross national product.

More important, however, is the behavior of inventories during the business cycle, or during changes in business conditions. One of our absent members, Mr. Abramovitz, who made a study of inventory activity during the interwar period, reached the conclusion that something like 30 percent of the cyclical fluctuations occurring during that time were accounted for by inventory fluctuations.

Since the end of World War II, the importance of inventory fluctuation is quite obvious—so much so that the recessions of 1948-49 and 1953-54 could properly be defined as inventory recessions.

I think one reason for the importance of inventory changes in cyclical movements is obvious. They can move very rapidly, and unlike most of the other components of gross national product, they can be-

come negative as well as positive. It is very easy to have a shift from a liquidation of inventories at the rate of 5 or 6 billion dollars a year to an accumulation at the rate of 5 or 6 billion dollars a year, which would mean a shift of 10 or 12 billion dollars.

In view of the importance of inventories in business fluctuations, it is obvious that inventory data—the data picturing inventory changes—are equally important in understanding economic changes, and in formulating public and private policies. This fact is widely recognized in the replies we received to our inquiry, and is widely recognized by the users of inventory data among the Government agencies.

Now, as to the existing inventory data, they represent a great improvement over what we have had in the past, over what we had only a few years or a decade or so ago, and we are convinced that they represent excellent value for the money that is being spent to collect them. I should say, Mr. Chairman, that we were constantly aware that it is very easy for protagonists of anything such as inventory data to forget cost entirely, and to emphasize the importance of their material without having in consideration other necessary Government costs.

The current data, however, are inadequate. I don't think there was any doubt in the committee as to this conclusion, and in saying so, we again want to emphasize that this is in no sense a criticism of the collecting agencies. If anything, it is an indication that not enough money is being spent to get the information and that more information and better information is required.

We have felt that to bring into effect our recommendations, very modest additional expenditures, compared with the total amount now being spent on statistical collection and presentation, would be justified.

I am sorry to have taken so much time. I had thought I would be through within 20 minutes, but I will try to make the rest of what I have to say very short.

The CHAIRMAN. Go right ahead in your own way. There is no hurry.

Mr. DEWHURST. When it comes to the question of our recommendations, I imagine your questions will cover a good many aspects that it would not be possible for me to even point out at this time. These 32 recommendations can be classified in various ways, but a number of them are general recommendations for the improvement of existing inventory data; improving the service to users, for example, by better description of data, as in some cases the descriptions are inadequate; improving the efficiency with which they are collected and presented, as there are opportunities for coordination and cooperation in the efforts of different Government agencies collecting similar data; and improving the quality and quantity of data being collected and presented.

As I say, these are general recommendations which apply, more or less, to a large number of most of the series now being assembled.

In addition, we have made some specific recommendations regarding individual series. I think perhaps as important as any, if not more important, are those relating to the book value data for manufacturing presented by the Office of Business Economics of the Department of Commerce. These figures are used more widely than any others. They are current, on a monthly basis, and they are used and quoted widely

by business analysts, and by people who are attempting to understand or predict business changes; and I will say that it is really a shoestring operation now. The amount of money, personnel, and effort that goes into this series is far less than we think would be justified in view of the importance of the series. Hence we have recommended a new and better sample for the manufacturing data.

We have also recommended more and better industry detail. I think this will perhaps come out in the discussion, but we are concerned with the difficulty of showing what is happening in industries when the information obtained refers to companies or corporations.

There is a growing tendency, as most everyone is aware, of the growth of business corporations in a horizontal sense rather than in a vertical sense—in other words, the development of companies to give an illustration, which on the one hand make machinery, and on the other hand make chemicals. General Mills, I was reading the other day, is a flour milling company that is also making aircraft and rocket parts.

Now, when these large companies—General Motors, for example, with automobiles, refrigerators, and diesel engines—when these companies are classified in a particular industry, we are likely to get—and I think increasingly so—a distorted picture because of the fact that they incorporate many industries within their corporate structure. We have recommended a method which we believe would give a much clearer industry picture, by getting from these very large companies divisional reports along industry lines.

Beyond this we are recommending that the benchmark statistics, which are very important in any monthly series, be shifted to the material collected annually by the Census Bureau rather than the company series of the Internal Revenue Service.

Now, as to the retail figures, which are a second part of the monthly OBE book value series, we are recommending that a better sample be obtained by getting direct reports from independent retailers, who are almost not at all covered at the present time.

Chainstores are covered by the Census Bureau, and department stores are covered through the Federal Reserve reports, but these constitute only a fifth, perhaps, of total retail trade. At the present time the OBE is doing a very ingenious job in estimating changes for those parts of retail trade not now represented, but we feel that they should be represented by direct reports.

As to the wholesale data, we believe that the present sample should be expanded by the inclusion of reports from manufacturers' sales branches, which are now, because of the use of company reports, ordinarily included in the published figures for manufacturing rather than for wholesale trade.

We believe that the Federal Reserve figures can be improved in certain respect; that the very fine figures on department store sales, orders, and stocks would be improved by getting orders data for selected departments—these are not now available—and by seasonally adjusting the figures by departments.

Beyond these recommendations, we have tried to look ahead to longer range possibilities, where we didn't feel that we could recommend specific action now, but where we thought that further study would indicate the possibility of providing new and more significant measures.

We are not sure what problems would be involved in attempting to get manufacturers reporting inventory data to separate out their defense-related goods. Defense production obviously is an important part of the economy, and the division of inventories into those that respond to ordinary market influences and those that respond to Government orders would be useful.

Looking further ahead, we think that it would be worth studying the possibility and exploring the feasibility of at some time using the physical volume data now available for several hundred individual commodities—the Department of Agriculture figures for farm commodities, the Bureau of Mines figures for minerals and metals, and other available figures for eventually preparing a physical index of inventories roughly comparable to the physical index of industrial production which the Federal Reserve Board now publishes. We realize this would be a much more difficult task than it is in the case of the production index, and we are not at all sure that it is even possible. For that reason, as I say, we have recommended further study rather than immediate action.

Mr. Chairman, there are a number of other, but I would say minor and less important, recommendations. I have tried to summarize the principal ones, and I imagine you or others may have questions to ask.

(The following report of the Consultant Committee on Inventory Statistics, organized by the Board of Governors of the Federal Reserve System at the request of the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, was subsequently furnished for the record:)

STATISTICS OF BUSINESS INVENTORIES—REPORT OF THE CONSULTANT COMMITTEE ON INVENTORY STATISTICS

(Organized by the Board of Governors of the Federal Reserve System at the request of the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report, October 1955)

LETTER OF TRANSMITTAL

OCTOBER 31, 1955.

HON. WILLIAM MCCHESENEY MARTIN, JR.

*Chairman, Board of Governors of the Federal Reserve System,
Washington, D. C.*

DEAR MR. MARTIN: The Committee on Inventory Statistics submits herewith a report prepared in accordance with your request of November 22, 1954.

We have appreciated the opportunity to serve on a committee studying the important problem of improving information concerning inventory developments. We trust that the material gathered and the recommendations prepared may promote understanding of problems in this field and provide a basis for further progress in establishing the firm foundation of facts about inventory developments very much needed as an aid to economic analysis and policy formation.

We wish to express appreciation to the Board of Governors for making available the invaluable services of Arthur L. Broida over this period, for making it possible for Frank R. Garfield to consult with us during our deliberations, and for providing other assistance. We wish also to call your particular attention to the high degree of cooperation received both from the principal users of inventory statistics and from the compilers.

Very truly yours,

(Signed) J. FREDERIC DEWHURST, *Chairman.*
MOSES ABRAMOVITZ.
JOSEPH K. HEYMAN.
LESTER S. KELLOGG.
RUTH P. MACK.
WILLIAM H. SHAW.

SECTION I. SUMMARY

Over a period of 10 months the Committee on Inventory Statistics has been inquiring into the needs for inventory information, the nature of the information now available, and possibilities for improving the information at a reasonable cost. After many consultations and much correspondence with users and compilers of inventory data, we have reached the following broad conclusions.

1. Fluctuations in business inventory holdings are usually exceedingly important in the ups and downs of business activity, as they were, for example, in 1948-49 and again in 1953-54.

2. Reliable current information concerning business inventory developments is an essential element in analyzing economic developments, as, for example, in understanding the behavior of gross national product (GNP), industrial production, employment, credit, and prices.

3. Business inventory information can be of great assistance in the shaping of many public policies, including monetary and fiscal policies, and other policies directed toward economic stabilization and growth; and many business policies, including investment plans as well as current buying and production programs.

4. The importance of inventory developments and of prompt and reliable information concerning them is widely recognized by analysts in business, academic, and government positions. The many replies to an inquiry made by the committee were detailed in their analysis and vigorous in their expressions of interest.

5. Business inventory statistics now available represent a great improvement over the information available only two decades ago. In fact, progress has been particularly noteworthy in view of the limited funds available.

6. In spite of this improvement, however, the present body of inventory information fails to meet all the important needs of users, is often not fully understood by them, and in some instances fails to meet standards appropriate to the importance of such data in economic analysis and policy formation.

7. The difficulties of obtaining reliable current information on business inventories stem from (a) the wide variety of book value and physical volume data needed by users to serve different important purposes, (b) the basic nature of business records—many small enterprises do not maintain written inventory records, and the inventory records of large enterprises have not been designed for the purposes of general economic analysis, (c) the inherent difficulty of obtaining reports that are at once reliable, detailed, comparable with other data, and promptly available, (d) the lack of adequate resources to permit compiling agencies to undertake needed surveys, expand and redesign reporting samples, follow up respondents late in reporting, make special studies of user requirements, and develop new reporting techniques, and (e) insufficient understanding on the part of some users of the real problems of data collection, the necessarily somewhat approximate nature of preliminary data, and the advantages of revisions which are aimed to set the record straight as soon as possible. The problems of reliability are accentuated by the fact that interest in inventories often centers in comparisons of their changes over different periods. Reasonably small inaccuracies in the measurement of inventories proper can, under certain circumstances, result in very substantial distortion of the record of change.

8. The importance of having current business inventory information which will satisfactorily meet the major needs for economic analysis and policy formation, and the possibility of making important improvements in inventory information through relatively modest increases in reporting costs to the compiling agencies and to the respondents, warrant increased outlays for this phase of the Federal program for economic intelligence, and increased participation and support for the reporting program on the part of business.

These conclusions indicate the direction of our thinking and are set forth as a common ground on the basis of which more specific problems can be considered. We have explored the need for improved inventory reports and the most suitable methods for obtaining them with experts in this field and have agreed on a number of recommendations. These recommendations are listed below, after a brief outline of this report and some comments on its scope.

In section II attention is directed to the role of inventories in the operation of the economic system and some of the reasons for the wide fluctuations in inventory holdings that are so important a feature of general business fluctuations. In section III various major needs for information concerning inventory holdings are discussed and major gaps in existing information are indicated. This section is based in considerable part on the results of the survey

of users in business, academic, and other positions, reported on more fully in appendix D.

Section IV, as well as two appendixes still to be completed (appendixes E and F; see note after appendix D), is designed to provide a rather comprehensive view of the existing body of inventory information. The information included in table 1 of section IV and in the two appendixes is based in considerable part on published materials and special memorandums submitted to the committee, and was checked with the compiling agencies. It is hoped that this material will be useful not only as an aid to understanding our recommendations but also as a ready reference for people who wish to know more about the various inventory statistics that are published. Section IV also includes considerable discussion of several basic problems in the compilation of satisfactory inventory statistics—some of them, of course, common to many statistical programs.

The final three sections deal directly with means for improving inventory statistics. A number of general problems are considered in section V. Inventory value data are treated in section VI and physical volume inventory data in section VII.

The procedures followed by the committee, the experts consulted, and the staff assistance received are noted in appendix B. Briefly, we met for 1 to 3 days on 7 different occasions. A great deal of time, both at committee meetings and informal conferences, was devoted to discussions of problems and plans with various Government compilers and users of inventory statistics. A statement from the Chairman of the Council of Economic Advisers is included as appendix C. Careful consideration was given also to the many thoughtful replies received to the written inquiry addressed to users.

In reviewing the present inventory statistics, and in exploring various possibilities for improvement, the committee has given considerable attention to costs. While costs are difficult to assess because many of the figures collected are obtained along with other figures, the conclusion seems clear that present Federal outlays for inventory data are relatively small. Current compilation of the entire monthly Industry Survey covering not only manufacturers' inventories, but also their sales, new orders and unfilled orders, for example, involves the efforts of not more than six people, largely on a part-time basis. And manufacturers, it should be noted, hold nearly half of all business inventories. The proposals made here would involve larger outlays than are made at present but we believe the cost of the program as a whole would be well within reason.

Throughout this report, the emphasis is on those inventory statistics that may be regarded as endowed with a public interest and that may thus warrant the outlay of Federal funds. This has been interpreted to mean primarily statistics that are or would be useful to economic analysts, wherever employed, in studying the general economic situation and trying to understand what it implies for future developments and present policies. Many of the detailed inventory statistics of great interest to particular companies in planning their own operations were regarded as beyond the scope of this study. We have recognized, however, that more than one type of inventory information is required to understand important economic developments as they occur.

Specifically, we find (a) that broad aggregates such as the inventory change figure in the GNP accounts and inventory totals for manufacturing and other major sectors of the economy are of great use in economic analysis, (b) that information on components of the broad aggregates is needed for finer analysis, for interpreting the movements of the totals, and for gaging the reliability of the totals, and (c) that statistics relating to stocks of some important individual products such as steel and textiles are also desirable for study of developments at large. The balance between production and consumption and the changing volume of business inventory holdings must necessarily be studied both in terms of grand aggregates and rather detailed figures. Furthermore, for some analytical purposes—as, for example, in studying the sources and uses of funds of corporations—information is needed on a value basis while for other purposes physical volume data are required.

Limitations of time have made it necessary to exclude from study several sorts of inventory information in spite of their intrinsic importance. We have examined only data on stocks held in the United States and for the country as a whole. Little attention has been paid to regional or other local information, or to data for other countries, although in some—notably Canada—substantial progress has been made in working out inventory reporting programs. We have concentrated on information useful for analysis of business developments. This has meant

emphasis on current data, especially monthly data. The generally more comprehensive bodies of information available annually or at longer intervals, in spite of their independent value, have been considered chiefly as aids in developing current series and in adjusting current series to more firmly established levels. We have further limited our study to business inventories—farm and nonfarm. While consumers' holdings of finished goods and business' holdings of industrial equipment are large and in their own ways are significant, and stocks of unsold new houses may at times be important, it did not seem feasible to consider them.

Statistics relating to expectations regarding inventories might well have been considered in connection with study of information relating to existing inventories. Such statistics, however, were agreed to be of a more primary interest to the committee on general business expectations and have not been reviewed in this report.

The committee recognized the close relationship between inventory and other statistics and the clear need for considering such related data in planning any inventory statistics program. For example, inventory developments can be better interpreted if comparable sales data are available and it might be better to have good data on both sales and inventories than excellent data on inventories alone. Data on new and unfilled orders help to interpret inventory changes and vice versa. Indeed, inventory statistics of all sorts become much more significant as they can be related to a variety of data concerning developments in production and distribution. We felt impelled, however, to stop short of a general study of all related statistics that might be needed in interpreting inventory developments.

No recommendations have been made with regard to the allocation of responsibility among the various Government agencies. This was beyond the scope of the committee's assignment, as noted in Chairman Martin's letter of November 22, 1954, a copy of which appears as appendix A.

The general finding most basic to the recommendations adopted appeared as item 8, page 3:

"The importance of having current business inventory information which will satisfactory meet the major needs for economic analysis and policy formation, and the possibility of making important improvements in inventory information through relatively modest increases in reporting costs to the compiling agencies and to the respondents, warrant increased outlays for this phase of the Federal program for economic intelligence, and increased participation and support for the reporting program on the part of business."

The recommendations which follow are brought forward from sections V, VI, and VII and can best be understood by reference to those sections and to background material in sections II, III, and IV.

GENERAL RECOMMENDATIONS (FROM SEC. V)

1. We recommend that agencies compiling inventory statistics review the instructions now given to respondents and, where necessary, make them more detailed and specific with respect to (a) the nature of the figures desired, and (b) the information to be supplied by the respondent regarding the nature of the figures reported.

2. We recommend exploration of the possibilities of securing assistance from interested professional organizations in obtaining information on current accounting practices for inventories and in developing standards for reporting inventory information.

3. We recommend that agencies compiling inventory statistics explore intensively all potential means of speeding publication of the figures and adopt those for which the gains in time are commensurate with money and other costs.

4. We recommend that agencies compiling inventory statistics review their present descriptive material and, where necessary, modify it to provide, in accessible form, detailed descriptions of the purposes, nature, methods, limitations, potential errors, and appropriate applications of the data; that they revise the descriptions as frequently as necessary to keep them up to date; and that they refer to such descriptions in all current releases.

5. We recommend that agencies compiling related sets of inventory statistics work closely together to avoid differences in results not due to differences in purposes; and that they provide clear explanations in their descriptive material of the nature and significance of differences related to purposes, with as close an approach to full statistical reconciliation as is feasible without undue cost.

6. We recommend that agencies compiling inventory statistics publish periodically lists of all releases on inventories or employ other devices to insure that users are familiar with all the information developed on the subject by the agency; and that agencies compiling monthly or quarterly figures make tabulations of back data readily available to users, preferably in pamphlets also including descriptive material.

7. We recommend that government agencies compiling inventory statistics strive to integrate their efforts more closely with those of private statistical organizations engaged in similar work by offering technical advice and assistance, by undertaking to provide benchmark data for additional selected monthly series compiled privately, and by exploiting privately produced data in government compilations to the maximum extent warranted by their nature and quality.

8. We recommend that the appropriate government agencies actively explore the possibilities of partial or complete financing by private groups of new government compilations of inventory and related information; that they undertake such compilations where arrangements can be developed which are agreeable to both parties and equitable to others whose interests are affected; and that results of such compilations—as well as other compilations—made available to anyone outside the government be made simultaneously available to the general public, except where national security considerations are involved.

9. We recommend that appropriate arrangements be made to provide the necessary strong leadership and guidance to the government's work in the field of inventory data.

RECOMMENDATIONS ON VALUE DATA (FROM SEC. VI)

Manufacturing

10. We recommend that a new sample be developed for the monthly Industry Survey of the Office of Business Economics, covering manufacturing inventories, sales, and orders. The new sample design should be adequate for the purposes discussed in this report and strenuous efforts should be made to achieve and maintain high response rates, including personal visits where necessary.

11. In view of the very considerable proportion of inventories reported to the Internal Revenue Service on a basis other than the calendar year, we recommend review for each industry group of the advisability of using these data as benchmarks for the monthly industry survey and, where feasible and necessary, appropriate modification of adjustment procedures. We shall recommend below (No. 14) that the Census Bureau's annual survey of manufactures be used in place of Internal Revenue Service figures for annual benchmark purposes in the industry survey; the recommendation here is intended to apply only until such a change may be made.

12. We recommend with respect to the industry survey that overlapping between manufacturing and nonmanufacturing and among manufacturing industry groups be reduced; that finer detail for significant subgroups and industries be developed; and that efforts be made to develop a "market" grouping of the data supplementary to the industry grouping. The market grouping should be in terms of the following categories, with such further product differentiation within categories as may prove feasible: finished manufactured goods, subdivided into producers' equipment, consumers' durable goods, and consumers' non-durable goods; and unfinished manufactured goods, subdivided into construction materials and unfinished goods destined for further manufacture. Recommendations Nos. 13 and 14 are made to help achieve these ends, which will also be served by recommendation No. 10 above.

13. We recommend that negotiations be conducted with selected manufacturing companies chosen by prior analysis of diversification in company activities, with a view to determining the types of detail they can readily provide on a monthly basis. Arrangements should be made for the regular submission of such detail where it will facilitate attainment of the stated objectives.

14. We recommend that the data of the Census Bureau's annual survey of manufacturers, rather than the Internal Revenue Service's statistics of income, be employed for annual benchmark purposes in the industry survey. This change in the source of benchmark information is preferred to the modification in adjustment procedures recommended in No. 11 above; the earlier recommendation is intended to have effect only as long as the use of Internal Revenue Service data may be continued.

15. We recommend that studies be undertaken of means for estimating the proportion of manufacturers' inventories and associated data that are defense related. If feasible, estimates should be published at times when high levels or changes in level of defense activity make such information particularly significant.

Trade

16. We recommend an expansion of the scope of the inventory data collected in the Census Bureau's monthly wholesale trade report to include manufacturers' sales branches and other nonmerchant wholesalers, in addition to the presently covered merchant wholesalers.

17. We recommend that the "kind of business" categories of the standard industrial classification, such as "dry goods," "drugs," and "paper" wholesalers, be continued as one basis for classifying wholesale inventory and related data, but that when feasible this be supplemented by a grouping of the figures for wholesalers into "market" categories corresponding to those described for manufacturers. (See recommendation No. 12).

18. We recommend that a regular annual survey of wholesale trade be instituted, similar to the one conducted by the Census Bureau for 1953, but covering nonmerchant as well as merchant wholesalers, inventories from the same returns, to assist users of inventory and other data in dealing with problems of changes in the degree of consolidation and classification of companies in the statistics of income data.

19. We recommend that the scope of the Census Bureau's monthly retail trade report, which now covers sales of all types of stores and inventories of chain stores, be expanded to provide inventory data for independent retail stores other than department stores.

20. We recommend that the "kind of business" categories of the standard industrial classification, such as "grocery stores," "department stores," and "lumber yards," be continued as one basis for classifying retail inventory and related data, but that when feasible this be supplemented by a grouping of the figures for retailers into "market" categories corresponding to those described for manufacturers. (See recommendation No. 12.) In this supplementary grouping, data for department stores should be distributed to the appropriate market categories.

21. We recommend that the Federal Reserve statistics for department stores by major department, which now cover stocks and sales, be expanded to include data on outstanding orders for selected departments or groups of departments of general analytical interest.

22. We recommend that, for selected departments or groups of departments of general analytical interest, the Federal Reserve department store data on sales and stocks by department, and the data (proposed in recommendation No. 21 above) on outstanding orders by department, be published on a seasonally adjusted basis, as well as without seasonal adjustment.

Other sectors

23. We recommend that further studies be made by an appropriate agency of the needs for, and the costs of, current statistics on value of inventories for sectors other than manufacturing and trade.

Internal Revenue statistics

24. We recommend that beginning-of-year and end-of-year inventory figures be included regularly by the Internal Revenue Service in the planned alternate-year tabulations of statistics of income data for noncorporate business.

25. We recommend that end-of-year corporate inventory figures now tabulated by the Internal Revenue Service in statistics of income be supplemented by tabulations of the reported beginning-of-year inventories from the same returns, to assist users of inventory and other data in dealing with problems of changes in the degree of consolidation and classification of companies in the statistics of income data.

26. To help implement recommendation No. 11 above, we recommend that the Internal Revenue Service make tabulations of the volume of manufacturing corporation inventories, classified by major industry group, according to the fiscal periods to which the data relate. Such tabulations would be of value also for other purposes.

Gross national product statistics

27. We recommend that the significant intermediate results of the calculations culminating in the published GNP series on change in business inven-

tories be regularly published at a time and to the extent warranted by improvements in the basic data employed. Pending publication of these intermediate results we recommend that each quarterly release of the GNP inventory change figure be accompanied by a brief note explaining the relationship between the GNP inventory change figure and OBE book value data for manufacturing and trade, and including a summary statistical reconciliation of these data.

28. We recommend that to the extent feasible on the basis of available data and consistent with national security considerations, net changes in selected categories of Federal Government inventories be shown in the GNP tables as a component under "Government expenditures."

RECOMMENDATIONS ON PHYSICAL VOLUME DATA (FROM SEC. VII)

29. We recommend that a pilot program of study and experimentation be undertaken by appropriate agencies with a view to meeting needs for physical volume measures of inventories at aggregate levels and in selected detail as expeditiously as possible. Areas in which study may be usefully initiated are specified in the three following recommendations.

30. We recommend that attempts be made to improve the information available for deflating inventory value figures by obtaining additional information about (a) accounting practices, turnover rates, and other factors influencing the values assigned to individual commodities in business accounts; (b) the appropriateness of available price information for inventory deflation; and (c) feasible means of securing additional reports of prices paid for goods in stock for use in inventory deflation.

31. We recommend that experiments be undertaken in constructing physical volume indexes for significant broad sectors or types of products. These should be initiated on the basis of existing physical volume data for individual commodities and any data collected in accordance with recommendation No. 32 below. Such experiments would help to indicate the additional data needed for more satisfactory measures. Experimental indexes may well make some use of deflated value information, where data in physical units cannot yet be obtained.

32. We recommend that studies be made of the feasibility of developing satisfactory physical volume inventory and related data for individual commodities of outstanding importance, and for significant sequences of commodities at several stages of fabrication and distribution. Initial studies might properly be concerned with inventories of steel and textiles in various positions, and the sequences involving them, since fluctuations in production, consumption, and inventories of these commodities are often of great significance to the economy.

SECTION II. THE ROLE OF BUSINESS INVENTORIES IN THE NATIONAL ECONOMY

A modern industrial economy must operate so as to offer consumers and other buyers a wide range of products for immediate or prompt delivery. Since the great bulk of these products pass through many stages of processing and distribution long before their final sale, stocks of goods, or inventories, must be built up and maintained at many points. The common forms of such business inventories include (1) farm products, minerals, and other raw materials; (2) goods in various stages of production; and (3) finished goods ready for delivery to final users.

From the standpoint of ownership, business inventories are generally held by primary producers of materials, by manufacturers—whose inventories ordinarily include purchased materials, goods in process, and finished products—and by wholesalers and retailers. Various types of supplies also are held by enterprises in the service industries, and commodities traded on organized exchanges may be owned temporarily by individual traders.

Inventories might be defined to include not only these business inventories but also finished goods held by consumers, stocks held by Government agencies, and industrial equipment owned by business. Consumers obviously hold more autos and other durable goods than business enterprises do and changes in such stocks have their effects on economic activity. Generally, however, consumer and other final users buy goods because they expect to use them, not because they plan to sell them in one form or another. Used cars do come on the market, it is true, and so also do some types of stocks held by the Federal Government, especially CCC stocks of agricultural products, and, occasionally, goods from Government stockpiles of strategic materials. Altogether, the extent and significance of

changes in holdings of goods by consumers and other final users might warrant study as an integral part of any broad analysis of economic developments. But this committee has not attempted to go beyond the field of business inventories, except for selected business-type inventory holdings of the Federal Government, discussed in section VI.

Why inventories are necessary

Business inventories are needed to permit the smooth and steady flow of goods through the long "pipeline" from farms and mines at one end to final buyers at the other. Some goods are always in the course of fabrication or transportation. Manufacturers hold reserves of materials to insure steady operation, and both manufacturers and wholesalers hold stocks of the goods they sell to meet their customers' needs without undue delay. Retailers need goods for display, and their shelves must have enough merchandise, in ample variety, to permit consumers to buy what they want when they want it. Large inventories would thus be required to fill the pipeline even if there were no variations from one month to the next in the flow of goods, or in the demand for them.

Other inventories have their origin in seasonal variations in the production and processing of raw materials, particularly farm products, and also in seasonal consumer demands for many types of finished goods. These seasonal variations in supply or demand lead to more or less regular patterns of accumulation and liquidation of stocks of these goods in the hands of producers and distributors. Beyond this, producers and distributors need reserves of goods to take care of other, less predictable shifts in the availability of supplies or in their customers' demands. In some cases, inventories are accumulated as an incidental result of efforts to stabilize employment over the year or during a recession. In others, they are deliberately accumulated or reduced because prices are expected to change, or other developments are expected.

Thus, the quantity of inventories held by business is determined by many factors. It is influenced by the volume of production and sales, by the time goods must spend in fabrication and transportation, by the number of hands through which they normally pass, by the severity of the fluctuations in output and demand, and by the nature of expectations. The amounts held to meet various needs are not mechanically fixed; fluctuations in inventory holdings are continuous, and are intimately related to general business fluctuations.

How large are business inventories?

In 1949, according to a recent study by Raymond Goldsmith, inventories held by industry, trade, and agriculture, constituted about 9 percent of the estimated national wealth. More significantly, stocks are typically large relative to current output. The value of business inventories held at the end of 1954 was equal to more than a quarter of the gross national product for that year, and over 40 percent of the value of that portion of GNP represented by tangible goods (i. e., GNP exclusive of expenditures for services by consumers and Government).

At the end of 1954, according to the Department of Commerce, the total value of business inventories was \$99.5 billion, of which farm inventories accounted for \$18.1 billion. Total nonfarm holdings of inventories amounted to \$81.4 billion, of which \$43.5 billion, or more than half, were held by manufacturing industries. About a quarter, or \$19.8 billion, were in the hands of retailers and \$11.6 billion, or 15 percent, were held by wholesalers. Mining, construction, public utilities, and the service trades and other industries held much smaller quantities, amounting in the aggregate to only \$6.7 billion.

The size of inventory holdings required relative to sales varies widely from one broad sector of the economy, from one line to another, and even from one department of a company to another. Department store stocks of men's wear, for example, ordinarily represent a 4- or 5-month supply, and stocks of women's wear, a 2- or 3-month supply, the difference reflecting the more rapid style changes in women's wear. The inventory holdings of some manufacturing industries, such as tobacco stemming and redrying and canning and preserving, are large relative to their sales, but those of some others are relatively small.

The volume of business inventories has grown over the years and may be expected to continue to increase, as the national output rises with growth in population and in the labor force, and with gains in productivity. The increase in inventory holdings has not been steady, of course, with periods of rapid accumulation followed by periods of liquidation, as part of the general swings of business. Nor are all long-term factors working for growth. Substantial costs are involved in financing holdings of goods and in storing them, and there are strong incentives for reducing to the most efficient levels the volume of

stocks held. Improvements in the speed and reliability of transportation, in communication facilities, and in institutional arrangements for buying and selling all work to reduce the volume of stocks needed to support any volume of activity. Similarly with certain other developments, such as extension of vertical integration of business. On the other hand, the need for stocks rises with increases in the variety of goods made and sold, including the multiplication of brand names. In general, then, there are many factors, some offsetting, affecting the rate at which business inventories grow over the long pull.

Why do inventories fluctuate?

Receipts of goods purchased by an enterprise represent additions to its stocks; sales of goods draw down stocks. The inventory holdings of the enterprise rise or fall depending on whether receipts exceed sales or vice versa.

Both flows are partly under the control of business managers. A retailer or manufacturer can vary the size of the orders he places and set the delivery dates, and within limits he can alter his sales volume by changing selling prices and modifying sales policies. A manufacturer, scheduling his production rates, can also vary the proportions of his inventories held in various forms—materials, goods in process, and finished goods.

To some extent, however, the flows of goods are beyond the manager's control. Merchandise arrives under orders placed at various earlier times, and, what often is more important, sales vary according to the current decisions of buyers. Thus, inventory holdings of an enterprise at any particular time are a composite of the manager's earlier plans and of unfolding developments beyond his control. From the point of view of the firm, inventory holdings, and changes in inventories from one time to another, are in part voluntary, in part involuntary.

In placing orders, scheduling production, and developing other policies with implications for inventories, business managers must estimate what their volume of sales will be over the coming period in each of the various lines they deal in. They also must decide what inventory holdings would be appropriate for such a volume, considering prospects for prices and supplies; when deliveries are slow and prices are expected to rise, managers try to anticipate their requirements and order more than they would if markets were slack and prices were expected to fall. As actual sales exceed or fall short of the managers' earlier expectations, stocks fall below or rise above the planned levels. Similarly with departures from scheduled receipts of goods. Meanwhile, changes in sales and other developments in the markets in which they sell lead to revisions of sales estimates for the future, and developments in the markets in which they buy lead to new notions about appropriate inventory levels for such sales volumes.

Movements of inventories for the economy as a whole—representing the sum of changes for all individual enterprises—are thus intimately related to sales, supply conditions, prices, and other factors. The relationships are complex because of the need for advanced planning and the elements of judgment and speculation about the future always present in the continuing processes of buying, making and selling. And inventory holdings help to determine the future, as their levels change, or as opinions regarding the appropriateness of their levels are modified. Reflecting diverse influences of many sorts, the patterns of inventory fluctuation generally differ significantly among parts of the total—for different commodities, industries and sectors of the economy; for different stages of fabrication, from materials to finished goods; and for different levels of distribution.

In general, changes in total stocks tend to lag behind changes in production and sales. In an upswing in business, with sales and production rising, business managers try to build up stocks, but actual accumulation may lag because sales exceed earlier expectations. After the peaks in production and sales have been reached, and managers revise downward their estimates of desired inventory holdings, accumulation may continue for a time because sales typically fall faster than production can be reduced. Adjustment of production downward to take account of reduced sales is complicated by the reluctance of various producers to incur the costs involved in curtailing output and by their frequent hope that any slackening of demand will be temporary.

How the lag in the movement of stocks comes about is summarized with a hypothetical illustration in a recent report, *The Strategic Role of Inventories*, by the business executives research group under the sponsorship of the Wharton School of the University of Pennsylvania:

"Assume there is a balance between production and sales in which inventories are at the level desired by businessmen. For simplicity, it may be supposed that the desired inventory level is determined with reference to sales; that is, that there is some inventory-sales ratio which businessmen regard as normal and seek to maintain. Now imagine an increase in sales. The initial effect, before production can respond, will be to draw inventories down. But soon there will be an increase in production owing to the attempt of firms not only to meet the higher level of sales, but also to build inventories back to the usual relation to sales.

"Thus, a 1-percent increase in sales may cause the retailer to raise his orders from manufacturers by, say, 2 percent. This causes the manufacturer, in turn, to increase his buying in order to meet the higher demand and to maintain or replenish his inventories. Thus, the original rise of 1 percent in sales may lead to increase in production of say 3 or 4 percent. However, the higher rate of production generates higher income payments and thus stimulates sales further. Inventories therefore may remain abnormally low despite efforts to increase them.

Eventually, the increase in production outstrips the increase in sales, and inventories begin to mount. When they reach their normal levels, purchasing to restore inventories ceases, and a significant source of demand is eliminated.

"The rate of production turns down, income payments fall, and sales decline. Inventories become abnormally large. Production is cut further to match the decline in sales, and more, to work inventories down.

"Attempts to reduce inventory, however, are initially frustrated because of the continuing downswing in sales. In time, the fall in sales slows and is less than the decline in output, and inventories are brought to the desired levels."

Inventory changes and business fluctuations

The fact that the amount of inventories needed to support business activity is so large makes our economy highly sensitive to changes in the volume of goods held in stock. Since business inventories are equal to over two-fifths of a year's output of goods, a moderate percentage increase in stocks can call forth a substantial volume of additional production, and a moderate liquidation of stocks can result in substantial production cuts. Furthermore—and this is a central but often difficult point to understand—a shift from accumulation, say, at a rate of \$6 billion a year, to liquidation at a similar rate, means a reduction of \$12 billion in the production rate. Usually after inventories accumulate they are liquidated. Although with inventories growing over the long pull, there is a tendency over a cycle for liquidation to be less than accumulation, the effect on production of the change from accumulation to liquidation remains as serious as the illustration suggests.

As a matter of record, a considerable portion of the cyclical fluctuations in output has taken the form of shifts from inventory accumulation to inventory liquidation and back again. One study shows that between the two world wars, over 30 percent of the cyclical fluctuations in output were traceable to this source, with the proportion higher than that except in the most lengthy and severe fluctuations.

In both of the minor-business cycles since the end of World War II, fluctuations in stocks have been so important as to cause these setbacks often to be referred to as "inventory recessions." In the 1948-49 readjustment, inventory developments played a highly important role. In 1948, according to the inventory component of the gross national product (which reflects the change in business inventories each quarter valued at the average prices of the quarter), accumulation occurred throughout the year and was at a seasonally adjusted annual rate of \$5 billion in the fourth quarter, when GNP was at its high of \$264 billion. Liquidation was at a rate of \$3 to \$6 billion in the last three quarters of 1949, with the top rate of liquidation reached in the final quarter under the impact of a prolonged steel strike. Thus, while the gross national product was declining from a peak seasonally adjusted rate of \$264 billion in the fourth quarter of 1948 to \$256 billion in the final quarter of 1949, or by \$8 billion, the inventory change component was shifting downward by \$11 billion, from a \$5 billion rate of accumulation to a \$6 billion rate of liquidation. In this interval the annual rate of outlays for producers' equipment declined by about \$3 billion and there were similar moderate reductions in consumers' outlays for nondurable goods and in net foreign investment. Consumers' outlays for durable goods and services meanwhile advanced as did State and local government outlays. But the biggest single shift by far was in the inventory picture.

In the 1953-54 recession, inventory developments were somewhat less important. While gross product declined by \$12 billion from the second quarter of 1953 to the second quarter of 1954, the inventory change component shifted downward by \$7 billion, from a \$4 billion rate of accumulation to a \$3 billion rate of liquidation. This shift was somewhat less than the decline of \$10 billion in defense outlays in the same period. As before, producers' equipment declined only moderately and some types of outlay kept on increasing during the recession.

More recently, in the recovery from the third quarter of 1954 to the second quarter of 1955, a shift from inventory liquidation to inventory accumulation has been an important factor. While the gross product rose by \$26 billion, the shift for inventory changes was \$9 billion—from a minus \$5 billion rate to a plus \$4 billion rate.

In the special case of the post-Korean boom, after June 1950, Government purchases for defense purposes were large and fear of shortages and rising prices prompted heavy buying by both consumers and businesses. Production rose sharply, and despite heavy sales, producers and distributors were able to expand their inventory holdings rapidly—at a \$5 billion rate in the third quarter of 1950, a \$15 billion rate in the fourth quarter, and a rate nearly that high in the first half of 1951. Partly as a result of demands for inventories, as well as for other purposes, prices rose rapidly.

Inventory movements have been important not only in periods of rapid price change, such as 1950-51, the early 1930's, and 1920-21, but also in periods of moderate price change, such as 1948-49, or little price change, such as 1953-54. It has been an important factor in recoveries and booms as well as in recessions and depressions.

Understanding of inventory developments as they occur, therefore, is indispensable in studying the changing business situation. In spite of the lagging character of inventories the extent of inventory accumulation or liquidation and shifts in the rate of inventory change can provide significant clues to future developments in business activity. In 1953, for example, while inventories continued to accumulate after production turned down in the middle of the year, earlier inventory developments had warned of possible trouble ahead. While inventories may be expected to grow steadily over the long run as the economy grows, accumulation of over \$4 billion of inventories altogether in the four quarters from mid-1952 to mid-1953, when inventories were high to begin with, was clearly greater than would be justified by the long-term growth of the economy. Study of inventory information in more detail than such broad aggregates can illuminate further many issues of interpretation of current developments.

In practice the understanding of inventory movements has been difficult because of real uncertainties about the reliability of the data available at the time. The inventory change figures cited here are taken from the most recent revision of the gross national product tabulations, and for some quarters are substantially different from those first published, as will be noted later. (See table 4, p. 446.) In the following section the needs for more reliable figures and for other improvements in the data are considered.

SECTION III. INVENTORY STATISTICS—USES, REQUIREMENTS, AND CRITERIA

In the preceding section we discussed the role of business inventories in the national economy and the importance of changes in inventories in the ups and downs of economic activity. In the remainder of this report the emphasis is not on inventories, but on inventory statistics: that is, on the data that measure inventory levels and inventory changes. The purpose of this section is to set forth the major uses, requirements, and criteria for inventory statistics—in brief, the kinds of inventory statistics needed.

We took two steps to supplement our own views on the uses of inventory statistics: (1) We requested and obtained the opinions—through personal presentations and written submissions—of representatives of interested Government agencies, many of them compilers as well as users of inventory statistics, and (2) we invited written statements of views from 320 selected individuals, of whom about 180 made substantive replies.

Survey of Users

Views of users of inventory statistics, both in and out of Government, have made an important contribution to the preparation of this report. The contributors are listed in appendix B, and a rather detailed summary of their comments is given in appendix D. The respondents are engaged in varied fields of

activity, being associated with manufacturing, wholesaling and retailing enterprises, trade associations and publications, labor organizations, banks, investment companies, brokerage firms, insurance companies, sales finance companies, universities, business consulting services, research organizations, Federal agencies in Washington, and Federal Reserve banks.

The inquiring letter, although deliberately couched in general terms, often brought forth detailed response on many of the topics suggested for discussion. Taken as a whole, the comments of users—both those who appeared in person and those who gave their views in writing—have given us a picture of what inventory data are used, how they are used, what other economic data they are used with, how well the existing data meet the users' needs, and what additions and changes users believe would be helpful in meeting these needs better. In this section we draw extensively on these outside sources, without specific reference.

Use of inventory data for commodity analysis

Broadly speaking, inventory statistics have two major uses: analysis of specific commodities and industries, and analysis of general economic and financial trends. Many users of inventory statistics are interested primarily in commodity or industry data. For example, the purchasing agent for an electrical equipment concern wants information that will assist him in appraising the price and supply prospects for copper, aluminum, and many other individual products that he must buy. The flour miller wants to know to amount of wheat held in various hands and the textile-mill operator needs similar data on various textile fibers and their semifinished and finished manufactures. The security analyst charged with making investment recommendations on companies in a particular industry is eager for knowledge of the inventory position of the immediate industry and those that make up the market for its products. The department-store operator wants stocks data for stores in his area in detail by individual department.

The user survey revealed that the interest of certain groups, especially some trade associations and labor organizations, was limited principally to inventory statistics for specific commodities and industries. The responses from business concerns undoubtedly would have focused even more than they did on specific commodities if the survey letter had been directed primarily to purchasing agents or sales managers, rather than to economists and heads of businesses.

Despite the great importance of specialized inventory information to many users, we determined early in our deliberations to concentrate on types of inventory data of more general use. We have therefore limited our consideration of commodity statistics largely to those judged to be of strategic importance in analysis of general economic developments, and to data useful in making broad physical volume indexes. A list of existing physical volume data on inventories of commodities held in the United States, with brief descriptive comments, will be presented for reference purposes in appendix F, which is not yet completed. (See note after appendix D.)

Use of inventory data for general business analysis

Inventory statistics are widely used for analysis of general business and financial trends. They are used partly from the viewpoint of level, especially in the calculation and analysis of stock-sales ratios and inventory-bank loan relationships, but in most cases users are interested in changes in the level of inventories. While some users are interested in level or change in the value of inventories, most users are interested primarily in that part of inventory fluctuation reflecting change in physical volume as distinguished from price change.

Many of the survey respondents regard inventory statistics as one of the most essential tools for business analysis, both for current appraisal of the economic picture and for forecasting short- and intermediate-term developments. Obviously these statistics serve a vital need for those who make business policy and for those charged with formulating Government economic policy.

Principal current inventory series and their uses.—Some of the major needs for inventory statistics for general business analysis are met, more or less adequately, by available data. These are discussed here in terms of particular series. Important gaps in existing statistical programs are then taken up. Discussion of criteria for inventory statistics—that is, the desirable standards of quality, speed of reporting, and like matters—will be deferred until later in the section.

1. The inventory change component of the gross national product accounts, published by the Office of Business Economics of the Department of Commerce, is a widely used series. This series shows, both quarterly and annually, the estimated change in physical volume of total business inventories from the be-

ginning to the end of the period, expressed in average prices of the period. Figures are provided quarterly for the total and for the nonfarm component, and a further breakdown of the change in nonfarm business inventories into a few broad groups is given annually.

The inventory change component of GNP measures the estimated investment or disinvestment in inventories by business. Or expressed differently, it shows, quarter by quarter, whether production is larger or smaller than takings by consumers and other final users, and the extent of the difference. Reliable information on these points is clearly of great value to all students of business trends—both in helping to understand current developments and as an aid to projections of the near and intermediate future. And this series, as a component of the gross national product, can be usefully compared with other component series, including those for expenditures for producers' durable equipment and new construction, and for broad types of consumer expenditures. Many analysts, both in Government and in business, regard a dependable inventory change component of GNP as perhaps the most important single inventory series needed in formulating Government economic policy and broad business policy.

As a summary series, the GNP inventory change component is based on detailed underlying data from various sources (inventory value figures and price adjustment factors). To some extent inaccuracies in the detailed data may be offsetting in the total but even so a high order of dependability in the more important of these underlying series is essential in order to have a dependable GNP inventory change series.

2. Monthly series are published by the Office of Business Economics on the value of inventories held in manufacturing and trade. These data are provided in conjunction with information on sales, and for the manufacturing sector on new orders and unfilled orders as well. The data are reported separately for manufacturing, wholesale trade, and retail trade, with breakdowns for each sector between durable and nondurable goods, and with some further breakdowns by industry groups or types of stores.

These monthly OBE inventory series probably enjoy the broadest use of any presently available inventory statistics, and also serve as major ingredients for the quarterly GNP estimates of business inventory change. The monthly data are widely used to indicate both the level and the change in inventories in various sectors of the economy. They are used especially in association with data on sales and orders, and to a lesser extent, with information from other sources on bank loans. Many users want more detailed information than is now given, but a number who have studied the nature of the compilations regard some of the industry detail published in recent years with skepticism. Although expressed in value terms the figures are frequently used to provide indications of physical volume changes, which are more often than not the subject of interest.

The OBE series on manufacturing inventories include a breakdown—for the durable goods, nondurable goods, and all manufacturing totals—by stage of fabrication (purchased materials, goods in process, and finished goods). The "stage" classification is made from the viewpoint of the individual company; an item included in "finished goods" inventories of one manufacturer becomes a "purchased material" when sold to a subsequent processor. These stage-of-fabrication figures are useful in analyzing changes in total manufacturing inventories, and sometimes provide clues of a shift in business spending policy.

Holdings of purchased materials, for example, may be increased partly as the result of higher rates of production, but they may also be expanded to protect the buyer against anticipated shortages and price advances. Conversely, they may be liquidated—by reducing purchases more than use—when prospective market conditions are easier. Goods-in-process inventories, on the other hand, are influenced more directly by production rates and usually fluctuate closely with manufacturing output. Finally, changes in finished goods stocks often lag behind changes in both output and total inventories. In 1953 the principal rise in manufacturers' stocks of finished goods came after July, when production was declining, and trade holdings of finished goods also did not reach a peak until autumn.

Without going further into the causes and nature of these changes—in varying degree the results both of voluntary decisions and of unexpected developments on either the demand or supply sides—it is clear that the differences in behavior of the several types of inventories make separable figures useful to the analyst. Many users of these statistics expressed a need for finer industry breakdowns of the stage of fabrication data.

3. A quarterly series on book value of manufacturers' inventories is compiled and published jointly by the Federal Trade Commission and Securities and Exchange Commission in their Quarterly Financial Report for United States Manufacturing Corporations, as part of their continuing study of the financial position of such corporations. The report is in the form of condensed income statements and condensed balance sheets, with inventory figures included as one balance-sheet item. The figures are broken down by industry groups and by size of corporations as measured by total assets. These inventory figures are often used in studies of working capital changes and other financial developments.

4. A number of department-store stocks series, assembled and published along with sales figures by the Board of Governors of the Federal Reserve System and by each of the 12 Federal Reserve banks, constitute another important set of inventory value data. These figures have several special uses. They are the principal monthly figures, available over a long period of years for any type of retail inventories, and hence are useful for historical as well as current analysis. Also, they show data by Reserve districts, States, and cities, and therefore are one of the few sources of inventory information available to users who have an interest in regional or local data.

The most comprehensive series is based on a 70-percent sample for stocks, including the large national department store chains. Other Federal Reserve series show (a) coordinated data on sales, stocks, outstanding orders, receipts, and new orders, and (b) stocks and sales data for various individual departments and groups of departments. These department-store statistics are valuable aids to analysis.

Gaps in inventory statistics.—As will be seen later, there are serious questions about the quality of many of the available statistics on inventories, and about the degree to which they meet the needs described above. With respect to other major needs, data are largely or wholly lacking.

1. One important need in the field of inventory statistics is for better data measuring the physical volume of inventories. There are numerous series showing physical inventories for individual commodities, but the coverage is far from comprehensive. Except for the quarterly GNP inventory change component (which reflects physical volume changes within, but not between, quarters), certain annual GNP data, and annual measures for agriculture, no broad estimates relating to physical volume changes in inventories are available. The problems of developing such measures for various broad types of goods and for various sectors of the economy are prodigious (see sec. VII), but the need is real.

Changes in inventory value data, if interpreted as indicating changes in physical volume, can be highly misleading. For example, in the last half of 1950, following the outbreak of hostilities in Korea, the value of nonfarm business inventories increased about \$9 billion. However, according to Department of Commerce estimates, less than \$4 billion of this rise represented a gain in physical inventories and more than \$5 billion was accounted for by the sharp jump in prices. It is entirely possible for inventory value figures to move in one direction while physical volume changes move in the opposite direction. Even moderate changes in prices for individual commodities can obscure the nature of physical changes in particular industries. Many of those who responded to our inquiry laid great emphasis on the desirability of having current physical volume inventory statistics, both for the major aggregates and for detailed breakdowns.

Earlier in this section reference was made to inventory data for individual commodities and industries, and it was pointed out that the committee decided to consider such data only where they were of strategic importance for understanding the operation of the economy as a whole. In the view of a number of survey respondents, commodities such as steel and textiles would fall in this category. We believe that reliable physical volume data for inventories of such commodities, in the various positions in which they are held, would be of great value in appraising general business trends. Moreover, if data were also available for selected products made from these materials at various stages in the production-distribution process, it would be possible to gain valuable insights into developments through analysis of the entire sequence from the materials stage through finished goods.

2. Many users believe that Federal programs on inventory data would be greatly strengthened if such information could be provided for additional special product groupings. For example, in recent periods of rapid change in defense expenditures it would have been extremely helpful to have had a breakdown of total manufacturing inventories between those related to defense and nondefense activities.

On a continuing basis there is another major type of breakdown, not now available, that would be useful for more effective analysis of business trends: a grouping in terms of "market" categories. In this grouping manufacturers' inventories would first be divided between finished goods and all other stocks. "Finished" goods would be defined not from the point of view of the reporting company, as in the stage of fabrication figures referred to earlier, but from the viewpoint of the processing sector of the economy as a whole; that is, as goods ready for final use without further fabrication. Finished goods at factories would then be broken down into the broad categories of consumers' durable goods, consumers' nondurables, and producers' equipment, with finer differentiation where possible; for example, foods might be separated from other consumer nondurables. These groupings of data for factory stocks would be matched by corresponding categories for stocks at wholesale and retail.

Unfinished goods at factories might also be subdivided, according to the nature of the finished goods into which they are to be embodied, but difficulties would be quickly encountered in connection with materials that have a wide range of uses. A minimum division of unfinished goods would be into construction materials, which are used outside of manufacturing, and materials to be further fabricated in factories. These would similarly be matched by groupings of stocks of unfinished goods held at wholesale and retail.

Admittedly, as discussed in later sections, there are complex problems of classification inherent in this type of breakdown. But its development even on a crude basis would be invaluable for purposes of analysis. The several categories of finished products distinguished are subject to broadly different market influences, and fluctuations in figures for them may be expected often to differ markedly in timing and amplitude. Fluctuations at the various levels of fabrication and distribution for each category may also often be expected to differ, as developments occur at various stages and are reflected at other stages. The availability of monthly inventory and related information organized in terms of such a grouping would greatly illuminate current market conditions and would lead to better anticipation of future conditions.

The present breakdown of data for manufacturing and trade into durable and nondurable goods categories, although helpful, does not go far enough. Data for transportation equipment manufacturers, for example, included as a group under durable goods, cover such diverse products as automobiles (consumers' durables), trucks (producers' equipment), and ships and planes (largely defense goods), and also various materials and parts for the manufacture of these finished products. Some other industry groups involve similar heterogeneity.

3. Inadequacy of coverage of certain fields of economic activity is a concern of a number of inventory statistics users. Little or no current inventory information is assembled for a number of sectors, including construction contractors, public utilities, and the service trades, and no aggregate measures are available on a current basis for mining. Fortunately, these uncovered fields account for a relatively small part of total business inventories. Annual figures for all sectors (covering corporate business only) are available in the Internal Revenue Service's Statistics of Income.

Another concern is the method of treating data on inventory holdings of Government in the GNP accounts. Federal, State, and local governments are treated in the same way as consumers and, hence, a net change in inventories held by them is simply reflected in higher expenditures (if their inventories increased on balance) or lower expenditures (if their inventories decreased). Changes in inventories of farm products held by the Commodity Credit Corporation and of strategic materials held in Federal Government stockpiles—both having important influences on market conditions from time to time—are consequently not included in the inventory change component of GNP, which, as described earlier, covers only business inventories. Inventory change data for selected categories of Federal Government inventories, corresponding to the inventory change figures for the private sector, would be a useful addition to current economic intelligence.

Criteria for inventory statistics

At this point we discuss briefly the major criteria for determining the adequacy and usefulness of the data. Some of these subjects are explored further in later sections.

1. The most important standard for inventory statistics (and other statistics as well) is that they be accurate enough to serve the uses for which they are designed. This puts a special burden on inventory data because users are

often interested not so much in levels at particular times as in changes over periods, and in differences between the changes in one period and another. Reasonably small errors in the measurement of inventory levels may—depending on their relative size and direction—result in larger errors in change, and in still larger errors in comparisons of different changes.

The committee recognizes the difficulties faced by compilers of inventory statistics (especially in view of budget limitations). These difficulties include: (a) Lack of uniformity of underlying company records, indeed the virtual absence of monthly or quarterly records in some areas; (b) lack of complete reliability in benchmark data and the time lag in their publication; (c) the problems of designing and maintaining adequate and representative samples of reporting business firms; (d) the problem of obtaining prompt response from the reporting group; and (e) problems of classification.

Some users of inventory statistics are aware of these difficulties, but others apparently are not. Our survey suggests that some users assume a degree of accuracy in inventory figures published by government agencies that is not warranted, considering the problems faced by compilers of the data.

We believe that this situation places a dual responsibility on the compilers. First, they have the obligation of striving continually to improve the data—to strengthen the weak spots and generally to increase reliability at all links in the compilation chain. If this necessitates increased budgets, the compiling agency has the responsibility for trying to get additional funds. Second, the compilers have an obligation to help users obtain a fair understanding of the data they are using; compilers usually have the best knowledge of weaknesses in their series, and should devise methods systematically to impart this knowledge to data users.

Perfect accuracy in inventory data, as in economic statistics generally, is unattainable. Nor is it practical to establish stringent rules as to margins of error that can be tolerated. But real improvements in reliability to make the data more serviceable are possible. The extent of further progress will depend on the continuing active interest of users and the cooperation of respondents, as well as on the skills and ingenuity of compilers.

2. Lateness of publication is perhaps the most widespread single complaint of users of inventory statistics. The OBE summary figures for manufacturing inventories are normally published about 30 days following the date to which they apply, the date on wholesale and retail trade inventories are released about 5 to 10 days later, and the detailed manufacturing figures (including the stage of fabrication series) are reported several days later, for a total lapse of about 45 days before all the preliminary monthly OBE figures are available. The first official release showing the quarterly inventory change component of the GNP usually is available about 50 days after the end of the quarter. One user commented: "Although some time lapse is undoubtedly necessary, the business world wants projects of tomorrow based on today's operations—not projections of today based on yesterday's or last week's operations." The consensus of government and business users clearly is that speed is of the essence.

3. Many users are troubled by the frequency and magnitude of revisions in various inventory statistics. These revisions are of two sorts: (1) current and (2) long-term. Current revisions are caused mainly by the fact that preliminary figures are released before all the reports are in. Long-term revisions result primarily from the incorporation of new benchmark data and occasionally from changes in seasonal adjustment factors and changes in price adjustment factors (for calculating the GNP inventory change component).

Users of inventory data are nearly unanimous in hoping that the need for revisions can be minimized. Improvement in the original figures (better samples and more intensive effort to get reports from habitually late respondents) would go a long way toward reducing the magnitude of current revisions. Several users commented that it would be desirable to delay the release of some inventory figures if this was necessary to reduce the size of later revisions. Current efforts to speed up publication of the Internal Revenue Service' statistics of income (now used as benchmark data for the OBE series for manufacturing) are valuable for keeping the current series close to reality and hence reducing the size of the longer term revisions. The change to a more rapidly available benchmark for this series (as is recommended in this report) would also have this effect.

4. Most users of inventory data like to have monthly and quarterly figures both with and without adjustment for usual seasonal variations and they want the two sets of data published in the same release. At the present time the OBE in-

ventory figures and some of the Federal Reserve stocks series are available on both bases. It would be useful to have the practice extended to all of the major compilations.

5. Inventory statistics are most helpful to many users when available on a comparable basis with such data as production, sales, new orders, unfilled orders of sellers, and outstanding orders of buyers. The Department of Commerce inventory statistics for manufacturing and trade and the Federal Reserve department-store figures are now published in a form that makes possible to some extent coordinated use with related economic measures. Some inventory releases include calculations of stock-sales ratios and a number of users expressed the wish that such ratios be calculated for other series. In any consideration of possible changes in the system of Federal inventory reports, it is desirable that the compilers bear in mind the importance of coordination of inventory data with other series.

SECTION IV. THE AVAILABLE DATA AND SOME BASIC PROBLEMS

The inventory statistics mentioned in the preceding section are those most frequently used for current economic analysis. However, there are other important data on inventories, some of which are used in preparing the statistics already mentioned. These other data include tabulations from income-tax returns, published annually for corporations and occasionally for unincorporated business, by the Internal Revenue Service in statistics of income; quarterly estimates for all corporations, reported in the SEC working capital survey; and data compiled by the Census Bureau for manufactures and wholesale and retail trade in periodic censuses and annual and monthly surveys. All of the aggregate inventory statistics available are listed and described briefly in table 1 and in more detail in appendix E, which is still in preparation. There are also physical volume data on various individual commodities from many sources. These will be listed and described briefly in appendix F, also being completed. (See note after appendix D.)

Most of the inventory statistics listed in table 1 are based on data reported directly by individual business enterprises to the compiling agencies, and adapted by these agencies to represent whole industries or sectors of the economy. These primary statistics in turn provide much of the basic information for the principal secondary statistics—the GNP series on inventory change, the OBE series on wholesale and retail trade, and the SEC working-capital series. The direct reporting programs differ from each other in various respects, such as the types of inventory and other information asked for, the broad group to be represented, the sampling methods, the voluntary or compulsory nature of reporting, and the methods used to estimate broad totals from sample reports. Only in connection with some of the periodic censuses are complete canvasses made for inventory data.

The number of series listed in table 1 is impressive and certainly much greater than could have been listed two decades ago. The series available, differing in their coverage, breakdowns, frequency, and other characteristics, contribute in various ways toward meeting the needs for inventory information. The body of data on inventories, however, is not entirely oriented to needs. Inventory figures are usually only one element in compilations with broader purposes, and no overall integrated program for inventory statistics has been developed. Moreover, the resources devoted to some of the programs covering current inventory data are small. As a result of such factors, existing statistics are in a number of respects inadequate to meet the needs for inventory information.

Because of these inadequacies, indirect measures of inventory changes have been developed from time to time by various groups. Since they are not regularly published, they are not included in table 1. The indirect measures depend on the fact that inventory change results when inflows do not equal outflows; the two flows are estimated and inventory change derived as a residual. Measures of this sort have been calculated from time to time for individual commodities and for broad classes of goods.

For steel, for example, indirect measures of inventory change have been made by contrasting steel production or shipments rates with estimated steel-consumption rates in using industries; steel-consumption rates are usually taken as equivalent to production rates for the various fabricated products made in the using industries. Similar although sometimes less systematic calculations have been made for textiles. In broader studies, production rates in manufacturing industries processing finished goods have been contrasted with those in indus-

tries producing materials. Also, consumer purchases and other final takings of various categories of goods have been contrasted with factory production rates. The procedures in these broader studies yield estimates of inventory change for all intervening holders as a group.

Such studies have been and undoubtedly will continue to be highly useful at times, both for throwing light on probable developments in areas where inventory data are meager or nonexistent, and for providing broad checks on directly reported data. In some cases this approach may remain the only practicable means for approximating the figures wanted. It has the further advantage of focusing attention on the inflows and outflows which are basic to inventory changes and, in a sense, explaining them. Nevertheless, difficulties in the approach and uncertainties in the results are often very great, and in this report attention has been directed chiefly toward improving inventory statistics rather than toward developing indirect indicators of inventory change.

In later sections existing inventory data are contrasted with needs, and specific recommendations are made for improvement. Promptness of reporting and other common problems are discussed in section V. Recommendations on value data, in section VI, and on physical volume data, in section VII, are aimed at improving the reliability of information and providing additional detail pertinent to economic analysis. In the remainder of this section, to provide background for the later sections, we discuss the problems of interpreting value data for inventories and review the problems of reliability and detail. The discussion is in rather general terms, with particular series referred to only to illustrate broad problems common to many sets of inventory data.

Interpreting value data

Inventory figures expressed in physical volume terms—in tons, yards, number of units, and the like—pose various problems of interpretation similar to those of production or other quantity figures. Changes in the "quantity" of cloth produced or in inventory may vary depending on whether the unit of measurement used is square yards or pounds; data on changes in the number of automobiles in stock do not disclose possibly significant variations in composition of the total by make and model.

But value data on inventories are peculiarly difficult to interpret. Like sales and other current value figures they are affected by price changes. Furthermore, the particular values assigned to stocks depend on the accounting procedures used, and there are great differences in the accounting procedures employed by different firms. In one respect, it is true, inventory figures are easier to interpret than sales figures—inventory figures at different stages of production and distribution conceptually do not involve any duplication.

Inventory values of physically identical goods in the hands of manufacturers, wholesalers, and retailers differ because of markups at each stage to cover transportation, handling, and other costs. These differences are desirable for certain purposes, but create problems for other purposes. Moreover, the levels of figures reported at cost are affected by the age of stocks; if prices are generally rising, newer stocks carry higher values.

Efforts are made in some current reporting programs to obtain value data that are consistent in certain respects. As indicated in table 1, information is collected on inventory values at "cost" in the Census Bureau's surveys for trade. The Federal Reserve data for department stores reflect values at "retail." For most of the current reporting programs, however, the inventory value figures reflect "book" values—those shown in the records of the firm, under whatever accounting practices are followed. These practices differ in at least four major respects. They vary with respect to (1) the scope of the assets included in inventories—whether or not goods in transit, and various categories of office and shop supplies, containers, small tools, etc., are included; (2) the scope of the cost elements included in inventory values—particularly the amounts of overhead, or "burden" added to direct material or labor costs; (3) the manner in which goods are "charged out" of inventories to cost of goods sold—whether on a first-in-first-out (Fifo) basis, a last-in-first-out (Lifo) basis, or some other; and (4) the valuation basis used for inventories—whether "cost," "market," "lower of cost or market," "standard cost," or some other. Variation exists not only among firms but often also among different types of inventory in an individual firm—raw materials stocks may be charged out on a Lifo basis, finished goods on a Fifo basis. Practices of individual firms are subject to change with time and for many firms, particularly small, unincorporated businesses, inventory records are meager or nonexistent. Finally, only limited information is avail-

able on what practices are actually followed by individual firms in the various industries and kinds of business.

The alternative accounting practices have important implications for the meanings of inventory figures under various circumstances of price fluctuation, changes in rates of turnover, etc. Without going into these implications in detail, it is clear that the summation of reported inventory "value" figures yields totals that are at best of cloudy significance. Nevertheless, such figures must remain the main basis of current information on inventory developments in the absence of comprehensive measures of physical volume. Inventory value figures will also provide one type of raw material for physical volume measures when and as they are developed, as discussed in section VII. Recommendations are made in later sections for gathering additional information on accounting practices and for working toward standardized inventory reporting procedures.

Reliability

Questions concerning the reliability of inventory and other economic statistics arise at each of several stages in the whole statistical process from business recordkeeping to publication of final national totals. Inaccuracies creep in as a result of inadequate samples and of various reporting and processing problems. When primary statistics are combined with other data, often by agencies other than the original collector, additional problems appear. The compiler of secondary statistics must consider, in addition to the quality of the primary statistics, their applicability for his purpose; and he must then make appropriate adjustments for differences in concept, coverage, and classification. For example, in some steps of the GNP calculation of inventory change, the OBE is forced to rely on poor figures or figures only tenuously related to those of interest.

A list of statistical hazards of various sorts at successive stages along the way may be very discouraging, especially to anyone who expects decimal-point accuracy and wants to be sure of it. The number of problems may be discouraging also to the user who really wants to know all about the series he is using but does not have the time to study long descriptions. Fortunately, however, compilers of statistics can, if they have sufficient resources at their command, overcome many of the difficulties encountered and give users reasonable assurances as to the serviceability, if not the absolute accuracy, of particular data. In recent years significant advances have been made in learning how to improve the reliability of time series, as, for example, through benchmark checks and new sampling methods. Further advances are clearly possible, moreover, as problems of various sorts are increasingly recognized, as business records are improved, as better sampling, reporting, and processing techniques are developed, and as additional resources are allocated to a balanced program for minimizing errors at all stages.

In working toward improved reliability it is important to note the variety of types of reliability that may be sought and to hold requirements within reason. The degree of accuracy, for example, may quite properly vary somewhat among the various component parts of a total and between components in general and the total itself. The reliability of a series as a measure of absolute levels of inventories at various times may differ from its reliability for reflecting changes between one time and some other time. Annual data ordinarily can be expected to represent the facts more faithfully than monthly figures. Unfortunately, preliminary monthly figures—often the most used—are likely to be based on the smallest samples and to be the least reliable. Revised monthly figures, based on more reports, are likely to be more reliable—particularly after final benchmark corrections.

Furthermore, a series with a given degree of accuracy under its original definition may, when used as an estimate of another, unavailable, series, have a very different degree of accuracy in this application. For example, inventory series in book-value terms may be used as measures of physical volume. This involves an error to the extent of the price change embedded in the book-value figures. If a price adjustment is made in value figures to arrive at physical volume figures, the adjustment may be only a rough approximation.

As already suggested, improved reliability in particular series may be sought at various stages—the keeping of business records, the selection of business units to report, the development of reporting forms and procedures, the transformation of reported data into estimated national totals, and, sometimes, the adjustment of totals representing one concept to totals representing a somewhat different concept. Efforts may be made to improve both the accuracy of the figures and understanding of the extent to which reliance may be placed in them.

One of the great advances over recent decades in techniques for developing time series has been the use of benchmark data—figures that are available annually or at less frequent intervals, and that are generally more comprehensive and reliable than the current figures. Benchmark data are used for checking the accuracy of current series and for adjusting these data to make them more accurate. The benchmark information not only contributes to a better historical record but also provides a better starting point from which the current series can be carried forward. In the field of inventory statistics, annual year-end benchmarks for the OBE Industry Survey and for the SEC working capital series are taken mainly from the Internal Revenue Service figures. Less frequent benchmarks, for years for which a Census of Business is taken, are used indirectly in adjusting the Federal Reserve department-store series.

The advantages that arise from using more reliable benchmark data to check and correct current series, at least as to level, are often substantial. But benchmark adjustments do not do all that might be desired. For the most part they apply only to annual or year-end levels and intervening changes must still be based in large measure on the monthly movements shown by the current sample. Also, the benchmarks for some figures may have significant shortcomings themselves. For example, when "year end" inventory figures for an industry are only two-thirds for calendar year ends and are one-third for other fiscal year ends, the effect of this on year to year comparisons needs to be investigated closely. Similarly, it may happen, for various reasons associated with the difficulty of maintaining the highest standards in a mass project, that the more comprehensive data used as a standard may actually be, in particular cases, no better, or even less satisfactory, than totals based on more closely supervised reporting of data from a carefully selected sample. Whatever the limitations of the benchmark checks and adjustments may be in specific instances, however, in general the process represents an important advance.

Meanwhile attention has been increasingly focused on the possibilities of setting up better current reporting systems in the first place. Better current figures would reduce the likelihood of large—and often irritating—revisions long after the principle use has been made of the current figures. One of the most important contributions of benchmark checks, in fact, has been to show the need for better current figures. Study of benchmark data has also contributed to many specific improvements in the use of currently reported information for part of an industry total to represent the unreported part and the total. At the same time development of the theory of probability sampling has given new impetus to the study of the most effective sampling techniques under various circumstances.

In many fields, such as product quality control and biometrics, great advances in reliability have been achieved in recent years through the use of probability sampling. How far and in just what ways these methods are applicable in the field of economic time series, such as inventory series, is one of the important statistical problems of our day. Experimentation in this area has already gone some distance and such techniques are now used for a number of programs involving inventory data. These include various Census Bureau programs, the Internal Revenue Service figures, and the FTC part of the joint FTC-SEC financial reporting program. The OBE sampling plan for the monthly data on manufacturing, developed in 1945 and introduced in 1948, involved the use of random selection of small- and medium-size firms from whom reports were solicited. However, there was considerable nonresponse initially and the list of reporters has changed somewhat since then.

While much more is to be learned in the field of sampling, some broad observations may be made. It is clear that the greatest savings in time and money to achieve a given degree of reliability, and assurance thereof, come where a very small number of reports, properly chosen, will serve in place of a very large number. If a properly selected sample of a few thousand families will suffice to provide information representative of 45 million families, whereas most samples of that size or of much larger size would be much less representative, then it is obviously desirable to make the selection properly. This is true even though it costs more per family to get reports from the particular families that are selected on a random basis within a carefully worked out general sampling plan. In a situation like this a sample selected with due regard for the laws of probability also has the clear advantage that sampling errors can be calculated showing the extent of differences that are to be expected, due to chance, between the sample and the total. The size of the sampling error depends on the number of reports and the variability of behavior among the various units.

However, in an industry where 4 or 5 large firms do all the business, reports may well be needed from all these firms. With a sample of three of them, chosen at random, estimates could be made and a sampling error computed but under most circumstances that error would be very large indeed. In other words, little confidence could be placed in the results—and, perhaps more important, the series itself would often move quite differently from a total based on reports from all 4 or 5 firms.

In less extreme situations, it may be that a few firms do half the business and a large number do the remainder. In such a case, the optimum design of a sample may call for reports from all the large firms and from a sample of the others selected on a random basis. At this point the question of response may be of great importance. If some of the particular firms selected are unable or unwilling to report, the quality of the sample and of the results may be seriously impaired. A probability sample with a high nonresponse rate is no longer a probability sample. Bias resulting from an atypical group of respondents may then be present—as in samples selected on other bases in the first place.

Proposals, then, to increase reliability of inventory series through increased use of probability sampling must be considered in the light of the nature of the industries concerned, the feasibility of obtaining a high response rate, and various other factors. The potentialities of the approach, however, need to be carefully explored.

Whatever problems arise in achieving increased reliability through probability sampling, the theory behind such sampling throws light on a commonly used standard for judging the adequacy of a sample, i. e., the proportion of an industry covered. For industries made up of a large number of small firms, a very small percentage coverage may be quite all right, if the variation in experience within the industry is moderate. For industries composed mostly of large firms with varying experience nearly complete coverage may be essential. Thus a 20-percent sample in one field may give results more reliable than an 80-percent sample in another. In the field of inventory statistics, further exploration of the meaning of present samples and their behavior might help to indicate where the samples most need to be strengthened.

Sometimes discussion of sampling problems becomes so fascinating that other problems are obscured. Obviously great care is needed in all phases of statistical compilations, with every effort made to minimize reporting and processing errors. This requires expert knowledge of business records, a high order of skill in framing questions and instructions, and sufficient resources to communicate with respondents—at length, when necessary. Current data, moreover, need to be reconciled with related data of various sorts wherever feasible and, where other more comprehensive data are considered more reliable, adjusted periodically to be consistent with such benchmark data. Publication of full descriptions of the data and judicious analysis of the figures themselves by the compiling agencies can help users to judge the reliability of the data and the appropriateness of particular intended applications.

Detail in the data

After reliability of the data, perhaps the most basic consideration affecting the usefulness of inventory (and other economic) statistics concerns the kind of detail into which the broad totals are broken down. Accurate detail, usefully organized, has three broad functions, all of great importance: it helps to interpret movements of totals, which can be of very different significance depending on the particular developments contributing to them; it provides information on individual parts of the total, often of primary interest in analysis; and it aids in evaluation of the reliability of the data.

The various kinds of detail now available for aggregate inventory series are indicated briefly in table 1, and the need for additional types, not now available, was noted in section III. The kind of detail most frequently provided is along "industry" and "kind of business" lines, generally following the definitions provided in the Federal Standard Industrial Classification manuals.¹

¹ The standard industrial classification, which was developed by technical committees working under the auspices of the U. S. Bureau of the Budget (and which is now undergoing revision), defines nine broad divisions of the economy, such as agriculture, mining, manufacturing, wholesale trade, and retail trade. Each of these divisions is subdivided into a number of major industry groups, subgroups, and industries. For example, manufacturing activities are divided into 21 major industry groups, such as "Food and kindred products" and "Electrical machinery." The major groups in manufacturing are subdivided into about 140 subgroups, such as "Dairy products" and "Bakery products" within "Foods," and the subgroups are further subdivided into about 450 individual industries, such as "Creamery butter" and "Natural cheese" within "Dairy products."

This type of detail is provided for all of the aggregate statistics listed, except for the quarterly GNP inventory change figures and the SEC working-capital survey, for both of which some detail is calculated but not published; and the Department of Agriculture data. (The Federal Reserve department-store series cover only one industry.) In these various applications of the SIC the fineness with which industries are distinguished varies. For example, only selected major groups of industries are shown separately in the monthly OBE industry-survey data for manufacturing while individual industries are shown in the annual Census Bureau data for this sector.

In the monthly OBE series for manufacturing and wholesale and retail trade the SIC grouping is supplemented by subtotals for groups of industries primarily concerned with durable and with nondurable goods. Breakdowns for manufacturers' inventories by stages of fabrication, defined from the point of view of the individual respondent, are given for total manufacturing and the durable and nondurable goods subtotals in the OBE Industry Survey, and for individual industries in the periodic censuses and annual surveys of manufactures compiled by the Bureau of the Census. Detail by asset size of the reporting company is to be found in the Internal Revenue Service figures for all sectors and in the joint FTC-SEC reports for manufacturing. Geographic detail is supplied in the monthly wholesale and annual retail reports of the Census Bureau and in the Federal Reserve department-store figures. The periodic census of business supplies a number of additional breakdowns for wholesale and retail inventories, including data by legal form of organization.

The usefulness of these various kinds of detail in particular applications is obvious, and they by no means exhaust the list of useful possibilities. Decisions on the nature of the detail to be sought in a survey, however, must be based on considerations of feasibility as well as usefulness, and generally require a compromise between the two. What is feasible depends not only on the resources available for the program, but also on the nature of business records, and on what respondents are willing to report to statistical organizations.

The kinds of classifications and groupings of reported inventory data for a particular sector of the economy that can be developed by the compiling agency depend in large measure on (1) the scope of the organizational unit for which separate reports are collected—the company, the establishment (plant or store) or some other; and (2) the breakdowns that are obtained in the inventory data for each organizational unit. The second factor is relevant for those kinds of detail that require separating different parts of the inventory of individual respondents into different categories; for example, the stage of processing breakdown now used by the OBE and Census Bureau for manufacturing, for which the finished goods, work in process, and purchased materials of each respondent are reported and tabulated separately. Another possible breakdown of this type, not customarily made at present, would be separate reporting of inventories held against defense orders.

With regard to the first factor, the scope of the organizational unit for which reports are collected, the two most common types of reporting units in use at present are the establishment and the company (corporation or unincorporated business). All of the Census Bureau data listed in table 1 for manufacturing and trade are based on establishment figures, as are the OBE monthly data for trade and the Federal Reserve department-store figures. The company is the reporting unit for the Internal Revenue Service data, the SEC working-capital survey, the OBE industry survey data for manufacturing, and the joint FTC-SEC financial reports for manufacturing. (The various sets of "company" data are not wholly comparable, because of variations in the degree of consolidation of data for parent companies and partly wholly owned subsidiary companies.) Other possible reporting units, apart from the individual commodity, are the separate departments of an establishment; and the division, a unit intermediate in scope to the establishment and the company. Departmental reports are made at present only in connection with the department-store statistics, and divisional reports are not used for existing inventory series.

Significance of the reporting unit.—The scope of the organizational unit for which reports are collected has important implications for the meaning of figures tabulated in industry classifications, for the degree of detail in which industries can be usefully distinguished, and for the feasibility of special product groupings of inventory data supplementing the classifications along industry lines.

In the OBE industry survey data for manufacturing, for example, as in other company data for this sector, the companies covered are those primarily engaged in manufacturing, but the figures submitted include any subsidiary nonmanu-

facturing operations in which individual concerns may engage, such as mining and wholesale and retail trade. Companies with diversified manufacturing activities, whose individual operations if separately classified would fall in several industry groups, are classified as a whole in the industry group into which the largest part of their total activity falls, as indicated by the latest benchmark information.

Thus, the OBE industry survey data in total and for the various manufacturing industry groups include nonmanufacturing activity, to the extent that manufacturing companies also conduct operations outside of this sector. The converse of this is that manufacturing activities carried on by companies primarily engaged in other lines of endeavor are excluded. Moreover, to the extent that companies are diversified across manufacturing industry group lines, the figures for industry groups reflect an admixture of operations, "belonging" in the groups and in other industry groups. The transportation equipment industry group, for example, relates to all activities of companies primarily concerned with manufacturing the various types of transportation equipment, and certain specified components and parts. But it includes any activities of these companies connected with other types of goods, such as steel, refrigerators, and so forth. It excludes those activities connected with transportation equipment which are carried on by companies primarily concerned with other product types, and thus classified elsewhere.

Such company-based data for given manufacturing industries will often differ, in level and movement, from figures for the corresponding industries based on establishment reports, as in the Census Bureau's annual survey of manufactures, in which the different plants of individual companies are separately classified with their appropriate industries. Individual plants often are engaged in heterogeneous activities (with respect to industry definitions) but the degree of heterogeneity in establishment data is obviously markedly less than in company figures, many of which relate to a large number of plants of diverse types. The heterogeneity could be reduced further by collecting figures not for plants, but for individual departments of plants. It could not be wholly avoided, however, short of obtaining separate figures for each of the product types distinguished in the industry titles.

The scope of the organizational reporting unit affects not only the nature of the industry totals, but also the fineness with which meaningful industry data can be developed. If the categories were narrowed, from major groups of industries to subgroups and to individual industries, more and more overlapping in the figures would be expected because many organizations which operate in a single broad category conduct activities in a number of finer ones. At all levels, however, the more nearly homogeneous establishment figures involve less overlapping than company figures, and in many instances will permit meaningful detail where company figures may not.

The scope of the reporting unit has implications as well for types of detail other than those along industry lines. Greater homogeneity would be found in units of narrow scope not only with respect to industry definitions, but also with respect to categories defined in terms of the broad nature of the markets for the products. The segregation of data relating to producers' equipment and to consumer goods, for example, is increasingly facilitated as the reporting unit is narrowed.

In general, narrow reporting units are to be preferred to broad ones, because of the smaller amount of overlapping in the content of categories distinguished in the tabulations, and the greater flexibility in types of breakdowns that can be made in meaningful fashion. Other factors must also be considered, however. The use of broad reporting units is generally less burdensome on respondents and less costly to compiling agencies simply because of the smaller number of separate reports needed to attain any desired coverage. Information for narrow units may not be available in respondents' records, or its extraction may be inordinately costly.

Moreover, in terms of usefulness of the data, the reporting units used for other types of data to be employed together with inventory figures in analyses must be considered. Some types of information, such as business loans, profits, and other financial information, are customarily reported only for companies. For financial studies the need for comparability in the various sets of data may override any preference for categories sharply distinguished by type of product. Inventory data on an establishment basis may be preferred for analyses also involving data on employment, materials consumption and other inputs customarily reported on the same basis; and commodity detail may be

wanted where price and production information, usually available in terms of individual products, is involved. Data based on reporting units different from that desired in a particular connection may still be highly valuable as an approximation to the figures wanted, but the effect on the figures of the reporting basis must then be taken into account, and may often seriously obscure matters.

The standard industrial classification and market groupings.—The standard industrial classification, which was developed to help achieve uniformity and comparability in statistical tabulations, is widely used by government and private statistical organizations as a basis for organizing data on many business subjects. It is primarily intended as a classification for establishment statistics but, as noted, is also used at present for company figures. The goal of comparability is not wholly attained when data organized under the SIC are based variously on company and establishment reports. Nevertheless, standardization of industry definitions removes a major source of noncomparability in figures, and greatly facilitates the joint use of various sets of data in analysis. The existence of published manuals giving detailed descriptions of each industry makes unnecessary many inquiries and explanations of the content of various categories. Standardization of industry definitions has been one of the important statistical advances of recent decades, and the use of such classifications tends to simplify matters for data users and compilers alike.

The industry definitions of the SIC are generally drawn in terms of the products made (for manufacturing) or sold (for trade). The definitions conform to the actual structure of industry—that is, products typically made in the same plant or sold in the same store are included in the definitions of the same industry—to the extent permitted by the diversity among establishments in patterns of output or sales. Within the limits set by business structure, activities are organized into industries, subgroups and major groups according to several useful principles. For manufacturing, these include consideration of the types of materials used, the processes employed, and the end use of the products. For trade, end use is the main consideration; retail “kinds of business” are distinguished, for example, according to whether the products sold are mainly food, apparel, lumber and building materials, and so forth, except that usual trade designations are used for some types of stores, such as department and drug stores.

The particular definitions of industries specified in the SIC, at present or as they may be revised, are thus shaped both by the facts of business structure and the choices exercised by the technical committees charged with developing the classification. The choices inevitably represent compromises among the varied requirements for the many different sets of affected data, in their many applications. The price paid for the advantages of standardization may be some loss in appropriateness of the classification in specific cases.

However, in connection with any particular series, this problem may be avoided by tabulating the data both in terms of the SIC and in terms of a supplementary classification designed with specific ends in view. The sort of supplementary classification we have in mind as desirable for monthly inventory data, and for associated sales and orders statistics, was briefly outlined in the preceding section. Stocks at factories would be divided into goods on which fabrication had been completed and those to be further fabricated, either by the holder or by a subsequent purchaser. The finished goods total at factories would be further subdivided into the broad categories of producers' equipment, consumers' durables, and consumers' nondurables, with such further product differentiation within these categories as was feasible. Unfinished goods at factories would also be subdivided, at a minimum, into construction materials and materials to be further fabricated in factories. These categories for factory stocks would be matched by groupings of stocks held at wholesale and retail. The segregation of data for defense-related goods, both finished and unfinished, also would be highly desirable at times, as noted in the preceding section.

The problems of developing the “market” grouping of inventory and related data match the advantages in dimension. Ideally, the basic information used would relate to individual, homogenous commodities, subdivided by the nature of the ultimate purchaser; autos to be sold for business use would be grouped with producers' equipment, and those to be sold for household use with consumers' durables. When the basic data relate not to commodities, but to reporting units each concerned with a variety of commodities, the groupings are bound to be imprecise. Moreover, the problem of heterogeneity in the product content of

individual reports is compounded when comparable data are wanted for successive stages of distribution, because the patterns of heterogeneity often differ at these stages. Food manufacturers, for example, may also be concerned with fertilizers, and food retailers with soaps and kitchen utensils.

Such groupings, then, must be approximate. Whether they are nevertheless useful depends on how rough the degree of approximation is, and, as noted earlier, this in turn depends in large part on the scope of the reporting unit. Useful groupings of this sort probably are not feasible on the basis of company data, but would be increasingly facilitated as the scope of the reporting unit was narrowed.

SECTION V. SOME GENERAL FINDINGS AND RECOMMENDATIONS

In later sections our findings will be given for particular inventory statistics, mainly with respect to their coverage, reliability, and detail. In this section we take up certain issues relating to all or most of the available inventory series, and some general questions on the government's inventory statistics program viewed as a whole.

Instructions to respondents

The nature of information reported in response to a request for "inventories" may vary among respondents according to their particular accounting systems. Individual respondents often may also vary their reports by the inclusion or exclusion of items such as goods in transit, other goods owned but not held, or held but not owned, supplies and equipment not held for sale, and so forth; by the use of different valuation bases, where their records permit alternatives; by the use of different definitions of "finished goods," "goods in process," and "materials," where such detail by stage of fabrication is requested; and in other ways. There is substantial variation among surveys in the degree to which the kinds of information on inventories wanted from respondents is specified on the reporting forms or in accompanying instructions, and in the extent to which provision is made for respondents to enter qualifications or comments regarding the reported data. As a result, respondents may often be in the dark as to what is required, and the compiling agencies as to what is supplied. The usefulness of the figures inevitably suffers, and the facility with which modifications can be made, such as adjustments for price change or regroupings, is reduced.

An adequate set of instructions for reporting inventory information would note the major possible variations in records and in the types of information that can be extracted from given sets of records, and indicate the preferred treatment in the various circumstances. Respondents would be asked to supply sufficient information regarding the data entered on the forms for their proper interpretation. Such information need not be repeated in each report, but entered only when the data are changed or new circumstances arise. There are, of course, definite limits to the amount of explanatory material that can be solicited in connection with routine reports, and certain more detailed information, particularly regarding accounting practices, might better be collected in separate inquiries. Assistance in obtaining information on accounting practices might be sought from professional societies in the accounting field or other outside groups. The aid of such groups might be valuable also in developing standardized reporting procedures appropriate to the concepts employed in the various compilations and to the circumstances in individual industries.

1. We recommend that agencies compiling inventory statistics review the instructions now given to respondents and, where necessary, make them more detailed and specific with respect to (a) the nature of the figures desired, and (b) the information to be supplied by the respondent regarding the nature of the figures reported.

2. We recommend exploration of the possibilities of securing assistance from interested professional organizations in obtaining information on current accounting practices for inventories and in developing standards for reporting inventory information.

Speed of release

With inventory data, as with other significant information on current business, speed is of the essence. The faster figures can be made available, the more valuable they are. Policy decisions by business and government must be made in the present, and facts aid such decisions in proportion to their recency.

But figures cannot be reported by a respondent before they are known to him, nor can they be tabulated by statistical agencies before they are received. The

respondent needs time to prepare the information and communicate it to the compiler, and the compiler needs time to process the information and communicate it to the user. To know today what is happening today implies a forecast rather than a compilation. The statistician's "today" must always be historical; the most that can be hoped for is to make his history as recent as possible.

There are potential time savings in surveys at every point along the chain from events in the business world to summarized knowledge of them in the hands of users. The various types of time savings may be grouped into (1) those which carry a dollar price, (2) those which carry a price in terms of reliability, and (3) those which result from greater efficiency. There can be little debate about advantages of time savings in the last category; whether particular savings in the first two categories are worth the price is not always clear.

One or more days may be saved in a survey by arranging for telegraphic rather than mail reports, from all respondents or from the more distant ones. Other savings may be made by communicating with laggard reporters by telephone. These means, which involve additional expense, not only may have the direct effect of cutting communication time but also the desirable indirect effect of impressing on respondents the importance of rapid reporting and the need for avoiding unnecessary delays. The judicious use of money for speeding communication may thus yield heavy dividends in time, but after a point the gains may not be worth the price.

Time may be saved at more or less cost in reliability by closing out the compiling agency's "books" on the basis of fewer reports in hand, and by requesting estimates or preliminary figures from respondents in advance of their final reports. The compiling agency's book may be closed out at almost any time after reports begin to come in, with calculations made on the basis of reports already received. The earlier that closeout dates are set the earlier publication can occur; but the more rapid the closeouts the fewer reports in hand, and typically, the lower the degree of reliability in the published figures. Similarly, the dates at which respondents can submit reports are not necessarily tied rigidly to the times when they complete certain bookkeeping operations. Many respondents could make approximations of final figures with increasing assurance as more and more of the relevant pieces of information become available to them. But the earlier such approximations are required the less reliable they would tend to be.

The choice of closeout dates, and the extent to which approximate reports are encouraged, require a very delicate balancing of the advantages of speed against the disadvantages of potentially large revisions in the figures a month later. However, there often are possibilities of making important gains in time with small loss in reliability by developing carefully selected panels of respondents with whom special arrangements for rapid reports may be made; by detailed analysis of the relationships in data for typically early and late reporters, to improve the quality of estimates based on the former; and by exploration with important individual respondents of the possibilities of submitting good approximations in advance of their final figures.

One device that may be worth exploring for getting very early indications of inventory movements, outside of the formal tabulations, is the use of "flash" reports confined to directions of change from a selected group of respondents. This procedure has been used for inventories of purchased materials and other types of data, apparently with some success, by the National Association of Purchasing Agents. We have not had the opportunity to investigate the subject fully, but believe there is little doubt that directions of change can be reliably reported earlier than amounts. On the other hand, seasonal factors might often be the dominant determinant of directions of monthly change, particularly in industries where seasonal movements are customarily large, and the extent to which this would mask more significant developments is not wholly clear. We simply note, therefore, that the device may have possibilities for yielding useful early indications on inventory developments.

Time savings from improved efficiency may be sought both in the internal operations of the compiling agency and in the treatment given the inquiry by respondents. As to the latter, close working relationships between the agency and the respondents are necessary to maintain good will, clarify instructions, resolve reporting problems as they arise, and generally to prevent indifference and misunderstanding of the purposes of the program from interfering with the rapid submission of information. Aid in obtaining the active cooperation of respondents may usefully be enlisted from various business groups whose members use the data or who are otherwise aware of their importance.

The increasing use of electronic office equipment and other mechanical record-keeping devices may be expected to result in more rapid reporting of all sorts in the future, particularly for the larger organizations. Such equipment will also cut processing time for compiling agencies, and already is being employed in connection with a number of programs.

In sum, speed of release of figures is vital and there are many means possible for reducing the time lapse between events and the publication of statistical information regarding them. Not all such means are worth the cost, however, in terms of money or reduced reliability of the data.

3. We recommend that agencies compiling inventory statistics explore intensively all potential means of speeding publication of the figures and adopt those for which the gains in time are commensurate with money and other costs.

Published descriptions of series

No organization engaged in preparing statistics for public consumption should be charged with full responsibility for all of the uses that the public chooses to make of them. Data will be misinterpreted and misapplied by some users at some times regardless of any set of safeguards placed around them, short of nonrelease.

Agencies may be held responsible, however, for making reasonable efforts to minimize misuse of figures considered worthy of publication. Such efforts should include publication of clear and detailed explanations of the purposes of the compilation and the nature and limitations of the data, the methods employed, the nature and sources of various types of potential errors, and, to the extent possible, the approximate magnitudes of the potential errors. The relationships with other data should be clearly specified, as discussed below, and cautions included against various types of inappropriate applications. Such descriptions should be made readily available, preferably in the form of pamphlets also including back data; they should be kept up to date, including the addition of comments on historical comparability, as time and circumstance affect the nature of the compilation; and their availability should be noted in all current releases.

Very few of present inventory statistics programs meet these requirements. An excellent standard in many ways is provided by OBE's description of the inventory and other components of the gross national product statistics, included in the national income supplement to the survey of current business. For a number of other inventory series, however, it was found in preparing this report that published descriptive material was insufficient and in some instances obsolete.

4. We recommend that agencies compiling inventory statistics review their present descriptive material and, where necessary, modify it to provide, in accessible form, detailed descriptions of the purposes, nature, methods, limitations, potential errors, and appropriate applications of the data; that they revise the descriptions as frequently as necessary to keep them up to date; and that they refer to such descriptions in all current releases.

Reconciliations of data

In any set of statistics as diverse in purpose and diffuse in origin as present inventory data, there are bound to be similarities in captions associated with differences in content, and vice versa, which may perplex the user. To some extent this is unavoidable, given the variety in the possible nature and form of individual statistics and the subtlety of some of the variations. The column headings of table 1, on page 417, suggest some of the aspects of inventory data on which variation is possible, and the entries in the table indicate some of the differences that exist in available data. Often to understand the significance of certain relations among data on inventories or other subjects a user would need to acquire technical or empirical information beyond his capacities in patience and time.

Many differences among data, however, may be arbitrary or fortuitous, such as those resulting from differences in the industrial classification of a particular respondent. It is incumbent on compiling agencies to avoid such differences as far as possible. It is also incumbent on them to explain, as clearly and forcefully as they can, the intended differences between their data and others which resemble them in one or more respects. Such statements should include both descriptions of the differences in objectives and methods, and comments on the nature, direction, and magnitudes of the differences in results. Full statistical reconciliations of related series can be time consuming and often may ultimately be impossible to make precisely; but with a reasonable amount of effort useful

indications of the effects on series of specific differences in methods can usually be developed.

In this connection we note with approval the current efforts of the Internal Revenue Service and the Federal Trade and Securities and Exchange Commissions to develop uniform industrial classifications for companies reporting to these agencies, and the "enterprise-establishment statistics program" planned by the Bureau of the Census as part of the tabulation program for the 1954 censuses of manufactures, wholesale and retail business, and minerals industries. The latter will provide detailed information on the relations between company and establishment data as reported to and tabulated by the Census Bureau. It will also provide information on the relations of these Census Bureau data to inventory and other data, mainly financial data, reported on a company basis to the Internal Revenue Service and Securities and Exchange Commission. These programs represent real progress, but much more needs to be done in connection with various inventory programs by way of removing purposeless differences and clarifying in the descriptive material the nature and significance of the intended differences.

5. We recommend that agencies compiling related sets of inventory statistics work closely together to avoid differences in results not due to differences in purposes; and that they provide clear explanations in their descriptive material of the nature and significance of differences related to purposes, with as close an approach to full statistical reconciliation as is feasible without undue cost.

Presentation of current and back data

Current figures developed in programs involving inventory statistics are generally readily available to users at nominal cost or without charge. In some instances, however, subscribers to individual publications or mimeographed releases are not aware of the availability in other releases of related data compiled by the same organization. Moreover, difficulties are sometimes encountered by users in assembling back figures in their most recently revised form, particularly for monthly series.

The cost to statistical agencies of rationalizing the releases of current and back data for the convenience of users would generally be negligible in comparison with the advantages gained. The usefulness of otherwise excellent data may be greatly reduced if comparable time series can be put together by users only by consulting many releases and carefully comparing dates, captions, and footnotes, or perhaps by corresponding with the compiling agency.

6. We recommend that agencies compiling inventory statistics publish periodically lists of all releases on inventories or employ other devices to insure that users are familiar with all the information developed on the subject by the agency; and that agencies compiling monthly or quarterly figures make tabulations of back data readily available to users, preferably in pamphlets also including descriptive material.

Public-private relations

The advantages of close working relations between compiling agencies and respondents were noted earlier, as were the possibilities of inviting assistance from interested business groups in the effort to achieve active cooperation of respondents. There are other ways in which close collaboration of government and private groups may yield dividends to both in improved statistics.

Many inventory statistics, particularly for individual commodities, are compiled by trade associations. For the most part, government and private programs with respect to inventory figures do not conflict, and many of the privately produced data are used as source materials in developing government series. There is room, however, for more effective integration of inventory figures produced by public and private statistical agencies. The Government might well go further than it does at present in lending its resources and skills to private data compilers for improving their sample designs and compilation procedures; in providing firm annual data to which private monthly compilations of more limited coverage might be tied; and in exploiting privately produced data in its own compilations.

Where private groups lack the necessary facilities for compiling inventory and related figures of particular interest to them, they might often be willing to bear part or all of the cost of surveys conducted by government agencies. Such arrangements have been in effect for many years in connection with some Federal commodity statistics. By multiplying their number the fund of information available to business, government, and users generally may be broadened at minimum cost to the taxpayer.

There are a number of problems connected with private financing of Government statistical programs. One is that of determining the extent of public interest in particular statistics and therefore the appropriate distribution of costs as between Government and the interested business groups. While it may be possible to specify the public interest in general terms, in individual cases firm conclusions may be difficult to reach. Another problem results from the fact that the availability of data on stocks and related subjects at one stage of fabrication or distribution, in the absence of corresponding data at preceding or following stages, may put one category of business at a competitive disadvantage with another. These and other problems may interfere with the full exploitation of this means for adding to current inventory information. Nevertheless, active exploration by statistical agencies of possible business interest in undertaking or contributing to the financing of new statistical programs on inventories and related subjects would be very much worthwhile.

Because the Government would act as the compiling agency in this sort of arrangement, it is desirable that results released to any nongovernment group be made public. Arrangements under which the data developed are supplied only to business respondents and other Government agencies, and not to the public, are in our view difficult to justify except for reasons of national security. At worst, such procedures may make the Government party to furthering the competitive position of one business group at the expense of others. In any case, they involve withholding information of public interest, developed with the assistance of public bodies, from all except selected government and private groups.

7. We recommend that Government agencies compiling inventory statistics strive to integrate their efforts more closely with those of private statistical organizations engaged in similar work by offering technical advice and assistance, by undertaking to provide benchmark data for additional selected monthly series compiled privately, and by exploiting privately produced data in Government compilations to the maximum extent warranted by their nature and quality.

8. We recommend that the appropriate Government agencies actively explore the possibilities of partial or complete financing by private groups of new Government compilations of inventory and related information; that they undertake such compilations where arrangements can be developed which are agreeable to both parties and equitable to others whose interests are affected; and that results of such compilations—as well as other compilations—made available to anyone outside the Government be made simultaneously available to the general public, except where national security considerations are involved.

Coordination of inventory statistics

To the best of our knowledge this is the first occasion on which inventory statistics from all sources have been formally considered as a group. Occasional studies by ad hoc committees such as ours may be desirable, but if continuing improvements are to be made in the degree to which the data meet the needs it is important that the different programs be subject, more than in the past, to steady review and coordination from an overall point of view. The collection of inventory data is necessarily decentralized, and the nature of the various sets of data is and will inevitably be shaped to some extent by the nature of the various programs involving them. With the best will in the world individual, independent agencies can make only limited progress in coordinating their operations, particularly where inventory data collection may be rather incidental to their whole program. Strong, central leadership will thus be required if the various contributions are to be meshed effectively into an integrated and rational body of information on inventories arranged to meet the varied needs most effectively and at minimum cost.

9. We recommend that appropriate arrangements be made to provide the necessary strong leadership and guidance to the Government's work in the field of inventory data.

SECTION VI. FINDINGS AND RECOMMENDATIONS ON INVENTORY VALUE DATA

The various data now available on the value of inventories, as listed in table 1 and described in more detail in an appendix not yet completed, represent a tremendous advance over the situation of a few years ago. Before these series were developed business analysts seeking clues to current inventory developments were forced to rely on indirect evidence and on the scattered commodity

figures available. The present figures are of considerable value and, as the committee's survey indicates, are intensively used in analysis by people in a wide variety of public and private positions. The compilers are continually engaged in an effort to increase the usefulness of the figures, to the extent that available resources permit. However, considering the needs for inventory statistics, the inventory value data now available must be judged inadequate in a number of major respects. Further improvement, moreover, appears practicable along lines indicated in the recommendations made below.

Recognizing time limitations, we have emphasized those monthly and quarterly series that are most important for purposes of current business analysis. These are, specifically, the monthly data for manufacturing and trade inventories and the quarterly GNP figures on changes in business inventories. A number of findings and recommendations are given with regard to other data, however, at appropriate points in this section.

The OBE industry survey for manufacturing

When the industry survey was first established, in 1940, it was intended to provide an inexpensive means of filling a large gap in available monthly information on manufacturers' sales, orders, and inventories with reasonably reliable and reasonably prompt aggregate data, and only broad supporting detail. It might be said to have achieved this objective reasonably well—at least the return has been high relative to the cost. But the original objective is far too modest in terms of present needs. To meet adequately the purposes which manufacturers' inventory data should serve, and for which the present figures are being used with more or less success, more reliable data, better classifications, and greater detail are needed. Possibilities for improvement in the promptness with which the figures are made available, in the forms of presentation, and certain other matters affecting the industrial survey as well as other programs have already been discussed in section V.

Reliability of the industry survey.—As indicated earlier, questions of reliability are complex, and simple and straightforward quantitative measures of accuracy are not available. One method sometimes used to test the reliability of the industry survey inventory data is to compare the figures for total manufacturing and the various industry groups as published originally with those published in successive revisions, including the finally revised figures after benchmark adjustments to the data of the Internal Revenue Service's Statistics of Income. An illustrative comparison of this sort is made in table 2 for the figures for December 1951 and 1952. Figures for certain industry groups published at the time but no longer shown separately are consolidated in the table. The figures are unadjusted for seasonal variation and consequently do not reflect the influence of revisions in seasonal adjustment factors. The table shows a degree of instability in the figures that some will regard as substantial, others as rather moderate. For some industry groups revisions have been much smaller than for others.

The usefulness of this test as a basis for judging the reliability of the figures appears to be limited. Although the statistics of income data are used as benchmarks for adjusting the OBE series, they are inadequate as a standard of accuracy for the initial figures. Differences between the OBE figures before and after adjustment to statistics of income levels, particularly for the industry group detail, are due in part to differences in the degree of consolidation in company reports to the OBE and to the Internal Revenue Service. The extent of these differences varies from year to year, because of the options available to corporate taxpayers concerning consolidation in income-tax returns. Further differences result from the use by a substantial number of corporations of noncalendar fiscal years for tax purposes, so that the inventory figures in their income-tax returns do not in fact relate to the end of calendar years as is assumed in the comparison. Thus, while on balance the OBE figures may be improved by the adjustment to statistics of income data, the amount of the revision is not a good measure of the reliability of the original figures, particularly for certain industry groups.

Our conclusions on the reliability of the industry survey inventory data, while affected by the instability of the figures, are based largely on considerations of the nature and size of the sample of manufacturing companies reporting monthly data. This is not to imply that size of sample, in itself, is a good basis for judging reliability. As noted earlier, small samples, if properly designed and executed, may yield highly reliable figures, and rather large samples, if poorly designed or executed, may yield seriously erroneous results. However,

the coverage of the monthly reporting sample for the industry survey has always been considerably lower than that called for in the 1945 sampling plan, largely as a result of nonresponse, and the likelihood is great that the representation is inadequate, especially for individual groups. The OBE estimates that for the groupings shown in table 2 the coverage of the "final" monthly samples in a recent typical month ranged from 7 percent for lumber and furniture and 11 percent for "other nondurable goods" to 71 percent for transportation equipment and 81 percent for rubber. For all manufacturing, the coverage is about 46 percent for the final monthly figures and 33 percent for the preliminary estimates.

TABLE 2.—Successive OBE estimates of manufacturing inventories for selected months

[Millions of dollars; not adjusted for seasonal variation]

	December 1951 estimates published in—					December 1952 estimates published in—			
	January 1952 ¹	February 1952 ²	October 1952 ³	January 1954 ⁴	May 1955 ⁵	January 1953 ¹	February 1953 ²	January 1954 ⁴	May 1955 ⁵
All manufacturing industries.....	41,988	42,033	43,056	43,123	43,011	43,670	43,829	44,442	44,029
Durable-goods industries.....	22,438	22,445	22,650	22,689	22,815	23,930	24,045	24,367	24,428
Primary metal.....	2,812	2,790	2,825	2,904	2,789	3,236	3,135	3,263	3,119
Fabricated metal.....	2,367	2,351	2,330	2,331	2,397	2,354	2,340	2,352	2,379
Machinery.....	7,888	7,879	8,114	8,113	8,055	8,308	8,397	8,455	8,553
Transportation equipment.....	4,780	4,812	4,621	4,653	4,941	5,319	5,509	5,569	5,773
Lumber and furniture.....	1,616	1,643	1,648	1,635	1,671	1,676	1,614	1,650	1,667
Stone, clay, and glass.....	881	878	865	852	845	881	889	851	828
Other durable goods.....	2,094	2,091	2,249	2,201	2,117	2,157	2,162	2,227	2,109
Nondurable-goods industries.....	19,549	19,589	20,406	20,434	20,196	19,740	19,784	20,075	19,601
Food and beverage.....	4,870	4,882	5,014	5,220	5,117	4,771	4,786	5,181	5,005
Tobacco.....	1,863	1,858	1,782	1,793	1,826	1,797	1,800	1,838	1,860
Textile.....	2,813	2,785	3,015	2,925	2,960	2,633	2,627	2,568	2,490
Paper.....	1,004	1,006	987	1,053	1,025	992	1,002	1,080	987
Chemical.....	3,131	3,083	3,064	3,005	3,039	3,019	3,051	3,015	3,004
Petroleum and coal.....	2,515	2,535	2,600	2,395	2,462	2,743	2,727	2,569	2,554
Rubber.....	(⁶)	760	816	805	765	(⁶)	906	877	849
Other nondurable goods.....	2,640	2,679	3,128	3,241	3,002	2,933	2,875	2,941	2,852

¹ Preliminary.² Revised.³ After adjustment of series to 1949 Statistics of Income data.⁴ After adjustment of series to 1950 Statistics of Income data.⁵ After adjustment of series to 1951 and 1952 Statistics of Income data.⁶ Not available.

Source: U. S. Department of Commerce, Office of Business Economics,

The sampling plan calls for complete coverage of manufacturing companies with assets over \$5 million, but a sizable number of companies in this category, including some very large companies of outstanding importance in particular industries, do not report monthly. Among the smaller companies, for which a systematic sample was drawn, the response rate is much lower than for large concerns, with the consequence that the coverage in industry groups typified by small companies, such as apparel, leather, and printing and publishing, is much less than planned. (The publication of separate figures for these and certain other industry groups was recently discontinued.) Moreover, the net reduction over time in the number of companies participating monthly—from 3,100 when the postwar sample was introduced to 2,400 at present—suggests that the situation has become worse rather than better, although here again the size of sample is only a crude measure of representativeness.

It is now 10 years since the postwar sampling plan was drawn up, and both a new plan and a broad new effort to achieve a satisfactory response rate are needed.

The limits to what can be done by way of improving the sample are set by the resources available to the compiling agency for this work and the ability and willingness of the firms selected under the sampling plan to cooperate. These are not independent factors. In a voluntary survey the main reliance for improving the response rate must be on persuasion; companies will cooperate if they are convinced that the result is worth the cost and trouble to them.

Frequently the difficulty lies in the lack of adequate communication. Given the resources, the compiling agency can do much through correspondence and personal interview by way of explaining to potential respondents the nature and purposes of the survey, the uses to which it is put by many groups, including on occasion some departments of the respondent's company, and the importance of the company's participation to the quality of the results. Special reporting problems may be resolved, and approximate or partial reports arranged where full reports are too burdensome. Followups may be employed where reports are not filed because of oversight or inadvertence. The Department's staff, of course, uses these methods at present, but their ability to communicate with companies, particularly by visit, is severely limited by lack of funds.

10. We recommend that a new sample be developed for the monthly industry survey of the Office of Business Economics covering manufacturing inventories, sales, and orders. The new sample design should be adequate for the purposes discussed in this report and strenuous efforts should be made to achieve and maintain high response rates, including personal visits where necessary.

Earlier a reference was made to the fact that a substantial number of corporate income tax returns included in the Statistics of Income tabulations relate to noncalendar fiscal years. For manufacturing companies fully two-fifths of the returns, affecting about one-quarter of reported total assets, are for noncalendar periods. Table 3 gives the details by industry group for 1949, the most recent year for which such information is available in Statistics of Income. For petroleum and coal products, primary metals industries, motor vehicles, and a few other groups, more than 90 percent of the returns, by assets, relate to calendar years. However, less than half are for calendar years in the cases of apparel, and leather and leather products. The majority of groups fall somewhere in between.

The implications of this situation are disturbing, in view of the use of Statistics of Income data to set year-end levels of monthly inventory series and thus to measure changes from the end of one year to the end of another. Large differences may often exist in the levels of inventories at the ends of fiscal and calendar years, particularly where, as is frequently the case, the fiscal period selected is related to seasonal patterns of fluctuation in the industry. There may also be substantial differences in movement over fiscal- and calendar-year periods. Serious errors may thus be introduced in some industry group figures when the monthly data are adjusted to year-end data that in fact substantially relate to the ends of various other periods. As long as the use of Statistics of Income data for benchmark purposes is continued, this problem needs to be investigated and appropriate modifications should be made in adjustment procedures. A starting point for such investigation would be provided by tabulations by industry group of inventory data according to the fiscal-year periods to which the income-tax returns relate, similar to the tabulations published for total assets. A recommendation that such tabulations be made is included in the discussion of Internal Revenue Service data.

TABLE 3.—Percentages of total assets reported on corporate income tax returns tabulated in 1949 Statistics of Income by 12-month periods to which returns relate

Industry group	12-month periods ending—												
	July	August	September	October	November	December	January	February	March	April	May	June	All months
Manufacturing total.....	1.4	1.8	2.7	4.0	2.7	76.7	0.6	1.0	1.9	1.4	1.6	4.2	100.0
Beverages.....	12.1	11.5	4.8	2.7	2.9	55.5	.5	.4	3.2	3.0	.7	2.8	100.0
Food and kindred products.....	2.5	2.3	3.3	8.9	1.8	56.8	.5	4.9	3.8	2.5	5.8	6.9	100.0
Tobacco manufactures.....	.1	(¹)	(¹)	.1	(¹)	91.6	(¹)	(¹)	7.8	.1	.1	.2	100.0
Textile-mill products.....	1.3	4.4	7.3	5.3	7.3	58.8	1.0	.9	3.5	1.6	1.6	7.1	100.0
Apparel.....	4.3	2.6	2.7	5.5	11.4	46.3	5.4	2.6	3.1	3.3	3.4	9.4	100.0
Lumber and wood products.....	2.2	2.1	2.2	2.7	4.1	69.5	1.1	1.4	4.0	3.3	1.3	6.1	100.0
Furniture and fixtures.....	1.5	1.5	2.2	2.1	13.5	58.1	1.6	.8	3.5	3.8	3.7	7.9	100.0
Paper and allied products.....	.4	2.0	1.4	5.2	2.9	74.5	.3	.5	3.0	6.0	1.3	2.4	100.0
Printing and publishing.....	1.2	1.3	2.6	.8	.6	80.6	1.3	1.2	2.7	2.5	1.5	3.5	100.0
Chemicals and allied products.....	1.2	2.4	1.9	2.0	2.7	75.9	.2	.3	.9	.3	3.6	8.5	100.0
Petroleum and coal products.....	.1	.3	.4	.3	.1	97.5	.1	(¹)	.6	.1	.1	.4	100.0
Rubber products.....	.3	1.0	2.1	17.3	.4	73.7	.5	2.6	.2	.5	.1	1.3	100.0
Leather and products.....	1.2	1.9	2.1	16.5	23.8	35.2	1.4	1.2	1.9	2.3	2.9	9.4	100.0
Stone, clay, glass products.....	.3	.5	1.8	2.3	1.4	86.5	.8	.3	1.7	1.3	.6	2.5	100.0
Primary metal industries.....	.3	.4	1.1	.9	.8	90.7	.1	.3	.3	.2	.9	3.9	100.0
Fabricated metal products.....	3.2	1.5	2.2	2.6	3.0	75.3	.8	.9	1.5	1.4	1.1	6.7	100.0
Machinery (excluding electrical).....	1.5	1.3	4.2	16.4	4.3	62.7	.5	1.6	2.4	1.0	.7	3.5	100.0
Electrical machinery.....	.6	.5	1.2	.9	.5	89.8	.2	.6	1.1	1.4	1.4	1.8	100.0
Transportation equipment (excluding motor vehicles).....	1.2	.7	12.7	.9	7.1	67.7	.4	.3	.2	5.1	.3	3.4	100.0
Motor vehicles.....	.7	2.5	3.6	.4	.2	90.1	.1	.1	.2	.1	.1	1.8	100.0
Ordnance and accessories.....	2.3	.5	(¹)	(¹)	2.5	93.7	.1	.2	.2	.1	.1	.1	100.0
Instruments, etc.....	1.6	.3	2.2	.7	.9	85.9	1.4	.2	4.0	.9	.3	1.7	100.0
Miscellaneous (other).....	2.0	2.2	4.1	2.6	3.3	59.8	4.5	3.8	3.5	2.4	2.4	0.3	100.0

¹ Less than 0.05 percent.

NOTE.—Data cover all returns of corporations submitting balance sheets and are derived from Statistics of Income for 1949, pt. 2, tables on pp. 24-30 and 118-122.

11. In view of the very considerable proportion of inventories reported to the Internal Revenue Service on a basis other than the calendar year, we recommend review for each industry group of the advisability of using these data as benchmarks for the monthly industry survey and, where feasible and necessary, appropriate modification of adjustment procedures. We shall recommend below (No. 14) that the Census Bureau's annual survey of manufactures be used in place of Internal Revenue Service figures for annual benchmark purposes in the industry survey; the recommendation here is intended to apply only until such a change may be made.

Nature and amount of detail provided.—The two types of breakdowns now shown in the industry survey data are both highly valuable. For the inventory, sales, and orders figures separate figures are shown for most of the major groups of industries of the standard industrial classification, and totals of the industry-group figures are shown for durable and nondurable goods categories. The availability of roughly comparable industry group detail for inventories, shipments, and orders is of great value and importance. For inventories a further breakdown is provided, for all manufacturing and for durable and nondurable goods, by stage of processing—purchased materials, goods in process, and finished goods—defined from the respondents' point of view.

We believe, however, that to serve the needs of current business analysis better, three improvements are needed in the breakdowns provided: (1) a reduction in the amount of overlapping among the various manufacturing-industry groups and between manufacturing on the one hand and mining, trade, and other nonmanufacturing sectors on the other; (2) the development of finer industrial detail, with figures provided for selected subgroups and individual industries within industry groups; and (3) the development of a supplementary grouping, in terms of broad "market" categories: for "finished" goods (on which fabrication has been completed), subdivided into producers' equipment, consumers' durables and consumers' nondurables, and for unfinished goods, subdivided into construction materials and other, with finer breakdowns of these categories where feasible. All of these improvements are impeded by the present company basis of monthly reports and benchmark data.

With regard to the overlapping problem, the industry group figures are usually interpreted in current business analysis as indicating the levels and movements for inventories, sales, and orders associated with the product types described by the titles, such as "Food and beverages" and "Machinery." But the practice of classifying data for entire companies in single categories means that the category totals include any subsidiary activities of these companies not "belonging" in the categories, and exclude activities belonging there that are carried on by companies primarily engaged in other lines. The resulting disparity between the titles and the actual content of categories often makes the knowledgeable user uncertain as to the significance of the figures, and may lead the unwary to wrong conclusions.

With respect to the need for finer industrial detail, serious limitations are placed on analysis by the coarse level of detail now provided for inventories, sales, and orders. The industry groups in most instances include a broad variety of products. The group for machinery, for example, is defined to include various types of producers' equipment, consumers' durable goods, and materials and parts for both. The chemicals group includes basic industrial chemicals of all sorts, materials such as plastics, synthetic fibers, paints and fertilizers, and finished consumers' goods such as drugs and medicines, soap and synthetic detergents, and toilet preparations. It is valuable, of course, to have the various industry groups distinguished from one another, as is done for most groups at present. Selective finer detail, however, would contribute importantly both to the understanding of the significance of movements in the group totals and to the information available for analyzing particular industry developments.

Such finer detail should not necessarily be sought at once, and in the same degree, in all lines of manufacture. What is needed is the separation of industries or combinations of industries of markedly different characteristics within group, and the development of separate data for industries of great individual importance. Progressive improvements in these respects might be made over time, particularly as the samples are improved. But finer detail generally cannot be developed from company data even when samples are large and representative except at the price of increasing the degree of overlapping, often to the point where the figures may be seriously misleading.

The usefulness for analysis of the inventory figures by stage of processing is also hampered by lack of detail. These figures are calculated at the industry

group level but are published only for the durable and nondurable group sub-totals and all manufacturing because of unreliability in the stage of processing detail for industry groups. A special problem here is that many companies report only total inventories without detail by stage. Improvements in the reliability of the stage detail at all levels should follow from improvements in the sample, and, as noted below, may be facilitated by a change in the benchmark. To an important extent, however, improved stage data will depend on improved reporting, and it may be possible to improve reporting in this respect only gradually through continuing negotiation with respondents.

The advantages of the supplementary market grouping were discussed in section III. The feasibility of developing groupings for finished goods in terms of producers' equipment, consumers' durables, and consumers' nondurables, for unfinished goods in terms of construction materials and other, and for various finer subdivisions of these broad categories is, of course, closely related to the feasibility of developing finer industry detail for its own sake; separate data for many individual industries or subgroups, if available, could be readily classified into one or another of the market categories. The problems are not wholly equivalent, however, because many individual industries are defined in the SIC to include a set of products which individually would fall in different market categories. This is often the case, for example, with respect to producers' equipment and consumers' durables. Both trucks and passenger cars are defined as products of the motor-vehicle industry; household, commercial, and industrial refrigeration equipment and air-conditioning apparatus are all classified in a single industry; household and industrial radio and television receivers, as well as transmitters, are included in one industry; and similarly with a number of other products. To the extent that these definitions reflect typical patterns of activity in individual organizational units—rather than decisions made in preparing the SIC—development of market groupings will entail considerably greater difficulties than development of finer detail along industry lines.

Only detailed investigation can indicate the extent to which this type of breakdown is now feasible, or may become so later, and the degrees to which narrower product lines might be differentiated within the broad market categories described. In any case, it is clear that progress toward such groupings is inhibited at the outset by the use of companywide reports.

Special problems may also be anticipated with segregating data for defense-related goods. Large amounts of ordnance and other uniquely military items are typically made in the same plants as producers' equipment, and often from similar component parts and materials. Moreover, many goods are purchased by the military which are similar to or identical with civilian goods, and often are made alongside their civilian counterparts, with orders sometimes filled from common stocks. The regular segregation of inventory, sales, and orders data for defense-related goods would thus require breakdowns in the data for individual reporting units, and particularly for inventories, these would often be difficult for reporters to make. Problems would be encountered also in connection with subcontracts, for subcontractors are not always aware of the nature of the final products into which their output is to be embodied. The segregation of data for defense-related goods is probably not feasible on a routine basis, although it may be possible for compiling agencies periodically to make useful rough estimates partly on the basis of data from other sources, including the Department of Defense.

In financial analyses figures based on company reports are often preferred for comparability with related data. In our view, however, other needs for current business analysis should here take precedence over those of financial studies both because, as we have found, they are the major interest of most users of the data, and because the needs for financial analysis are otherwise served (although not on a monthly basis and not for unincorporated enterprises) by the FTC-SEC quarterly financial reports. The needs of current business analysis for less overlapping in the industry detail, for finer industry detail, and for supplementary groupings would argue for abandoning the company reporting unit in favor of a narrower reporting unit, both for current monthly reports and benchmark data.

However, the arguments in favor of company reports, at least for monthly data, are impressive. Company reports are simpler and less expensive for respondents to file than reports for narrower organizational units such as the plant. Simplicity in reporting requirements is of particular importance in a voluntary program, such as the industry survey, which is dependent for its success on the cooperation of respondents. Any substantial increase in the

burden on reporters is likely to lead to some withdrawals, and vigorous efforts to increase the usefulness of the figures by obtaining more detailed information may result in a reduction in the response rate and in a possible net loss in usefulness. Also, elaborate reports are more time consuming and expensive for the compiling agency to process; but increases in costs and delays in publication are likely to be only nominal over a rather broad range in elaboration of detail, particularly if the degree of mechanization in processing can be increased.

The need for improvements in published detail in the industry survey must be reconciled with the need for simplicity in the reporting requirements. We believe that substantial improvements in the detail are possible, along the several lines described earlier, without seriously endangering the response rate or delaying release of the figures. This may be accomplished through two devices: (1) Requesting additional monthly detail only from those larger manufacturing companies that conduct substantial operations in diverse fields, and adapting the type of detail requested from each to forms that they can readily supply; and (2) replacing the Statistics of Income figures as a source of benchmark data with the figures of the Census Bureau's annual survey of manufacturers. These two devices are elaborated below.

Proposed requests for additional monthly detail.—Information on the nature and extent of company diversification, in the aggregate, will be developed by the Census Bureau in an enterprise-establishment statistics program being planned as part of the tabulation program for the 1954 censuses of manufactures, business, and minerals industries. This study is not yet available, but it is clear that the amount of diversification is less in some lines of manufacturing than in others. Most of the important apparel manufacturing companies, for example, appear to confine their operations mainly to the production of apparel, whereas heterogeneity in product type is characteristic of many large companies in the metal-fabricating area. To some extent, then, the problem can be isolated in terms of lines of activity.

The problem can be further reduced by concentrating only on large companies, on the grounds that the smaller ones, while important in the aggregate, probably would not have sufficiently uniform patterns of diversification to make a significant difference in the movements of the monthly figures for individual categories. Finally, while many large companies may do some business in many lines, the activities of most of them would be heavily concentrated in no more than a few lines, and their participation in other areas could be ignored for purposes of monthly inventory statistics.

The number of companies from which detailed reports would be needed would depend on the actual patterns of diversification, the particular list of categories for which separate detail is attempted, and the degree of imprecision in the tabulated data that is deemed tolerable. All of these factors can be determined only by studies which we are not in a position to make. We would hazard the guess, however, that great increases in the usefulness of the figures would be possible now on the basis of more detailed reports from about 300 companies. This might be considered a minimum program; the further it is found feasible to go in the direction of more detailed monthly reports, the better. But reports from this number should make possible the exclusion of a large part of the nonmanufacturing activity now included, a reduction in the amount of overlapping in the industry group figures, and the development of finer industrial detail. They should also facilitate the development of the supplementary market grouping.

The kinds of breakdowns in the monthly reports that individual companies can readily make will, of course, determine just how far these improvements can be carried out. In many instances the figures now reported to the OBE are based on central-office consolidations of information flowing in from various corporate divisions and plants. The burden on the respondent of supplying certain subtotals or individual figures used in the consolidation, say, for various divisions of the company, would often be negligible. In other cases, however, the kinds of detail going into the consolidations would not correspond closely with those desired. The facts of the situation can be determined only by discussion with individual companies, and it is likely that any tentative decisions on detail to be developed would need to be modified on the basis of negotiations.

Proposed change in benchmark.—The Census Bureau's annual survey of manufacturers resembles Statistics of Income in providing annual figures on manufacturers' inventories and shipments, but not on orders. It is, in our view, superior to statistic of income as a source of benchmark information for the

monthly industry survey in a number of important respects. Use of the annual survey of manufacturers for benchmark purposes in the monthly industry survey would go far to facilitate the needed improvements in detail, and would have other advantages.

Perhaps most important, the annual survey figures, based on plant rather than company reports, do not involve much of the overlapping between manufacturing and nonmanufacturing and among the various manufacturing industry groups that occurs in the Internal Revenue Service's company-based data. Moreover, the published tables include figures for several hundred individual industries, as compared with the figures for industry groups (and unpublished figures for subgroups) tabulated by the Internal Revenue Service. This annual survey industry detail can be used to set year-end levels for each of the categories to be separately developed monthly, with the coarser monthly reports used for interpolation between the benchmarks for past year ends and for current extrapolations. The effect of the compromises necessary in monthly reporting would thus be largely erased in the picture of levels and longer term changes.

The superiority of the annual survey figures as benchmarks lies also in their regular coverage of unincorporated as well as corporate business, and in their inclusion of a smaller proportion of data reported on a noncalendar fiscal-year basis. Historically, the Internal Revenue Service has tabulated inventory figures only for corporate business with any degree of regularity, and estimates of annual levels for unincorporated business in the industry survey have necessarily been based on uncertain extrapolations over long periods. Even if annual tabulations of inventory figures for unincorporated business were to be made available in Statistics of Income, the incomplete reporting of these data on income-tax returns, particularly for sole proprietorships, would probably result in lower reliability than in the annual survey figures. The data in both programs are based to some degree on noncalendar fiscal-year reports, but these are less important in the annual survey data because of the Census Bureau's efforts to obtain calendar-year estimates from companies using fiscal accounting periods.

Another important advantage of the annual survey figures is that they typically are available sooner than the Statistics of Income data, at present and also under contemplated schedules for both programs. The more rapid release of the annual survey figures not only will permit earlier checks on levels than is possible with Internal Revenue data—and more refined checks, because of the greater detail—but also should result in a reduced frequency of revision for individual monthly figures. One of the most widespread complaints voiced in our survey concerned these revisions. Benchmark adjustments ordinarily affect all figures since the date to which the benchmarks apply, and thus the shorter the time span the fewer the monthly figures involved in each revision.

The annual survey also provides inventory data, for individual industries, by stage of processing, whereas the Statistics of Income tabulations do not. The fact that benchmark checks not possible at present could be made with annual survey data for inventories by stage would represent a major gain. Moreover, the availability of annual figures by stage for individual industries may facilitate monthly estimates for respondents who do not report such data, and may permit publication of stage of processing figures in finer industrial detail than the present levels of total manufacturing and durable and nondurable goods.

Finally, the establishment basis of reporting used in the annual survey of manufactures is also used in the Census Bureau reports underlying the monthly OBE data for wholesale and retail trade. This consistency is desirable, especially since the figures for the three sectors are added together monthly by the OBE. When data for manufacturing companies are combined with data for trade establishments, there are possibilities of both double counting and omission.

Difficulties of this sort are avoided at present in connection with manufacturers' sales branches, an outstanding case of potential double counting, because such sales branches, along with other categories of nonmerchant wholesalers, are not covered by the Census Bureau's wholesale trade figures, used by the OBE in developing its wholesale trade estimates. But there is no assurance that all such branches are included in the company-based data for manufacturing, reported to the OBE, as is assumed in the present procedure, and double counting may occur for other categories of trade, such as retail operations carried on by some manufacturing companies. Use of data reported on an establishment basis for benchmarks in the manufacturing sector would thus be an improvement; the loss of coverage of manufacturers' sales branches now covered in the manufacturing-company figures could be made up in a survey of nonmerchant wholesalers, a recommendation for which is included later in this section.

There is some danger, in developing establishment data separately for manufacturers and wholesalers, of omitting stocks held in company warehouses and elsewhere which may "fall between" surveys of the two sectors. Information on the importance of these categories, and the bases for avoiding their omission, will be forthcoming in connection with the 1954 censuses.

Some implications of the proposals.—The two changes proposed—obtaining detail in selected monthly corporate reports and tying the monthly figures to the annual survey benchmarks—would have a number of consequences for the nature and meaning of the figures and for the comparability of the inventory data with information on orders and sales. Because of the plant-reporting basis of the annual survey, the shipments figures compiled for manufacturing industries include more duplication than do the Statistics of Income sales data. The annual survey figures include shipments from one plant of a company to another, many of which would be omitted in company reports filed with the Internal Revenue Service because they are intracompany transfers. But added duplication is not likely to be a serious disadvantage in view of the large amount of duplication already existing in the present intercompany sales data as a result of sales by some manufacturing companies to others.

The inventory figures by stage of processing would also be affected by the proposed change. In moving from company data to more detailed figures, sequential (as well as parallel) processing operations of a company often would be covered in separate reports. The greater the extent to which sequential operations are split up the larger the proportion of stocks that would be reported as "materials" and "finished goods" and the smaller the proportion reported as "in process." Consequently, obtaining more detailed monthly reports and use of the plant-based data of the annual survey for benchmarks would change somewhat the relative size of the three categories in the stage of processing detail. For the sake of comparability the same basis should be used for defining shipments and finished goods inventories, and this is achieved in the proposed arrangement. It might be noted, incidentally, that in present monthly reports to the OBE many companies probably do not hold strictly to a net company basis in reporting shipments and inventories by stage, but simply add up figures that would be reported separately under the proposed arrangement.

The development of orders figures at present on a basis comparable with the shipments data involves complex problems, resulting from variations in the types of records kept on new and unfilled orders, and from the absence of records on one or both subjects in some cases. In some industries backlogs are rarely maintained, and the custom is to fill orders immediately on receipt. In the industry survey unfilled orders are assumed to be zero and new orders are taken as equal to shipments for a number of industry groups, mainly in the nondurable goods area, where these practices are typical.

The proposed changes in the industry survey are likely to entail some further difficulties with orders data, insofar as sequential processing stages are split up. When output of one unit of a company is largely consumed by another unit; "orders" received by the former may be difficult to ascertain. Even if orders were specifically reported, they might follow a different logic from what would apply in a nonintegrated company. This difficulty, although awkward, does not seem critical. The current Canadian practice is to give sales figures separately for respondents that do and do not report orders. Alternatively, new orders may be taken as equal to shipments in these cases also.

Whatever progress can be made by the two proposed devices in the direction of reducing overlapping and developing finer industry detail will be to the good. With respect to the supplementary market grouping in terms of producers' equipment, consumers' durables, and so forth, at best this breakdown will be rough, particularly if attempted for product lines within the broader categories. While even rough breakdowns can have considerable analytical value, it is not at all certain that a sufficiently good breakdown can be made by the methods described to warrant regular publication at the present time.

The question of when approximations of needed information are so poor as to be more harmful than helpful is a delicate and difficult one, and we are not in a position to offer a judgment in this case. For example, as noted earlier, industry data tabulated in terms of the SIC involve a substantial commingling of consumers' durables with producers' equipment in individual industries. It may well be that in many instances effective separation could be made on an annual basis by retabulations of the annual survey data for establishments in each affected industry into subindustries for the two kinds of goods. The degree to which this can be done, and the degree to which corresponding, if

rougher, separations can be made monthly by the larger companies, can be determined only by study. We believe the objective is sufficiently important to warrant persistent study.

Conclusions on detail.—Our conclusions regarding the detail provided in the monthly OBE industry survey may be summarized as follows: While the detail provided at present is useful and important, it is deficient for current business analysis because of overlapping among the various manufacturing industry groups and with nonmanufacturing, and because it is provided only at broad levels. Moreover, the present detail would be usefully supplemented by a market grouping. Improvement in all three respects is impeded by the company basis of the present program. While simplicity in reporting requirements is important, and efforts to improve the detail should not be pushed to the point where they result in large numbers of withdrawals from the program, we believe substantial improvements can be made without this consequence. Finally, comparability in the inventory, sales, and orders data is of great importance and every effort should be made to maintain or improve it.

12. We recommend with respect to the industry survey that overlapping between manufacturing and nonmanufacturing and among manufacturing industry groups be reduced; that fine detail for significant subgroups and industries be developed; and that efforts be made to develop a "market" grouping of the data supplementary to the industry grouping. The market grouping should be in terms of the following categories, with such further product differentiation within categories as may prove feasible; finished manufactured goods, subdivided into producers' equipment, consumers' durable goods, and consumers' nondurable goods; and unfinished manufactured goods, subdivided into construction materials and unfinished goods destined for further manufacture. Recommendations Nos. 13 and 14 are made to help achieve these ends, which will also be served by recommendation No. 10 above.

13. We recommend that negotiations be conducted with selected manufacturing companies chosen by prior analysis of diversification in company activities, with a view to determining the types of detail they can readily provide on a monthly basis. Arrangements should be made for the regular submission of such detail where it will facilitate attainment of the stated objectives.

14. We recommend that the data of the Census Bureau's Annual Survey of Manufacturers, rather than of the Internal Revenue Service's Statistics of Income, be employed for annual benchmark purposes in the industry survey. This change in the source of benchmark information is preferred to the modification in adjustment procedures recommended in No. 11 above; the earlier recommendation is intended to have effect only as long as the use of Internal Revenue Service data may be continued.

15. We recommend that studies be undertaken of means for estimating the proportion of manufacturers' inventories and associated data that are defense related. If feasible, estimates should be published at times when high levels or changes in level of defense activity make such information particularly significant.

The FTC-SEC quarterly financial reports

We have not given detailed consideration to the inventory and other data compiled quarterly in the joint FTC-SEC reporting program. It is our view, however, that this program does not involve duplication of effort with the OBE monthly industry survey in any important sense. In the financial program the inventory and sales data are presented, along with many other items, in the context of income and balance sheet statements for manufacturing companies. These data, taken together, are valuable in studies of business finance broadly different in nature from the types of current business analysis for which the monthly industry survey figures on inventories, sales, and orders are best suited. Both programs have important independent usefulness.

OBE and Census series on wholesalers' inventories

The monthly data on wholesalers' inventories published by the OBE are based in large part on monthly figures for merchant wholesalers collected by the Census Bureau. The Census merchant-wholesaler figures are supplemented in the OBE calculations by various data from other sources relating to nonmerchant wholesalers other than manufacturers' sales branches, such as petroleum jobber bulk stations and farm assemblers. Manufacturers' sales branches are assumed by the OBE to be covered in the manufacturing company reports made in connection with the industry survey. A limited amount of detail by kind of wholesale business, formerly published by OBE, was temporarily dropped in January of this

year, and the wholesale figures are now shown only for the total and durable and nondurable subtotals.

The census figures for merchant wholesalers used by the OBE are also published by the Census Bureau, in the monthly wholesale trade report. The data are shown in detail by kind of business, but in the form of percentage changes rather than dollar totals. Only one annual survey, for 1953, has been conducted by the Census Bureau for merchant wholesalers corresponding to those it makes regularly for manufacturers and retail trade. There is no present provision for future annual coverage of the wholesale sector, other than in the periodic censuses of business.

At the present time the monthly Census Bureau figures are undergoing comprehensive redevelopment, associated with the introduction of an improved sample in 1954, and, shortly will be published in the form of dollar aggregates. While a number of problems have been encountered in sample design and execution, the new series for merchant wholesalers should represent a substantial improvement over present data.

We believe that several modifications should be made in these programs for wholesalers' inventories, two of which are related to the recommendations made for the manufacturing sector.

The limitation of the Census Bureau survey to merchant wholesalers, and the consequent necessity for OBE to use various miscellaneous sources of data for nonmerchant wholesalers, results in substantially less adequate representation for the nonmerchant wholesalers presently covered in the OBE wholesale figures. Moreover, the inclusion of manufacturers' sales branches in the manufacturing sector, forced by the present company basis of reporting for manufacturing, as previously noted, is undesirable.

16. We recommend an expansion of the scope of the inventory data collected in the Census Bureau's monthly wholesale trade report to include manufacturers' sales branches and other nonmerchant wholesalers, in addition to the presently covered merchant wholesalers.

The market grouping recommended for stocks of finished products at factories should be matched as far as possible by a corresponding grouping at the wholesale level.

17. We recommend that the "kind of business" categories of the standard industrial classification, such as "dry goods," "drugs," and "paper" wholesalers, be continued as one basis for classifying wholesale inventory and related data, but that when feasible this be supplemented by a grouping of the figures for wholesalers into "market" categories corresponding to those described for manufacturers. (See recommendation No. 12.)

More reliable figures can be procured in an annual survey, covering year-end inventories, than monthly, for several reasons, including the use of larger samples in once-a-year inquiries than are feasible monthly. An annual wholesale trade program, integrated with the monthly survey, is thus important for maintaining the quality of the monthly figures.

18. We recommend that a regular annual survey of wholesale trade be instituted, similar to the one conducted by the Census Bureau for 1953 but covering nonmerchant as well as merchant wholesalers.

OBE and Census series on retail inventories

The OBE monthly data for retail inventories are published with subtotals for durable and nondurable goods stores and for a limited number of "kind of business" categories. The series are developed from year-end figures collected in the Census Bureau's annual retail trade survey and from scattered monthly source materials. The monthly data used by OBE include figures for inventories at chainstores (other than chain department stores) collected but not published in the Census Bureau's monthly retail trade survey, and Federal Reserve figures for department stores. Altogether, chains and department stores account for about one-fifth of retail inventories. Although some monthly data, of varying degrees of relevance and reliability, are used for other categories of stores, the main reliance for estimating inventories of independent retailers is placed on monthly inventory changes for chainstores. The procedure implies the highly questionable assumption that chain and independent store inventories for various equivalent kinds of business move together.

The OBE estimates of monthly retail inventories represent an effective exploitation of the information that is available, and are probably as good as any that could be produced without new primary data. But the basis of information underlying these estimates is so frail as to make the series hardly more than a

makeshift plug for what continues to be a major gap in available data. A new program of direct monthly reports for inventories of independent retailers is badly needed.

The retail field is one where it is peculiarly difficult to obtain reliable monthly inventory information because of the importance of small concerns, many of which have only limited records. Recent explorations by the Census Bureau indicate, however, that useful figures on inventories of independent retailers can be developed in a direct-reporting program for a selected sample of stores. Some such reports will have to be based on projections of year-end inventory figures made by the retailer from current sales, delivery, and gross-margin data, and others will be based on "judgment" estimates, with probably only a minority of the respondents reporting from perpetual inventory records or actual checks of their shelves. Rather intensive developmental work, largely in the form of personal discussion with individual retailers of alternative means of approximating useful figures, will be required in many instances before reports will be forthcoming.

At best, inventory figures for independent retailers will continue to be inferior to those for sectors of the economy characterized by larger organizations with more formal and elaborate records. There is little doubt, however, that a direct-reporting program for them would contribute substantially to improvements in retail inventory data. The cost of such a program, particularly in its early stages, will be affected by the intensive developmental work required. On a continuing basis the program might reasonably be a part of the current retail-trade survey, and the additional cost for inventory figures need not be high.

19. We recommend that the scope of the Census Bureau's monthly retail-trade report, which now covers sales of all types of stores and inventories of chain-stores, be expanded to provide inventory data for independent retail stores other than department stores.

As indicated earlier, it would be desirable for the "kind of business" grouping of retail inventory and sales figures to be supplemented by a grouping in terms of market categories corresponding to those recommended for manufacturing and wholesale trade. In this connection it would be useful to have the Federal Reserve department-store data, which are now entered as a total under non-durable-goods stores by the OBE, distributed among the several market categories distinguished. The supplementary Federal Reserve series for department-store sales and stocks "by major departments" could be used as a basis for estimating the appropriate distributions.

20. We recommend that the "kind of business" categories of the standard industrial classification, such as "grocery stores," "department stores," and "lumber yards," be continued as one basis for classifying retail inventory and related data, but that when feasible this be supplemented by a grouping of the figures for retailers into "market" categories corresponding to those described for manufacturers. (See recommendation No. 12.) In this supplementary grouping, data for department stores should be distributed to the appropriate market categories.

Federal Reserve department-store stocks series

Department stores, which handle about 6 percent of all retail trade, deal in a wide variety of merchandise, are large units, and keep excellent records. Since 1920 the Federal Reserve System has collected monthly information on department-store stocks and sales from stores doing a large proportion of the business. The figures have been published in the form of national and regional (Federal Reserve district) indexes, both unadjusted and adjusted for seasonal variation. Currently, about 1,050 stores, accounting for approximately 70 percent of estimated total department-store stocks, report stocks data monthly. For the 12 districts coverage for stocks ranges from about 60 to 85 percent.

Since 1940 unadjusted dollar aggregates have also been published on stocks, sales, receipts, outstanding orders and new orders for a smaller group of stores. Coverage is about 50 percent rather than 70 percent, largely because no reports are obtained from the larger national chains. For a somewhat different group of independent stores, detailed national information has been compiled since 1941 on stocks and sales for seven major merchandise categories and for many individual departments. Also, various data are published for a number of individual cities and metropolitan areas.

The national department-store figures are used intensively in general business analysis, and the district figures are used for this purpose to a more limited extent. Local data are used primarily by store managements and by analysts concerned with local market conditions.

We have not undertaken to study the technical methods used in compilation of the department-store series, partly because of time limitations and partly because a Federal Reserve System committee is now engaged in such a study. We believe, however, that the usefulness of the department-store statistics program for general business analysis can be increased by collection of some additional data on orders and by extension of seasonal adjustments to certain series not now adjusted.

Statistics on orders outstanding and new orders are highly useful in interpreting changes in stocks. The presently compiled data on total outstanding and new orders of department stores have been useful in providing information on total commitments for merchandise and some indication of changes in forward buying, and have thus supplied clues of the expectations of merchants regarding future business. They have also been valuable in throwing light on merchants' expectations about delivery conditions and price changes in the markets in which they buy.

Since the relations among sales, orders, and stocks may differ substantially among the various departments of department stores, changes in these relations for the store as a whole can result from shifts in the relative importance of the different departments, as well as from changes within individual departments. For this reason, and also to supply important information by commodity lines, we believe that related figures for sales, stocks, and outstanding orders should be obtained for a limited number of selected departments or groups of departments.

21. We recommend that the Federal Reserve statistics for department stores by major department, which now cover stocks and sales, be expanded to include data on outstanding orders for selected departments or groups of departments of general analytical interest.

Departmental data provide the closest approximation to multiple commodity information for retail stocks and sales now available. Retail stores almost invariably carry a more complex group of commodities than do comparable departments of department stores. Consequently, any effort to determine retail sales or stocks corresponding to particular industries must for most commodities put chief reliance on the departmental data. Interpretation of the movement shown by these departmental series would be facilitated by seasonal adjustment of the data. We believe that for major departments, at least, this should be undertaken.

22. We recommend that, for selected departments or groups of departments of general analytical interest, the Federal Reserve department-store data on sales and stocks by department, and the data (proposed in recommendation No. 21 above) on outstanding orders by department, be published on a seasonally adjusted basis, as well as without seasonal adjustment.

Data for other sectors of the economy

For sectors other than manufacturing and trade there is no separate aggregate information on inventories of less than annual frequency. Few or no monthly and quarterly data are available for mining, construction, utilities, and service industries, other than selected physical quantity series. Estimates for these sectors, more or less crude in nature, are, of course, embodied in the quarterly GNP series on change in business inventories and in the quarterly SEC working-capital survey for corporations. Annual data for corporate businesses in all sectors are available in the Internal Revenue Service compilations, and annual figures for farm inventories are compiled by the Department of Agriculture.

These sectors, outside of agriculture, together account for about 7 percent of business inventories, and the virtual absence of current inventory data for them constitutes a gap in available information. This gap has consequences both directly in terms of the needs for the missing data, and indirectly for the contributions such data would make to the quality of the comprehensive GNP and working-capital figures. We do not feel, however, that we are sufficiently informed either as to the seriousness of the lack of aggregate monthly or quarterly data on inventories for these various sectors or as to the costs that would be entailed in providing current data for each of the sectors to make specific recommendations for coverage. There are a number of important problems—such as the feasibility of collecting information on construction contractors' stocks of building materials—which require investigation.

23. We recommend that further studies be made by an appropriate agency of the needs for, and the costs of, current statistics on value of inventories for sectors other than manufacturing and trade.

Internal Revenue Service data

The figures drawn from income-tax returns and published annually by the Internal Revenue Service in Statistics of Income are extensively used as benchmarks for current series of various types, and as sources of periodic information on subjects not covered currently. For inventories the Statistics of Income data are used as benchmarks for the SEC quarterly working-capital survey as well as for the monthly OBE series for manufacturing. They enter into the calculation of the GNP inventory change estimates both indirectly, through the use of these series, and also directly.

The Statistics of Income data are thus of great value as a source of information on inventories and other subjects. However, definite limits to improvements in them for statistical purposes are set by the fact that the data are by-products of Federal tax collection, and the objectives of economic statistics must remain secondary to those of tax administration.

Within these limits important improvements are nevertheless possible. Historically, there have been two broad difficulties affecting the usefulness of the Statistics of Income data for purposes for which data based on companywide reports are wanted: the very long lags in publication, and the relatively infrequent and limited tabulations of data for unincorporated businesses. Substantial improvements in both respects have recently been made or are planned. The Service is to be commended for the progress that has been made in speeding up the tabulations, and its proposed further efforts in this direction are worthy of encouragement and support.

Present plans call for tabulation of selected data for unincorporated businesses in odd-numbered years. For alternate years, therefore, data for all business will be available, by legal form of organization, for the items included.

24. We recommend that beginning-of-year and end-of-year inventory figures be included regularly by the Internal Revenue Service in the planned alternate-year tabulations of Statistics of Income data for noncorporate business. This would provide comprehensive annual inventory information which would be of particular value for those sectors of the economy not covered in other annual programs, and would also be of value in the sectors otherwise covered, such as manufacturing and retail trade, in that it would provide inventory data arranged according to legal form of organization of the holders.

As noted earlier, within certain limits the degree of consolidation made in corporate income-tax returns is variable from year to year at the option of the taxpayer. Such changes may have a substantial effect on the year to year comparability of data tabulated by industrial categories. Historically, it has often proved difficult to determine the extent to which particular changes in figures represent real changes as distinct from the effects of this and other causes of changes in classification. A means for largely resolving this problem for inventory statistics (and by analogy, to some extent for other data) is offered by the fact that corporate tax schedules call for both beginning and ending inventories for the tax year. Only the latter have been tabulated in the past; if the former were also tabulated, comparisons would reveal the changes in inventories over each year for companies of the same degree of consolidation and identically classified, and comparison of the previous end-of-year inventory data with the current beginning-of-year inventory data would throw light on the location and importance of changes in consolidation and classification.

25. We recommend that end-of-year corporate inventory figures now tabulated by the Internal Revenue Service in Statistics of Income be supplemented by tabulations of the reported beginning-of-year inventories from the same returns, to assist users of inventory and other data in dealing with problems of changes in the degree of consolidation and classification of companies in the Statistics of Income data.

The large number of corporate income-tax returns that relate to noncalendar fiscal years has serious consequences for the significance of tabulations of inventory figures used as if they related to the end of calendar years. This was discussed earlier in connection with the use of Statistics of Income data for benchmark purposes in the OBE industry survey. From time to time the Internal Revenue Service has published tabulations of the frequency of use of various fiscal periods in corporate income-tax returns, and of the net income and total assets reported in returns on each type of period.

26. To help implement recommendation No. 11, above, we recommend that the Internal Revenue Service make tabulations of the volume of manufacturing corporation inventories, classified by major industry group, according to the fiscal periods to which the data relate. Such tabulations would be of value also for other purposes.

The GNP inventory change estimates by OBE

With respect to the division of inventory statistics into value measures, treated in this section, and physical volume measures, discussed in the next, the estimates of change in business inventories included in the quarterly and annual gross national product accounts compiled by the OBE have a dual character. Each quarterly figure reflects the change in stocks during the quarter, when the stocks of both the beginning and end of the quarter are valued at the average market prices prevailing during the quarter. The individual quarterly changes shown are thus not affected by price changes and consequently can be classified as physical volume measures. Comparisons of the inventory change figures for successive quarters, however, are affected by changes from one quarter to the next in the average prices prevailing. Annual figures are shown on a similar basis, and also in supplementary tables, on a physical volume basis—that is, with stocks in all periods valued at a single set of prices.

Like the other components of GNP, the inventory-change figures are secondary statistics, developed from available value data and from price information. Except as adjustments can be made, or as errors fortuitously cancel out, the GNP inventory-change figures are subject to all of the difficulties inherent in the underlying data. Serious deficiencies in these data and in the price information available for converting book-value figures into physical volume changes are among the reasons why only very limited detail is shown—total and nonfarm quarterly, and broad sectors within the nonfarm area annually. Even at the highly aggregative levels published, substantial and repeated revisions have been found necessary in the data for particular quarters, as illustrated for the nonfarm component in table 4.

Major improvements in the GNP inventory-change figures must wait on improvements in the underlying value data discussed in this section, and on improvements in price information and the possible development of new physical volume measures discussed in the following section. As noted earlier, this series is regarded by many analysts as perhaps the most important of all inventory series for formulating Government economic policy and broad business policy, and the importance of reliability in the series can hardly be overestimated. This is a further major reason for making improvements in the reliability of the various sets of data used in its calculation, which are discussed on their own merits elsewhere in this report.

Calculation of the GNP inventory-change figure involves estimates of various sorts which would in themselves be highly useful if they were sufficiently reliable for separate publication. These include beginning and end of period dollar aggregates, for the total of business inventories and for various sectors of the economy, in book-value terms and also in terms of constant (1947) dollars. (In the final stage of calculation, the quarterly change in inventories expressed in terms of 1947 dollars is converted to change in terms of average prices of the current period.)

TABLE 4.—*Successive estimates in GNP accounts of net change in nonfarm business inventories for selected quarters*

[Billions of dollars, seasonally adjusted, at annual rates]

Estimates for period	1948 III	1948 IV	1949 I	1949 III	1949 IV	1950 I	1950 II	1950 III	1950 IV	1952 IV	1953 I	1953 II
Estimates published in—												
November 1948	1.8											
February 1949	2.1	4.1										
May 1949		4.1	1.4									
July 1949 ¹	5.4	7.1	2.8									
August 1949		7.1	2.8									
November 1949			2.3	-2.6								
February 1950			1.9	-4.0	-2.8							
May 1950					-2.8	2.5						
July 1950 ¹	5.6	6.7	.1	-3.2	-4.7	2.1						
August 1950					-4.7	2.1	4.0					
November 1950						2.7	4.0	-1.0				
February 1951						2.7	4.3	-1.7	11.0			
May 1951								-1.7	11.0			
July 1951 ¹	4.2	5.6	0	-1.7	-5.1	1.1	4.4	-1.8	10.6			
August 1951												
November 1951												
July 1952 ¹			1.1	-1.2	-4.2	-1	5.4	.8	12.2			
August 1952												
November 1952												
February 1953										7.5		
May 1953										7.5	1.1	
July 1953 ¹						.8	7.3	4.5	13.7	8.1	2.6	
August 1953										8.1	2.6	8.7
November 1953										8.1	2.6	8.7
February 1954											4.0	7.0
May 1954											4.0	7.0
July 1954 ¹	2.9	3.6	.9	-1.3	-5.1	2.6	6.3	3.5	13.3	7.5	3.3	6.2
July 1955 ¹										6.8	2.8	5.4

¹ Estimates published annually in National Income Number, Survey of Current Business.

NOTE.—Estimates shown only when published at the date given. If no estimate is shown opposite a given date, the last estimate published was still in effect at the time.

Source: Department of Commerce, Office of Business Economics.

Much of the book-value information used can, of course, be reproduced by the outside analyst who can consult the same sources as are used by the OBE. The constant dollar figures cannot, because the valuation indexes used are not published. Publication of the data entering into these computations, and the results at the several stages of calculation, would be valuable both for providing an integrated body of detailed information on business inventories in terms of various valuations, and for clarifying the relationship between the GNP figures and the available book-value statistics. On the latter point, there is apparently widespread perplexity with respect to the significance of differences between the GNP inventory-change figures and the quarterly changes that can be calculated from the monthly OBE value data for manufacturing and trade inventories, despite the detailed explanations included in the national-income supplement to the Survey of Current Business. One point that needs clarification is that for trade the monthly OBE data are tied to annual Census Bureau data, but the GNP figures are tied to Internal Revenue Service figures.

We would not urge publication of the results attained at particular stages of these calculations until justified by improvements in the reliability of the underlying information. A certain amount of information should be provided regularly now, however, if the various inventory series are to be properly interpreted and applied.

27. We recommend that the significant intermediate results of the calculations culminating in the published GNP series on change in business inventories be regularly published at a time and to the extent warranted by improvements in the basic data employed. Pending publication of these intermediate results we recommend that each quarterly release of the GNP inventory change figure be accompanied by a brief note explaining the relationship between the GNP inventory-change figure and OBE book-value data for manufacturing and trade, and including a summary statistical reconciliation of these data.

The GNP inventory figures relate specifically to business inventories, and are not affected by changes in stocks held by Federal, State, and local governments. The estimated net change in government inventories affects the unpublished item

for "Capital formation of government enterprises" under "Government expenditures," but changes in government stocks are not shown as such in the accounts.

This treatment is consistent with the concept of Government as a final purchaser and would have little effect on the usefulness of the inventory data if the volume of stocks held by the Government had an impact on the market no different from, say, stocks held by consumers. But certain categories of Government stocks, particularly inventories of farm products held by the CCC and of metals and other strategic materials held in Federal stockpiles, have tremendous impact on particular markets and may at times be significant sources of market supply.

28. We recommend that to the extent feasible on the basis of available data and consistent with national security considerations, net changes in selected categories of Federal Government inventories be shown in the GNP tables as a component under "Government expenditures."

SECTION VII. FINDINGS AND RECOMMENDATIONS ON PHYSICAL VOLUME INVENTORY DATA

With a few exceptions the available aggregate figures on business inventories (listed in table 1 on p. 417) are expressed in value terms; physical quantity data for the most part are confined to individual commodities. The exceptions with regard to aggregate figures are the GNP inventory-change series, the dual nature of which was discussed in the preceding section, and certain of the annual Department of Agriculture compilations. The commodity figures, while numerous, are far from comprehensive.

In this section we consider the needs for aggregate physical volume measures and for additional data on individual commodities. As will be seen, these subjects are related.

The need for aggregate physical volume data

Our survey of the views of inventory data users confirmed our impression that there is a major need for reliable aggregate measures of the physical volume of business inventories. Value figures (although not necessarily book values) are wanted for certain purposes, particularly financial analyses. But for most current business analysis the available value figures are of interest to users mainly for the indications they provide of physical volume changes. Business decisions with regard to purchase, production, and sales policies are generally taken primarily in the light of the quantity, rather than the value, of stocks. It is the quantity fluctuations that are usually of significance in current analysis, and they are obscured by changes in valuations.

Disentangling valuation changes from physical volume fluctuations in inventory value data is an extraordinarily difficult process. The operation is attempted formally, as indicated earlier, in connection with quarterly and annual GNP calculations, but the results are published only in terms of changes, at only the broadest aggregate levels. Comparisons of data for different quarters are affected by differences in average quarterly price levels, and the valuation adjustments are necessarily crude because of basic inadequacies in the underlying information. Users of current monthly value figures must make allowances for the influence of the price factor on the data by one means or another, and their allowances can be very wide of the mark.

The development of reliable aggregate measures of the physical volume of business inventories is thus of great importance. In addition to improving the GNP measure of inventory change, it would be desirable to have the major monthly value aggregates for manufacturing and trade matched by corresponding physical volume measures, both as these data are presently classified and in terms of the market grouping recommended earlier. This might be taken as an ultimate goal; the problems are many and complex, and the extent to which they can be met in the reasonably near future can be determined only by trial and experimentation. We believe that the importance of the objective warrants a serious effort to overcome the difficulties, and that the needed research should be initiated now.

29. We recommend that a pilot program of study and experimentation be undertaken by appropriate agencies with a view to meeting needs for physical volume measures of inventories at aggregate levels and in selected detail as expeditiously as possible. Areas in which study may be usefully initiated are specified below.

Methods of developing aggregate physical volume data

Two approaches to aggregate physical volume measures of inventories are possible: (1) the deflation approach, in which adjustments for the impact of price changes are made to inventory value figures, and (2) the physical volume index approach, in which data on physical quantities of the various commodities in stock are combined into indexes on the basis of relative unit values at a selected time. The deflation approach is presently the main reliance in the GNP calculations, and the physical index approach is used for certain annual Department of Agriculture measures.

The two approaches start at opposite poles. One requires the decomposition of value aggregates into their parts and the adjustment of each part for price change, and the other requires the construction of "constant price" value aggregates from detailed information on physical quantities, combined by applying price weights from a base period. Theoretically both methods meet in a common center and would yield identical results if comprehensive and precise data were available. As a practical matter, however, these conditions are never met. Both approaches are exceptionally difficult, with the nature and intensity of the particular problems varying from case to case. As a consequence neither is likely to be found to be universally applicable. It will probably be necessary, in developing aggregate information on inventories free of price changes, to combine deflated value measures for some areas with physical quantity indexes for others. For this reason, and because the new data that will be developed in connection with both approaches will have important independent applications, we believe that both approaches to this goal should be pursued.

Deflation of value data.—In broad outline the process of deflating inventory value data is analogous to the adjustment of sales, or other value figures, for price changes. The general procedure is to break down the value totals in successive periods into value series for parts, each of which, ideally, is internally homogeneous with respect to changes over time in embodied prices, and then to divide through each of these value series by an appropriate price series—i. e., one whose movements reflect the actual price changes embodied in the value series.

A number of difficulties are often encountered in deflating sales data, including the identification of the particular commodities covered by the value figures, and the location or choice of appropriate price deflators. Difficulty also often results from the fact that available price series generally relate to market quotations as of given dates, whereas sales figures for the same dates frequently embody contractual prices set at various earlier times.

For inventories similar and often more intense problems exist. As indicated in section IV, business accounting practices differ as to the scope of the assets included in inventories, the scope of the cost elements incorporated in inventory values, the manner in which goods are charged out of stock, and whether cost, market, or some other basis of valuing goods in stock is used. The stocks held by a firm at any one time were bought or made at various times in the past, and the values at which they are currently carried may be affected by the prices and costs of various earlier dates, in a manner depending on the particular accounting practices followed and the rates of turnover of stock.

For the deflation of inventory value data—as well as for the proper interpretation of current value series—much more than is known at present needs to be learned about accounting concepts, inventory-accounting methods, the nature of costs employed in valuing stocks, turnover rates for stocks, and other factors affecting the values assigned to individual commodities in business records. Continuing studies in this area need to be initiated, with attention to variation among firms and industries, variation in the records available for different accounting periods (such as the year, quarter, and month) and variations over time. Some valuable work has already been done, particularly in connection with surveys in recent years by the Department of Commerce on the prevalence of Lifo accounting, and in tabulations by the Internal Revenue Service of inventory data valued on various bases in corporate income tax returns for 1950. Only the surface has been scratched, however, in a field where intensive cultivation is needed.

In addition to investigations of the nature and meaning of inventory-value figures, studies need to be made of the appropriateness of available price information for deflating inventory values, and of feasible means for collecting better price information where it is found necessary. Price statistics compiled for other purposes are now and will undoubtedly remain a principal source of data for deflating inventory values. By themselves, however, such data are inadequate for this purpose for a number of reasons. Price data for highly fabricated commodities are relatively scarce. Moreover, published price series often do not

reflect actual changes in cost of commodities to purchasers. Again, in inventory records only purchased materials are customarily valued at costs corresponding to the market price of commodities alone; goods in process and finished goods have values compounded of the prices of purchased materials together with labor and overhead costs. Finally, the price series currently available have been compiled mainly with an eye to measuring the value of units of production or consumption, and the kinds and qualities of goods most important for production are not always those most important for stocks. The ways in which each of these difficulties impinge on the various sets of inventory value data and price data, and means for obtaining additional price information, need to be carefully investigated.

30. We recommend that attempts be made to improve the information available for deflating inventory value figures by obtaining additional information about (a) accounting practices, turnover rates, and other factors influencing the values assigned to individual commodities in business accounts; (b) the appropriateness of available price information for inventory deflation; and (c) feasible means of securing additional reports of prices paid for goods in stock for use in inventory deflation.

Physical Volume Indexes.—The Federal Reserve's monthly index of industrial production is a familiar example of a physical volume index compiled by combining quantity figures for individual commodities with pecuniary weights drawn from a base period. Some work has been done from time to time in constructing such measures for selected categories of inventories. To our knowledge, however, the only series of this type currently being compiled are annual measures of farm, and farm product, stocks published by the Department of Agriculture.

The materials needed for a physical volume index of inventories are a body of physical quantity series for individual commodities of the types and in the positions the index is intended to cover; and value data for a selected base period, for use in weighting the individual series into combined measures. For a reliable index, the commodity figures must be individually reliable and, taken together, their movements must be representative of all commodities in the area the index is to cover. If subtotals of the index are also to be shown, as for example, for individual industries or groups, representative series must also be available for each category to be shown separately. The value data for weighting ideally would be defined on some consistent basis ("book" values would present problems) and would be appropriately detailed.

The physical quantity series now available for potential use in such indexes will be listed in appendix F, which is still in preparation. While there are substantial amounts of data for certain industries and certain types of products, the existing series are insufficient for constructing aggregate measures, particularly monthly measures, for most broad sectors of the economy or types of products.

These commodity figures, however, which are being compiled by government agencies and trade associations for other, more immediate purposes represent a substantial base that can be built on. Additional data will become available if efforts to arrange for private groups to assist in financing new compilations by Government agencies, as recommended earlier, are reasonably successful, and if new data are compiled for certain strategic commodities, as recommended below. In addition, physical quantity data might be obtained at relatively low cost for a number of additional commodities if some or all of the present "facts for industry" surveys of the Bureau of the Census, now covering physical quantities of production or sales, were expanded to provide for inventory information also.

Exploratory studies need to be undertaken of the extent to which existing, and any new, physical quantity data can be shaped into physical-volume indexes for selected sectors, such as manufacturing or trade, or categories of products, such as consumer durable goods. Many of the conceptual and practical problems that would be encountered in this work would be similar to those of making production and price indexes, and experience with these other types of measures could be drawn on. Other problems would be unique to inventory measures. Exploratory studies would serve to isolate various problems and suggest areas of needed research, and would help to indicate the additional data needed for more reliable physical inventory measures. To fill out the categories the experimental indexes are designed to cover, some use may well be made of deflated value information.

31. We recommend that experiments be undertaken in constructing physical volume indexes for significant broad sectors or types of products. These should be initiated on the basis of existing physical volume data for individual commodities and any data collected in accordance with recommendation No. 32 below. Such experiments would help to indicate the additional data needed

for more satisfactory measures. Experimental indexes may well make some use of deflated-value information, where data in physical units cannot yet be obtained.

The need for selected commodity data

Physical quantity data on inventories of many individual commodities are of indirect interest for general business analysis, as they contribute to aggregate physical volume measures. Most commodity statistics, particularly the more detailed figures by size and type, are of direct interest to firms and industries making or using the individual products. It is appropriate that private groups contribute to the financing of such data where satisfactory arrangements can be made, as discussed in section V.

A number of individual commodities, however, are of peculiar importance in the economy because of their large volume or because their use is so widely distributed. Steel and textiles are outstanding examples, and other major materials are of similar, though somewhat lesser, importance. With respect to such commodities we need measures of stocks in various positions—for producers, distributors, and industrial consumers.

A closely related need is for physical quantity data on stocks, and on production, shipments, and orders, for important sequences of commodities through the various stages of production and distribution. Market developments can be traced from stage to stage most readily when the bulk of a given raw material is supplied to a comparatively small number of industries concerned primarily with the fabrication of this material, as, for example, in the sequence from cattle hides through leather to shoes. The hides-leather-shoe sequence is one of the few that can be followed reasonably well on the basis of existing data. Where materials are used in making a more diversified array of final products similar analyses might be conducted with data for only selected intermediate and final products.

Physical quantity data which permit detailed analysis of the stocks and flows of important categories of goods through the economy may be expected to yield dividends of various sorts. Because such data would be in physical terms the problems of changing valuations would be avoided. These are particularly troublesome when dealing with figures for successive stages because of the typically different behavior of prices at early and late stages of fabrication and distribution. Because the data would relate to individual commodities, many problems of interpreting aggregates—particularly problems of changing composition—would be avoided.

For the economic analyst such data would help to identify the stages at which decisions are made to modify output levels or rates of purchase, and to illuminate market developments. For the business manager the figures would reveal much about the nature of present and prospective demands for his products and supplies of his materials, and thus might help him to reduce fluctuations in his own activity rates, with salutary effects in modifying general business fluctuations. The development of stocks and related data in physical quantity terms for important sequences of commodities would thus represent a major advance. Sequences involving steel and textiles would be appropriate areas for initiating work in this area also, taking advantage of the various figures already available.

32. We recommend that studies be made of the feasibility of developing satisfactory physical volume inventory and related data for individual commodities of outstanding importance, and for significant sequences of commodities at several stages of fabrication and distribution. Initial studies might properly be concerned with inventories of steel and textiles in various positions, and the sequences involving them, since fluctuations in production, consumption, and inventories of these commodities are often of great significance to the economy.

APPENDIX A

LETTER FROM CHAIRMAN MARTIN ON COMMITTEE'S ASSIGNMENT.

BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM,
OFFICE OF THE CHAIRMAN,
November 22, 1954.

Mr. J. FREDERIC DEWHURST,
Twentieth Century Fund,
New York 36, N. Y.

DEAR MR. DEWHURST: I am most pleased to learn of your willingness to serve as a consultant to the Board in the capacity of chairman of a small committee

of distinguished economists and statisticians to undertake a study and appraisal of existing statistics in the field of inventories.

The study your committee is undertaking is one of several being made by the Board, in cooperation with other Federal agencies and private organizations, in response to a request addressed to the Board by the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report of the 83d Congress, 2d session. The subcommittee's request is stated as follows in the progress report of August 5, 1954:

"The subcommittee is requesting the Federal Reserve to explore, in cooperation with executive agencies, the adequacy of present statistics in three basic areas: (1) inventories, (2) savings, and (3) consumer and business expectations. This request includes a thorough review of, and basic research into, concepts, existing data, sources, and procedure for improving these statistics."

The language of this request clearly indicates a desire for a comprehensive appraisal of existing inventory data and of means for improving them. Such an appraisal patently calls for consideration of the purposes for which inventory statistics are being or should be used. It also implies consideration of the relations between inventory statistics and other data, such as those for prices and for sales, output, and new orders. In some fields, output figures for successive stages may provide the most useful clues available as to changing inventory positions.

The field of inventory study is one of the most important in the whole area of economic and financial analysis, particularly with reference to problems of cyclical fluctuation. Private business policies often depend on inventory changes in particular fields and in the economy as a whole. Government economic and monetary policies of a broad nature are often affected by inventory developments and so also are some other more specialized Government programs, notably those for defense stockpiling and farm price supports.

Only in recent decades has any appreciable volume of information concerning inventory fluctuations been available, and of necessity much of the work in collecting and analyzing inventory data has been experimental in nature. Further major progress in this field may be feasible in the years ahead. Your committee has an unusual opportunity to contribute to such further advance by analyzing actual and potential uses of data concerning inventories, appraising the progress which has been made so far in developing inventory information adequate for analysis, and making recommendations concerning the further development of statistical information in this field.

In view of the basic nature of the inquiry, attention may well be given to long-term as well as short-term objectives. Also, due consideration will need to be given to the effects which recent improvements in techniques of data collection, processing, and analysis may have in making possible an improved inventory statistics program. The committee, however, is not being asked to make any recommendations as to what agencies should be responsible for providing inventory data.

The target date set for completion of committee reports is June 30, 1955.

Mr. Ralph A. Young, Director of the Division of Research and Statistics, will serve as the Board's liaison with the committees, and he will be in touch with you from time to time as the work of your committee progresses. Mr. Young and members of the research staff are prepared to provide your committee whatever assistance they can, and the cooperation of other agencies is assured.

I wish to express to you and your colleagues on the Committee on Inventory Statistics my great appreciation for your willingness to undertake this important task.

Very truly yours,

WM. McC. MARTIN, Jr., *Chairman.*

APPENDIX B

PROCEDURES FOLLOWED, EXPERTS CONSULTED, AND STAFF ASSISTANCE RECEIVED

The Committee on Inventory Statistics met on seven occasions for 1 to 3 days, for a total of 16 days, in the period from December 1954 to September 1955. All of the meetings were held at the offices of the Federal Reserve.

Three sessions were devoted entirely to committee deliberations. During portions of the other meetings discussions were held with representatives of all principal Government agencies engaged in the compilation of inventory statistics, and with a number of representatives of agencies using inventory data. Further

discussions took place in the course of visits to the offices of these various agencies by individual members of the committee on eight occasions.

The principal compiling agencies also submitted memorandums to the committee describing their present programs involving inventory data, discussing their problems, and giving their views as to desirable changes in their own programs and those of other agencies. The various people who met with the full committee or with individual committee members are listed at the end of this appendix. A statement by Arthur F. Burns, Chairman of the Council of Economic Advisers, is included as appendix C. Altogether, a large number of individuals in Government assisted us in our work, and the degree of cooperation was uniformly high.

The views of a rather large and representative group of users of inventory data, mainly in business and academic fields, were obtained in the course of a mail survey. The names of the individuals submitting substantive comments are given at the end of this appendix and their views are summarized in appendix D.

We made extensive use of the facilities of the Federal Reserve. Arthur L. Broida, of the Board's Division of Research and Statistics, served as committee secretary, and Frank R. Garfield consulted with us. Bernard N. Freedman prepared appendix D, the summary of the comments of users. Elizabeth W. Angle, of the Federal Reserve Bank of Richmond, and Ethel L. Evans, of the Board's staff, prepared appendix F, on available physical quantity statistics (to be published later). Evelyn L. Jeffers of the Board's staff typed successive drafts of the report and assisted in many other ways.

GOVERNMENT OFFICIALS INTERVIEWED

- Arthur Berger: Assistant Chief Statistician, Bureau of Mines, Department of the Interior
- Lawrence J. Bridge: Acting Chief, Business Structure Division, Office of Business Economics, Department of Commerce
- Robert W. Burgess: Director, Bureau of the Census, Department of Commerce
- James P. Cavin: Chief, Statistical and Historical Research Branch, Agricultural Economics Division, Agricultural Marketing Service, Department of Agriculture
- Maxwell R. Conklin: Chief, Industry Division, Bureau of the Census, Department of Commerce
- Helen F. Demond: Chief, Statistics of Income Section, Statistics Division, Internal Revenue Service, Treasury Department
- Edward F. Denison, Jr.: Assistant Director, Office of Business Economics, Department of Commerce
- E. J. Engquist, Jr.: Director, Statistics Division, Internal Revenue Service, Treasury Department
- Grover W. Ensley: Staff Director, Joint Committee on the Economic Report
- Clayton Gehman: Chief, Business Conditions Section, Division of Research and Statistics, Federal Reserve Board
- Howard C. Grieves: Assistant Director, Bureau of the Census, Department of Commerce
- Bert G. Hickman: Economist, Council of Economic Advisers
- James W. Jarrett: Assistant Director, Statistics Division, Internal Revenue Service, Treasury Department
- George Jaszi: Chief, National Income Division, Office of Business Economics, Department of Commerce
- Harvey Kallin: Chief, Business Division, Bureau of the Census, Department of Commerce
- James W. Knowles: Economist, Joint Committee on the Economic Report
- Nathan M. Koffsky: Chief, Farm Income Branch, Agricultural Economics Division, Agricultural Marketing Service, Department of Agriculture
- Stanley Lebergott: Analytical statistician, Office of Statistical Standards, Bureau of the Budget, Executive Office of the President
- William Levin: Chief, Division of Financial Reports, Federal Trade Commission
- David W. Lusher: Economist, Council of Economic Advisers
- Paul W. McGann: Chief Economist, Bureau of Mines, Department of the Interior
- M. Joseph Meehan: Director, Office of Business Economics, Department of Commerce
- Vito Natrella: Chief, Section of Financial Analysis, Securities and Exchange Commission

Louis J. Paradiso: Assistant Director and Chief Statistician, Office of Business Economics, Department of Commerce
 Julius Shiskin: Chief Economic Statistician, Bureau of the Census, Department of Commerce
 Paul B. Simpson: Chief, Business Finance and Capital Markets Section, Division of Research and Statistics, Federal Reserve Board
 Richard K. Smith: Deputy Director, Agricultural Estimates Division, Agricultural Marketing Service, Department of Agriculture
 James W. Turbitt: Chief, Current Surveys Branch, Business Division, Bureau of the Census, Department of Commerce
 Louis Weiner: Chief, National Income, Moneyflows, and Labor Section, Division of Research and Statistics, Federal Reserve Board
 Justin F. Winkle: Assistant Commissioner, Internal Revenue Service, Treasury Department

RESPONDENTS TO THE COMMITTEE'S MAIL INQUIRY ON INVENTORY DATA

William J. Abbott, Jr., vice president, Federal Reserve Bank of St. Louis
 A. G. Abramson, economist, SKF Industries, Inc.
 Wroe Alderson, Alderson & Sessions
 W. D. Arant, Swift & Co.
 Harold E. Aul, Calvin Bullock
 Harold L. Bache, Bache & Co.
 Sherman C. Badger, financial vice president, New England Mutual Life Insurance Co.
 Miner H. Baker, vice president and economist, Seattle-First National Bank
 Leo Barnes, chief economist, Prentice-Hall, Inc.
 V. Lewis Bassie, director of business research, bureau of economic and business research, University of Illinois
 Ralph H. Bergmann, acting research director, United Rubber, Cork, Linoleum & Plastic Workers of America
 Arnold Bernhard, president, Arnold Bernhard & Co., Inc.
 William A. Berridge, economist, and Mr. McComas, Jr., Metropolitan Life Insurance Co.
 Donald F. Bishop, Bishop & Hedberg, Inc.
 James B. Black, president, Pacific Gas & Electric Co.
 W. F. Bloor, chief statistician, the Goodyear Tire & Rubber Co.
 William W. Bodine, chairman of the board, the Penn Mutual Life Insurance Co.
 Herbert F. Boettler, vice president, First National Bank in St. Louis
 Albert I. A. Bookbinder, Harris, Upham & Co.
 Karl R. Bopp, vice president, and Mr. Bunting, Federal Reserve Bank of Philadelphia
 Gordon Boyd, second vice president, the Mutual Benefit Life Insurance Co.
 Alexander Bozic, investment research department, Thomson & McKinnon
 Charles T. Broderick, chief economist, Lehman Bros.
 George W. Brooks, director, department of research and education, International Brotherhood of Pulp, Sulphite & Paper Mill Workers
 L. A. Brophy, general business editor, the Associated Press
 Courtney C. Brown, dean, Graduate School of Business, Columbia University
 Otis Brubaker, director, research department, United Steelworkers of America
 John R. Bunting, associate economist, and Mr. Bopp, Federal Reserve Bank of Philadelphia
 Allan T. Buros, State Street Research & Management Co.
 C. F. Caley, Jr., investment analyst, Aetna Life Insurance Co.
 Homer N. Chapin, vice president, Massachusetts Mutual Life Insurance Co. Chrysler Corp.
 William L. Cobb, Northeastern Insurance Co. of Hartford
 Samuel M. Cohn, fiscal economist, Office of Budget Review, United States Bureau of the Budget
 George W. Coleman, economist, Mercantile Trust Co.
 Gerhard Colm, National Planning Association
 Robert Coltman, vice president, and Mr. Rieck, the Philadelphia National Bank
 Ransom M. Cook, senior vice president, American Trust Co.
 John H. Cover, director, bureau of business and economic research, College of Business and Public Administration, University of Maryland
 Addison T. Cutler, senior economist, and Mr. Hostetler, Federal Reserve Bank of Cleveland

- Eleanor S. Daniel, director of economic research, and Dr. Novotny, the Mutual Life Insurance Co. of New York
 Imrie de Vegh, president, de Vegh & Co.
 Charles Devens, president, Incorporated Investors
 Alfred J. Dickinson, vice president, Virginia-Carolina Chemical Corp.
 Thomas Dimond, manager, commercial research, the Youngstown Sheet & Tube Co.
 Stephen M. DuBrul, director, business research department, General Motors Corp.
 L. M. Dugger, manager, market research department, the Coca-Cola Co.
 Francis I. du Pont & Co.
 Robert J. Eggert, marketing research manager, Ford division, Ford Motor Co.
 D. C. Elliott, vice president, the Cleveland Trust Co.
 C. R. Ellis, secretary, American Casualty Co.
 George H. Ellis, Director of Research, Federal Reserve Bank of Boston
 Ira T. Ellis, economist, E. I. du Pont de Nemours & Co.
 B. E. Estes, director of commercial research, and Messrs. B. B. Smith and Stringfield, United States Steel Corp.
 Solomon Fabricant, director of research, and Mr. Moore, National Bureau of Economic Research, Inc.
 C. R. Fay, vice president and comptroller, Pittsburgh Plate Glass Co.
 Andrew P. Ferretti, economics department, Keystone Custodian Funds, Inc.
 Malcolm Forbes, editor and publisher, Forbes magazine
 R. A. Fratus, manager, central analysis and planning department, Kaiser Aluminum & Chemical Corp.
 Irwin Friend, professor of economics, Wharton School of Finance and Commerce, University of Pennsylvania
 William H. Gassett, assistant vice president, Eaton & Howard, Inc.
 Edwin B. George, director, department of economics, Dun & Bradstreet
 Harry A. Gillis, Jr., economist, Transamerica Corp.
 Robert T. Glidden, assistant secretary, International Harvester Co.
 Raymond W. Goldsmith, R. W. Goldsmith Associates
 R. A. Gordon, professor of economics, department of economics, University of California
 Edson Gould, Arthur Wiesenberger & Co.
 Lyford Greene, supervising statistician, American Telephone & Telegraph Co.
 W. H. Grimes, editor, the Wall Street Journal
 David L. Grove, economist, Bank of America
 E. C. Harwood, director, American Institute for Economic Research
 Herbert R. Hastings, assistant treasurer, General Foods Corp.
 Borden Helmer, economist, Union Carbide & Carbon Corp.
 Walter E. Hoadley, Jr., treasurer, Armstrong Cork Co.
 D. C. Hooper, manager, Market Planning, Westinghouse Electric Corp.
 E. S. Hooper, senior vice president, Manufacturers Trust Co.
 Paul E. Hoover, president, the Anglo California National Bank of San Francisco
 Floyd J. Hosking, executive vice president, Corn Industries Research Foundation, Inc.
 Merle Hostetler, director of research, and Mr. Culter, Federal Reserve Bank of Cleveland
 Joseph B. Hubbard, Tri-Continental Corp.
 James F. Hughes, Auchincloss, Parker & Redpath
 Thor Hultgren, National Bureau of Economic Research, Inc.
 Stanley B. Hunt, Textile Economics Bureau, Inc.
 Allan F. Hussey, senior editor, Financial World
 J. Russell Ives, associate director, American Meat Institute
 C. C. Jamison, vice president, manager, research department, Security-First National Bank of Los Angeles
 Norris O. Johnson, vice president, and Mr. Roberts, the National City Bank of New York
 Robert E. Johnson, economist and actuary, accounting division, Western Electric Company, Inc.
 Seymour Katzenstein, Hirsch & Co.
 Dexter M. Keezer, vice president and director of economics department, McGraw-Hill Publishing Co., Inc.
 Leon H. Keyserling, Conference on Economic Progress
 E. P. Killackey, treasurer, and Mr. Kurie, Celanese Corporation of America
 E. D. King, managing editor, The Magazine of Wall Street
 E. R. King, chief statistician, Eastman Kodak Co.

- E. J. Klock, manager, marketing research, market research services department, General Electric Co.
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- J. F. Kurie, economist, and Mr. Killackel, Celanese Corporation of America
- James N. Land, senior vice president, Mellon National Bank and Trust Co.
- Wesley Lindow, vice president, Irving Trust Co.
- Oscar F. Litterer, business economist, Federal Reserve Bank of Minneapolis
- W. J. Littlefield, comptroller for financial analysis, Johns-Manville Corp.
- J. A. Livingston, financial editor, Philadelphia Bulletin
- S. Morris Livingston, consulting economist, Chicago, Ill.
- H. E. Luedicke, editor, the Journal of Commerce
- Frederick W. McComas, Jr., senior business research associate, and Mr. Berridge, Metropolitan Life Insurance Co.
- Paul W. McCracken, professor of business conditions, School of Business Administration, University of Michigan
- J. Hunter McDowell, statistical research division, Sun Oil Co.
- Joseph A. McFadden, vice president, Chemical Corn Exchange Bank
- Albert J. McIntosh, chief economist, economics department, Socony-Vacuum Oil Co., Inc.
- Francis McIntyre, director of economic research, California Texas Oil Co., Ltd.
- Gordon W. McKinley, director of economic research, planning and development department, the Prudential Company of America
- H. LeBrec Micolesau, General Motors Corp.
- K. E. Miller, manager, economic research department, Armour and Co.
- George W. Mitchell, vice president, Federal Reserve Bank of Chicago
- Geoffrey H. Moore, associate director of research, and Mr. Fabricant, National Bureau of Economic Research
- Robert R. Nathan, Robert R. Nathan Associates, Inc., consulting economists
- J. C. Noell, controller, Allied Stores Corp.
- John A. North, president, the Phoenix Insurance Co.
- Robert G. Norwood, vice president, the Hanover Bank
- Frances Novotny and Mrs. Daniel, the Mutual Life Insurance Company of New York
- Walter F. O'Connell, vice president for finance, Olin Mathieson Chemical Corp.
- W. F. Otterstrom, controller, Montgomery Ward & Co.
- James C. Parr, Connecticut General Life Insurance Co.
- L. C. Perkinson, vice president, American Cyanamid Co.
- Nicholas E. Peterson, vice president, the First National Bank of Boston
- H. M. Phillips, vice president, the First National Bank of Portland, Oreg.
- Harry I. Prankard 2d, president, Affiliated Fund, Inc.
- Eugene J. Pratt, assistant director, investment research department, Niagara Share Corp.
- Herbert V. Prochnow, vice president, the First National Bank of Chicago
- E. L. Quirin, director of research, Babson's Reports, Inc.
- Earle L. Rauber, vice president and director of research, Federal Reserve Bank of Atlanta
- Vergil D. Reed, vice president, J. Walter Thompson Co.
- Morgan H. Rice, vice president, Federal Reserve Bank of Dallas
- George L. Ridgeway, director of economic research, International Business Machines Corp.
- Fred Rieck, credit department, and Mr. Coltman, Philadelphia National Bank
- T. Bruce Robb, chairman, department of economics, William Jewell College
- D. G. Robbins, assistant vice president, the Singer Manufacturing Co.
- George B. Roberts, vice president, and Mr. N. O. Johnson, the National City Bank of New York
- H. V. Roelse, vice president, Federal Reserve Bank of New York
- Donald I. Rogers, business and financial editor, New York Herald Tribune
- Sidney E. Rolfe, economist, C. I. T. Financial Corp.
- Charles F. Roos, president, the Econometric Institute, Inc.
- Arthur Rosenbaum, manager, economic research department, Sears, Roebuck & Co.
- George H. Rutherford, vice president, National Dairy Products Corp.
- Charles H. Schmidt, assistant vice president, National Bank of Detroit
- M. M. Schratz, vice president and controller, Aluminum Company of America
- Harold X. Schreder, executive vice president, director of research, Distributors Group, Inc.
- D. C. Slichter, vice president, the Northwestern Mutual Life Insurance Co.

- Arthur A. Smith, vice president and economist, First National Bank in Dallas
 Bradford B. Smith and Messrs. Estes and Stringfield, United States Steel Corp.
 Dan Throop Smith, Special Assistant to the Secretary, United States Treasury Department
 Robert H. Smith, vice president, United Business Service
 Ezra Solomon, assistant professor, business administration, School of Business, University of Chicago
 D. M. Soper, Reynolds & Co.
 Beryl W. Sprinkel, securities analysis department, Harris Trust and Savings Bank, Chicago
 Fred A. Stahl, executive vice president, Standard and Poor's Corp.
 Walter R. Stark, Loomis, Sayles & Co., Inc.
 Oscar C. Stine, Elmwood Farm, West Virginia
 Horace Stringfield, assistant to executive vice president—accounting, and Messrs. Estes and B. B. Smith, United States Steel Corp.
 Oliver S. Swensen, vice president, the Equitable Life Assurance Society of the United States
 J. M. Symes, president, the Pennsylvania Railroad Co.
 Robert L. Tebeau, securities research division, Merrill Lynch, Pierce, Fenner & Beane
 Clarence W. Tow, vice president, Federal Reserve Bank of Kansas City
 Arthur R. Upgren, dean, the Amos Tuck School of Business Administration, Dartmouth College
 Charles A. R. Wardwell, Chief, Current Business Analysis Division, Office of Business Economics, United States Department of Commerce
 E. C. Wareheim, chairman of the board, Commercial Credit Co.
 Lingan A. Warren, president, Safeway Stores, Inc.
 Ralph J. Watkins, director of research, Dun & Bradstreet, Inc.
 Merrill A. Watson, executive vice president, National Shoe Manufacturers Association, Inc.
 Robert M. Weidenhammer, professor of finance and economics, University of Pittsburgh
 Abraham Weiss, assistant chief economist, International Brotherhood of Teamsters, Chauffeurs, Warehousemen & Helpers of America
 R. L. Weissman, W. E. Hutton & Co.
 O. P. Wheeler, vice president, Federal Reserve Bank of San Francisco
 T. M. Whitin, School of Industrial Management, Massachusetts Institute of Technology
 Charles W. Williams, vice president, Federal Reserve Bank of Richmond
 R. E. Williams, vice president, F. W. Woolworth Co.
 Donald B. Woodward, Vick Chemical Co., New York
 Wilson Wright, economist, the Proctor & Gamble Co.
 Donald A. Young, Chemical Fund, Inc.
 Ralph A. Young, director, Division of Research and Statistics, Board of Governors of the Federal Reserve System.
 A. W. Zelomek, economic counselor, International Statistical Bureau, Inc.

 APPENDIX C

LETTER FROM ARTHUR F. BURNS, CHAIRMAN OF THE COUNCIL OF ECONOMIC ADVISERS, ON NEEDS FOR INVENTORY STATISTICS

JUNE 16, 1955.

Mr. J. FREDERIC DEWHURST,

Chairman, Committee on Inventory Statistics,

Board of Governors of the Federal Reserve System, Washington, D. C.

DEAR FRED: It is a pleasure to reply to your letter of May 20, 1955, concerning the studies of the Committee on Inventory Statistics. The Council makes extensive use of inventory statistics, and we look forward to your report with the expectation that it will lead to the extension and substantial improvement of the data.

Statistics on inventories make an important contribution to the analysis of economic change. Since inventory investment is among the more variable components of gross national expenditure, accurate knowledge of the behavior of inventories is essential to a proper understanding of short-term economic

trends. The existing inventory statistics are quite useful, but we believe that improvements could be made to the benefit of both public and private users of the data. These improvements, which would consist primarily of the provision of greater detail by major product classes, would presumably require a larger sample than that which forms the basis for the existing estimates. The suggestions which follow are made from the viewpoint of the Council as a user of inventory and related statistics. We hope that they will assist the committee in its task of grappling with the conceptual and practical problems encountered in any attempt to improve data in a difficult area.

In our complex system of production and distribution, the rate at which commodities are produced is seldom equal to the rate at which they are flowing into the hands of final buyers. It is important to be able to trace the flow of commodities from original producers to final purchasers and to ascertain where stocks are being accumulated or depleted and whether they may be judged to be deficient or excessive with respect to sales, production, orders, and the like. The major commodity flows that need to be distinguished are those to consumers, businessmen, and the defense establishments of the Government. Industry detail should also be provided to the fullest extent feasible, since knowledge of developments in specific industries is often a prerequisite to correct interpretation of the behavior of aggregative measures. The data should be available monthly, with and without adjustment for seasonal variation.

With respect to the estimates of manufacturers' inventories, the most important need is for a breakdown of stocks of final products between consumer, producer, and defense goods. All other stocks, including those which are finished from the standpoint of an individual manufacturer but which will become the purchased stocks of another manufacturer, would form a class of materials and parts. Durable and nondurable goods should be distinguished within each of the categories of final products and that of materials and parts. Corresponding series on sales and new and unfilled orders for all categories would, of course, be very helpful.

An additional desirable refinement would consist of industry detail for the classifications suggested in the preceding paragraph. The extent to which reliable industry detail could be provided within the outlined framework would probably depend primarily on the size of the sample. The conceptual and practical difficulties of segregating the aggregate of materials and parts into those entering each class of final product are formidable, but this is a subject which might be explored by the committee.

The statistics on new and unfilled orders of manufacturers are important indicators of economic change. The data would be more useful if they provided a breakdown of industry totals of "new orders" between the portion which is actually new orders and the portion for which shipments are taken to represent new orders. A series on new orders placed by retailers with distributors or manufacturers would be of great value if it could be developed. It would also be desirable to have weekly data on new orders and shipments even if a high level of aggregation were necessary.

The Council has felt the need for additional data on physical stocks for some time. In this connection, several approaches might be studied by the committee. The value series on stocks and sales of manufacturers and distributors could be corrected for price change. Wherever feasible, companies could be asked to report stocks and sales in physical as well as in value units. Perhaps the data collected by trade associations and other groups could be expanded in coverage and extended to sectors of production or distribution presently omitted, through the cooperation of the compilers. Their cooperation could also be sought to speed up reporting and compilation of the data.

Sincerely yours,

ARTHUR F. BURNS.

APPENDIX D

NOTE.—This summary was prepared for the committee by Bernard N. Freedman of the Division of Research and Statistics of the Board of Governors of the Federal Reserve System.

COMMENTS ON INVENTORY STATISTICS BY DATA USERS

The survey—Coverage, nature, and purposes

As part of its study of existing inventory data the Committee on Inventory Statistics invited written comments from 320 selected individuals in many fields

of private and public endeavor. These included persons associated with manufacturing, wholesaling and retail enterprises, trade associations and publications, labor organizations, banks, investment companies, brokerage firms, insurance companies, sales finance companies, universities, business consulting services, research organizations, Federal agencies in Washington, and Federal Reserve banks.

Each person addressed was invited to comment on: (1) his specific uses for inventory figures; (2) the various available figures used; (3) the connections in which such data were being used and the other data used in conjunction with them; (4) how well the inventory data available met his needs; and (5) what changes, if any, he would recommend.

Comments on any aspects of the subject were welcomed, including questions of concept and definition, coverage, methods of preparation, adjustments for price change, adjustments for seasonal fluctuation, nature and degree of detail provided, reliability, frequency, timing of releases, revision policies, and forms of presentation.

Altogether, about two-thirds of those invited to comment replied. Of these, 181 presented substantive comments. The names and organizations of these respondents are listed in Appendix B. Many took the time to prepare well-considered and often detailed statements, either alone or after consultation with others within—and occasionally outside—their organizations. The results, therefore, tend to illuminate in striking fashion the relative status of particular series in current use and the factors each respondent considered most relevant to his own needs and to the task of the committee. As a way of documenting particular interests, name references, in addition to appendix B listing, are made in the body of the report except in a few cases where anonymity was preferred. In all cases, of course, the statements reflect personal views and not necessarily official company or agency positions.

While comments were made in connection with practically all existing inventory data, the series most discussed were the monthly series on book value of inventories held by manufacturers, wholesalers, and retailers, and the quarterly GNP estimates of change in business inventories.

PART I. THE DATA USED

A. Importance of inventories

Writing generally, Robert R. Nathan (Robert R. Nathan Associates) referred to inventories as the "most volatile of all the major elements in the investment area." Arthur Rosenbaum (Sears, Roebuck & Co.) stressed both "supply of goods (inventories all along the line) (and) demand for goods (sales to ultimate consumers)" as data needed "to exercise better control over the periodic excesses of our vast production facilities." A member of the meat packing industry emphasized the importance of inventory movements in commodity price determination. Robert J. Eggert (Ford Motor Co.) wrote: "We have found that the inventory position of firms has a very strong influence on the short-run fluctuations in business activity. Inventory position is often more important than sales in determining industrial production." Fred Rieck (Philadelphia National Bank) wrote:

"Possibly * * * we frequently tend to assign greater weight than do other businesses to the potential effects upon overall economic activity of prospective inventory changes, simply because of intimate acquaintance with their overwhelming importance. From our vantage point, we are daily witnesses to the impact borne by changes in inventory value (and the causal purchases, sales and pricing) upon profit, working capital and net worth, and business confidence."

B. Inventory data used

On the inventory statistics used, Harry A. Gillis, Jr., (Transamerica Corp.) in a fairly typical list noted the following:

"1. The aggregate figure shown in the gross national product quarterly presentation: 'change in business inventories.'

"2. The total inventories, at month end book value, of manufacturing, wholesale trade and retail trade establishments; each of which is in turn separated into durable versus nondurable establishments.

"3. Manufacturers' inventories, at month-end book value, by stage of fabrication.

"4. Manufacturers' inventories, by types of industry, and retail trade inventories, by selected types of store."

Some, as George L. Ridgeway (International Business Machines Corp.) and others, mainly from the financial houses, cited varying "use of the more detailed breakdown of inventory data on various industries which appears in the quarterly financial reports of United States manufacturing corporations (Federal Trade Commission and Securities and Exchange Commission)."

In his list of greatest use, Fred Stahl (Standard & Poor's Corp.) included "the Federal Reserve Board's series on department-store inventories." These series were often cited, particularly by the financial and trade correspondents, as well as correspondents from some manufacturing companies.

While few attempted to draw up exhaustive lists, varying references to the use of other series were also made. For example, Morgan H. Rice (Federal Reserve Bank of Dallas) listed: "The Bureau of Mines weekly and monthly data on crude-oil stocks and monthly data on stocks of major refined products; American Petroleum Institute weekly data on secondary inventories of petroleum products; Department of Agriculture annual and periodic data on selected agricultural commodities, including livestock numbers, grains, and cotton."

Robert L. Tebeau (Merrill Lynch, Pierce, Fenner & Beane) listed, in addition to other data, the inventory series compiled by the following trade associations: American Pulp & Paper Association, the National Paper Board Association, the Radio-Electronic-Television Manufacturers Association, the National Electrical Manufacturers Association, the Lumber Manufacturers Association, the International Petroleum Association of America, and Ward's Automotive Reports.

In addition, some, as Mr. Reick, specifically referred to private sources and counseling services, and, as another writer put it, to data "when predigested by such sources as Moody's, Standard & Poore's, Prentice-Hall, and others."

Harold V. Roelse (Federal Reserve Bank of New York), among others, mentioned some use of expectations "polls taken by Dun & Bradstreet, the National Association of Purchasing Agents, and Fortune magazine," noting "While businessmen have only partial control over the level of their inventories, it is nevertheless helpful to have some indication of the levels they will attempt to achieve." Gerhard Colm (National Planning Association) also described use of such material "in * * * analysis of the immediate economic outlook," and added: "For periods of the past we are using the Department of Commerce estimates as prepared by the National Income Division; for projections (beyond the immediate economic outlook) we are relying on our own guesses."

The use of the department-store data on sales, stocks, and orders for regional and local areas was also often mentioned by the Federal Reserve banks, as well as by commercial banks, retailers, and some manufacturers. Among the latter, George H. Rutherford wrote: "While National Dairy is a relatively large company, much of our business is local in character. It is governed to a substantial degree by local conditions."

Certain other regional series are available locally in addition to the department-store data. Oscar F. Litterer, for example, listed two other inventory series available to the Federal Reserve Bank of Minneapolis—for furniture stores and lumber yards. From the Federal Reserve Bank of Boston, George H. Ellis also listed similar series for New England as well as an experimental expectations survey for that area.

1. *Use in general.*—Most of the business analysts, along with others, indicated an interest in the available inventory statistics in two ways, as A. G. Abramson (SKF Industries) indicated: "First, in connection with * * * analysis of the general business situation, and, secondly, to compare with (particular) inventory movements."

Almost all the emphasis of the users was on short-run analysis and near-term projections. "To arrive at considered opinions," one respondent wrote, "involves examination and constant checks, not only of individual companies, but also of general economic conditions." This stress on "continuing economic analysis," as Stephen M. DuBrul (General Motors) phrased it, involves special interest in the underlying monthly figures, even when the GNP quarterly change figures are considered the major tool for analysis. As Leon H. Keyserling (Conference on Economic Progress) wrote:

"Our basic concern is with the health and welfare of the total national economy, and hence our (current) needs are somewhat circumscribed by this basic requirement. Thus, we feel that it is of prime importance that the inventory data used by the National Income Division * * * be as accurate and complete as reasonably possible * * *"

Among business establishments only a few—mainly those from some of the insurance companies—displayed little interest in any of the inventory data now available. Gordon Boyd (Mutual Benefit Life Insurance Co.) and William W. Bodine (Penn Mutual), for example, indicated there were "few occasions * * * to use the data in a specific manner in (the) function of investing the funds of a life-insurance company." Another insurance-company representative claimed "no interest in them as a medium for influencing our production and expansion programs." C. F. Caley, Jr. (Aetna), indicated "no (extensive) use * * * (because) * * * our business is essentially long range."

In drawing up his list of data used, Mr. Gillis added, "It may be noted that the descending order of importance (to him) is an increasing order of detail." This was a point often made by others with varying degrees of emphasis. Mr. Nathan, near one extreme, for example, indicated his chief concern was "in the level of inventories * * * and (inventory) changes as an offset to savings * * *" with no particular interest "in any specific industry or in any particular commodity." At the other extreme, correspondents from trade associations as well as labor unions declared a very strong interest in product data available. As Stanley B. Hunt (Textile Economics Bureau) wrote:

"In our work here, we have no interest in general or overall industry inventory statistics. On the other hand, we are indeed interested in and use specific inventory data * * *"

Similar views were expressed by Floyd J. Hosking (Corn Industries Research Foundation) and—among labor organizations—by George W. Brooks (International Brotherhood of Pulp, Sulphite & Paper Mill Workers) and Ralph H. Bergmann (United Rubber, Cork, Linoleum & Plastic Workers of America). Mr. Bergmann, for example, indicated his main interest was in finished goods stocks data for his industry as far as available.

Between these two extremes, the majority use the monthly, quarterly, and other data for summary purposes and the more detailed data, as V Lewis Bassie (University of Illinois) put it, for "special analyses." In varying degree this involves the use either on a continuing basis or from time to time of what Arnold Bernhard (Arnold Bernhard & Co.) termed "nearly all inventory data currently published."

Apart from the summary totals, particular series were often cited as relatively more useful than others. H. E. Luedicke, responding editorially in the *Journal of Commerce*, wrote: "By far the most significant breakdown in the current Department of Commerce inventory statistics is the analysis of manufacturers' inventory by stages of fabrication: purchased materials, goods in process, and finished goods." A number of others tended also to emphasize the importance of this breakdown. Ira T. Ellis (du Pont) and a smaller group emphasized the industry detail.

The way all available data tend to be used may be illustrated by the following from Walter E. Hoadley, Jr. (Armstrong Cork):

"We begin our forecasting work, along with most other companies of our size or larger, with an appraisal of general business trends. We carefully scrutinize the Department of Commerce inventory figures and pay particular attention to the inventory changes noted in sector analysis. In addition, we maintain rather extensive contacts with informed people in representative industries across the country in order to sharpen our views on inventory trends and changes. This approach has been exceedingly helpful in calling turns in inventory cycles and enables us to anticipate the general movement, for example, during the past 4 to 6 months. In short, we rely heavily upon fragmentary information on aggregate inventories from all available sources and confirm our impressions with the more comprehensive data provided by Government."

2. *Special Government uses.*—In his letter, Charles A. R. Wardwell (Department of Commerce) noted that "requirements for inventory statistics relate broadly to either national security problems or economic analysis or both." Samuel M. Cohn (Budget Bureau), who indicated his work depends on analyses made by others, stressed the use of the data in preparing budget estimates and projections. "The analysis staff of the Treasury Department," D. T. Smith wrote, "makes considerable use of the Commerce inventory data in analyses associated with Treasury financing and debt management, in developing economic projections for use as a base for Treasury revenue estimates, in connection with various tax proposals, and for other purposes." The Federal Reserve banks stressed their use of inventory data in connection with their responsibilities for continuing evaluation of current business developments and their implications for monetary policy. Typical of these, Charles W. Williams (Richmond Federal Reserve Bank) wrote:

"The chief use of inventory statistics by this bank clearly lies in their value in appraising business volume and the price outlook. Adequate appraisal in these matters contributes to economic intelligence of the bank's officers and directors, may indirectly contribute to the formulation of Federal Reserve policy, and is presumably of interest to the business public which the bank serves through its publications."

C. Related data used with inventory data

The data on inventories "are used as one link in a chain." They are used extensively with other data in various correlations "to try to project" overall business conditions or "the business picture some months in advance," as Alfred J. Dickinson (Virginia-Carolina Chemical Corp.) pointed out. Among the others who commented directly on this question, K. E. Miller (Armour & Co.) mentioned sales and orders and Mr. Rutherford mentioned "such figures as gross national product, per capita income, and other indicators of consumer's buying power." Among bankers, Wesley Lindow (Irving Trust Co.) also mentioned bank loans for some of the major industries. Among investment companies, Harry I. Prankard (Affiliated Fund, Inc.) referred to stocks-sales ratios and stocks-output ratios. Among those writing from brokerage houses, Harold L. Bache (Bache & Co.) also mentioned stocks-sales ratios, and Albert I. A. Bookbinder (Harris, Upham & Co.) indicated regular use of the inventory statistics "as part of the manufacturers' new orders and backlog statistics." Among the business services, E. L. Quirin (Babson's Reports) indicated the data are used in relation to "(1) an index of commodity prices, (2) sales and sales projections, and (3) (the) * * * Babsonchart Index of Physical Volume of Business." Among Government agencies, use of the whole range of data available was indicated.

D. Inventory data in relation to public and private policy

A number of correspondents took occasion to mention various combinations of inventory and related data as a factor in the policy formulations of management. J. Hunter McDowell (Sun Oil), Robert T. Glidden (International Harvester), and Albert J. McIntosh (Socony-Vacuum) specifically referred to reports to management involving these data. John H. Cover (University of Maryland) mentioned "management use for policy and operation determinations." Among people connected with banks, Norris O. Johnson (National City Bank of New York) indicated such use to explain loan trends and to brief officers. An officer in one of the larger banks noted that "because knowledge of inventory trends is essential for our entire staff, the subject being one of continuing interest to our customers, it is our practice to summarize the situation in a monthly report for internal consumption."

Apart from the press correspondents, a number in the other groups specifically mentioned inclusion of inventory data in their own publications in chart as well as tabular form—notably the Federal Reserve Board and banks, private banks, investment companies, brokerage firms, research organizations, and universities. Use in speeches and interviews also was mentioned.

E. How well available data meet needs

As indicated earlier, the inventory series most generally used are the GNP quarterly data and the OBE monthly series for manufacturers, wholesalers, and retailers, either as a total or in particular detail. Comments on the overall adequacy of available inventory statistics tended, therefore, to relate to these series.

As a majority, only those writing from the insurance companies with mainly long-term interests were inclined to consider available data relatively adequate. In the other groups, some, as Robert H. Smith (United Business Service), found them satisfactory. Considering how certain analysts had managed to use them, Arthur R. Upgren (Dartmouth College) felt that "on the whole, the inventory figures of both 1949 and 1953-54 have served us well." More frequently, however, deficiencies were noted with various degrees of emphasis, reflecting differences in either needs or the ways in which certain of the basic requirements are, or can be, met.

While a number of writers paid tribute to improvements that had been made, Mr. Eggert called inventory statistics "currently * * * about the weakest link in our chain of business statistics." Another referred to them as "one of the sore spots in cyclical analysis." Vergil D. Reed (J. Walter Thompson) found

them of little value "in making * * * decisions of a current nature." Dexter M. Keezer (McGraw-Hill) wrote:

"We use the inventory data for short-term forecasting, because we must, but there are few areas of economic statistics that have given us more trouble. We have been led into error by the figures on occasion, and there was at least one recent instance when we were able to make a correct forecast only by assuming that the inventory data available to the Department of Commerce were substantially wrong—as they proved to be."

D. T. Smith wrote: "Inventory accumulation and liquidation has been such a significant factor affecting important swings in business activity that any improvement in inventory statistics would contribute to a better understanding of the current situation of business, and aid Treasury officials in helping to promote greater economic stability." Another writer commented that the statistics "stand in need of strengthening." Some implied the need was now greater than ever. Mr. Luedicke wrote:

"The timeliness of this work (of the Federal Reserve task force committees)—particularly as it refers to inventory data—is obvious. Both of the post-war recessions—the one in 1948-49 and the one in 1953-54—were primarily 'inventory-recessions.' There were other contributing factors, of course, but reluctance to keep on producing for inventory, in both instances, set off the economic downward trend."

Eugene J. Pratt (Niagara Share Corp.) mentioned that "since the President has discontinued the practice of issuing a midyear economic report in favor of a single formal report each year, the value of the various Government statistics in (his) mind takes on added significance." Looking toward the future, Robert M. Weidenhammer (University of Pittsburgh) cited "the trend toward automation in industry and the demand for a guaranteed annual wage" as factors "currently enhancing * * * tendencies toward inventory accumulation" and, therefore, the need for improved figures in this area.

PART II. SPECIFIC COMMENTS AND RECOMMENDATIONS

Tone of the recommendations

The following quotations serve to illustrate the general tone of the comments and recommendations made:

"Since we are collectors of statistics ourselves, we are aware of the many difficulties and the great expense involved in the collection and preparation of any current statistical series. We also realize that these difficulties and expense must be weighed against the needs of the entire statistical program and the alternative use of available funds." (Earle L. Rauber, of the Federal Reserve Bank of Atlanta.)

"I have no suggestions for any changes. Rather, I suggest an examination ('reexamination' would be more accurate) of whether certain changes are possible and, if possible, are warranted." (Mr. Gillis.)

"The following suggestions are made for improvements in this statistical material that would be of interest to us: Whether such recommendations could be accomplished is something we have not considered, because the answer to that problem lies more within your province than ours." (A. Moyer Kulp, of the Wellington Co.)

"If our criticisms of the available inventory statistics seem too harsh, it may well be because we have not taken time to emphasize the difficulties involved in compiling the figures. However, we are well aware of and appreciative of these difficulties." (Mr. Keezer.)

"We realize that there is perhaps nothing new or original in our comments, and that the obstacles involved are formidable." (Herbert V. Prochnow, of the First National Bank of Chicago.)

A. Comments on timing, reliability, and scope of current data

1. Comments on timing.—(a) Quarterly and annual series: Messrs. Keyserling and Prochnow felt that the GNP quarterly data should be monthly, or, at least, that monthly estimates of the quarterly data should be made available—"quickie" estimates. William J. Abbott, Jr. (Federal Reserve Bank of St. Louis), noted that the Census annual sample surveys were 6 to 8 months late, and this reduced their usefulness. Mr. David L. Grove (Bank of America) asked that compilation of Internal Revenue Service benchmark data be speeded up, and, with him, Malcolm Forbes (Forbes magazine) asked for possible shortening of the interval between adjustments to such data.

(b) OBE and other monthly series: The value of inventory data is so peculiarly related to short-run cyclical analysis that most correspondents who attempted to evaluate the monthly series mentioned timing as "at least one" of their chief deficiencies. Reference to this, which in some letters also directly included sales and new orders data, was most emphatic on the "6-8 week lag" in total industry survey data (Messrs. H. LeBrec Micoeau of General Motors, Eggert, Kulp, and others). Often the language was virtually identical. Mr. Luedicke cited timing as "the obvious first." G. H. Ellis called it the "first exception"; Walter R. Stark (Loomis, Sayles & Co.), "probably the most commonplace criticism." A number made this their only criticism.

Not all the monthly data are equally late, as Mr. Leudicke remarked, mentioning department store inventories and dealers' stocks of autos as among the earlier figures. These, in his estimation, however, are "too fragmentary to permit more than tentative conclusions."

Addison T. Cutler (Cleveland Federal Reserve Bank) wrote: "If the inventory information were less important in substance, we would slight its use on account of its relative lateness; but we cannot afford to neglect it. One strategem to which we occasionally resort under the circumstances is to use the prompter series on business loans of commercial banks as a rough forerunner of what the latest inventory data are likely to show when released." ("This," he added, "is not a highly satisfactory procedure, of course.")

Since some segments of data become available earlier than others, some writers, as Mr. Miller, suggested more piecemeal releases if necessary. One writer suggested more use of the "weekly supplement to the Survey of Current Business" for this purpose. Some, perhaps more mindful of the compilation difficulty, suggested they would be willing to settle for an inventory program with fewer series if this would improve the overall timing. Among other recommendations, Mr. Leudicke suggested consideration of a special advance survey of manufacturers' stocks of finished goods, at least on direction of change.

Although the committee limited itself to recorded data surveys as distinguished from forecasts or anticipation surveys, a number of respondents (Messrs. Eggert, Hoadley, Colm, Geoffrey H. Moore, of the National Bureau of Economic Research, T. Bruce Robb, of William Jewell College, and Gordon W. McKinley, of Prudential) asked whether surveys of management expectations might not be conducted at all three levels of manufacturing and distribution, or at least in manufacturing. Such surveys are now being used by the Boston Federal Reserve Bank, Dun & Bradstreet, and others. In this connection R. A. Gordon (University of California) also cited a recent study of the C. E. D. business executives research group associated with the Wharton School of Finance. Indicating some of the dimensions of this problem, Mr. Hoadley wrote:

"From the standpoint of forecasting, I believe the most significant barometer, if it could be obtained, would be a measure of change of general company policy toward inventories. This may be a rather nebulous concept, but from personal observation I am convinced that broad corporate policy or attitude toward inventory shifts from time to time, with major repercussions upon inventory statistics and the general level of business. Just how these changes in policy can be measured is a real question. I believe, however, that it would be worthwhile giving some attention to the decision-making process which at times, at least, would seem to lead the statistics."

The possibility of improving orders data in this connection was also noted.

2. *Comments on sampling reliability and revisions.*—"It is our impression," wrote Mr. Keezer, "that the sample on which the monthly inventory series is based must be quite inadequate. Revisions (to benchmark data) will presumably help, but as consumers of these statistics we will remain cautious with them. The quarterly series included in GNP apparently incorporates the errors of the monthly figures, as well as those in estimating farm inventories."

"The most obvious and most frequent questions that occur to me and to some of my friends here," wrote S. Morris Livingston, "have to do with the accuracy of the measures of short-term inventory fluctuations. These in turn involve a series of questions * * *." As was generally recognized, the adequacy of the samples was not the only question on the score of "accuracy." Mr. Livingston, for example, mentioned in addition "methods of reporting, the problems of price adjustment, the significance of changes in inventories being processed for the Federal Government, etc."

There was some reference to the technical descriptions on sample coverage provided by the Department of Commerce, to consistency checks with other data, and to hearings of the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report as bases for questions of reliability. How-

ever, the number and magnitude of the revisions were most often cited in this connection. As William H. Gassett (Eaton & Howard) wrote: "Concerning those series with which we have worked, we also note that there is a process of constant revision and at times such revision is of major proportions. Obviously, this cannot be avoided, but on the other hand it tends to raise doubts from time to time as to the accuracy of the latest available data."

Many asked the committee to appraise the adequacy of the samples used; others offered direct comment on particular sampling inadequacies, including the unevenness in the sample by industry, cited by one writer; by stage, cited by Mr. Roelse and others; for retail establishments, cited by Messrs. Colm and Irwin Friend (University of Pennsylvania); and for small establishments, cited by a fairly large group including Messrs. Grove, Bassie, Nicholas E. Peterson (First National Bank of Boston), and Beryl W. Sprinkel (Harris Trust & Savings Bank). In the latter context, Raymond W. Goldsmith (R. W. Goldsmith Associates) termed the development of "an efficient, continuous system of reports for a sample of unincorporated business enterprises * * * not only for inventories but also for * * * income, capital expenditures, and saving * * * probably the most important single job * * * in economic statistics."

Many—as Messrs. Lindow and Glidden—suggested that unless preliminary samples were strengthened publication be delayed to minimize the need for revisions. Mr. Lindow added: "Some revisions are, of course, inevitable, but I feel that figures should not be released if they are subject to such major revisions that the original figures are of dubious validity."

Generally, those commenting on the subject suggested that the techniques of estimating inventories should be improved regardless of the stage (preliminary, revised, "final" etc.) they represented. Some, as Charles H. Schmidt (National Bank of Detroit), suggested this be done even if it meant temporarily reducing the amount of data now shown; some, as E. J. Klock (General Electric Co.), even if it precluded adding to the scope of detail shown.

One writer felt that "at this point some of our sampling experts should attempt to design (further) scientific samples against stated criteria of validity." On the other hand, another wrote: "I listen respectfully when the sampling experts tell me how accurately a universe can be reflected by small numbers provided they are well selected, but in the case of this particular function the differentiations in industrial practice are so numerous that I retain private doubts."

John R. Bunting (Federal Reserve Bank of Philadelphia) and others found "the volume of revisions * * * disturbing." On this score, Mr. Prankard wrote: "A small office such as ours cannot easily afford the time and effort needed to carry through extensive revisions frequently, particularly when the data revised are computed in measures of business activity." A few appeared to take the revisions for granted and asked only (as was frequently requested) that changes made in the data always be consolidated in one place for easier reference and to facilitate historical comparisons.

In addition to the above, the use of changing samples in some government and, particularly, trade association data was decried by Messrs. Cover and Rauber.

3. *Comments on scope.*—A number of respondents suggested the need for extending the scope of current inventory statistics on a monthly or at least quarterly basis to include agriculture, mining, construction, and utilities, as well as consumer and government stocks. In most cases, the latter were distinguished from defense-related stocks held by business, discussed later. For some segments—as construction industry or consumer stocks—as will be noted, the emphasis was partly or wholly on physical unit rather than value figures.

On a major aspect of this subject, one correspondent wrote: "There also appear to be serious gaps in coverage—that is, some major areas left out. Such areas as construction, utilities, oil and gas drilling, mining, etc., are apparently not included, or only partially included in present report(s). Although our knowledge of present data backup is sketchy, it would not surprise us if 30 to 40 percent of the 'inventory float' of steel in the economy is omitted from the coverage area of present inventory estimates."

Mr. Keyserling, partly in behalf of a more current GNP series, wrote: "One thing that this specifically implies is that the biggest gap in the monthly statistics, inventories outside of manufacturing and trade, must be closed." James F. Hughes (Auchincloss, Parker & Redpath), without reference to periodicity, noted, "It would be interesting if it were possible to compile a total inventory figure which would include Government stockpiling and some estimate of agricultural and farm inventory."

In emphasizing the importance of improved statistics on Government stocks, "if feasible," Mr. Roelse noted:

"Although interpretation of data in this area is complicated by certain conceptual problems, these could perhaps be handled by separating the total into the following categories:

"1. Stocks accumulated independently of possible future use by the Government, such as the commodities acquired in the farm-support program.

"2. Stocks built up for potential 'consumption' by the Government, including:

"(a) Items such as military hard goods, which are subject to rapid obsolescence.

"(b) Items such as strategic raw materials which presumably will be consumed only in time of war or other emergency situations.

"(c) Staple items such as Army shoes which are subject to normal obsolescence and are utilized in the course of routine operations."

Mr. Goldsmith wrote that in connection with estimates of saving and national wealth he is particularly interested in figures on inventories held by State and local governments—" * * * series which are not being compiled now even on an annual basis."

On the need for improved coverage of agricultural stocks, Mr. Keyserling wrote:

"We also have an interest in individual commodity statistics in certain areas. Particularly in the field of agriculture it is necessary to maintain adequate and timely inventory statistics. Though the present data system in this area is generally good, it is a bit difficult, in view of the nature of crop and livestock production and marketing, to have current stock information on all major commodities at any given time. I don't know what the answer is, but it would be useful to have more than yearly data on production, consumption (disappearance), and stocks. The need here, of course, is to be able to evaluate readily the potential disposition problems that may arise in an area which is so sadly misunderstood in the public mind. Concepts of 'normal' stocks and 'normal' carryover (including amounts in transit and in consumption channels) are needed especially in this area, if merely to dispel the general public misconception that all farm commodities are 'bursting' out of public warehouses and other storage places."

Mr. Rutherford offered a modifying note:

"The inventory figures that we follow most are those of our industry that are put out by the Department of Agriculture. These figures probably were more indicative prior to the Government support programs."

Messrs. Roelse, Thor Hultgren (National Bureau of Economic Research), and Charles F. Roos (Econometric Institute) commented on the need for improved housing stocks. Mr. Roelse felt estimates should be made of unsold new houses in the hands of builders. "At present," he wrote, "only scattered information on this subject is available. The data would be somewhat difficult to interpret if they were available, but in such an important sector of the economy information of this sort would always be of interest and might turn out to be highly significant."

Mr. Roos wrote: "We would also like to see a housing inventory kept up to date. As I explained in (our) book (General Outlook for the American Economy, 1954-74), the data (housing table cited) are not meant to be accurate—some are arrived at by crossword puzzle methods and guesswork. They were presented to show what data are needed and where the gaps are."

In connection with the need for more consumer stocks data, Oscar C. Stine noted:

"I have at times given some thought to the needs and problems of extending the coverage of inventory statistics to include significant items such as coffee, sugar, and some more durable goods such as household equipment and farm machinery in the hands of consumers or users. Under war conditions and at turning points in business activity such data could be very useful. However, the problems of securing representative data and the cost probably would be too great to justify a program for continuous collection of such data."

Most (Messrs. Hultgren, Abbott, Roos, and others) who commented on this need stressed durable goods and, as above, in physical unit rather than value terms.

Mr. Hultgren suggested a quarterly consumer stocks survey based on consumer interviews or possibly on reports from "a sample of dealers in selected neighborhoods who might be able to supply material on age and other characteristics of durables from their sales records." He added: "To go very far along these lines may not be practicable. I think, however, that the possibilities should be investigated."

B. Comments on "book value" problems

"In thinking about the problem of possible improvements," one correspondent mentioned as "the first of several problems, the measurement scale: How far should data be expressed in quantity units? in dollar units? in deflated dollars? how handle the Lifo problem?"

Going into the source of this difficulty, Mr. Schmidt wrote:

"While manufacturing and trade inventory data have been compiled and published by the United States Department of Commerce for some time, neither the Commerce Department figures nor those collected by other Government agencies (e. g., the Federal Trade Commission, as part of its quarterly industrial financial reports series) and various trade associations and other private groups have, for one reason or another, proved very satisfactory. Undoubtedly many of the shortcomings of currently available inventory data are attributable to the lack or inadequacy of inventory control methods, to absence of uniformity in inventory accounting and valuation methods, and to differences in reporting procedure among business concerns. These are deficiencies that will require education, the adoption of improved accounting methods and procedures, and time to remedy."

Although the emphasis varied, the financial, marketing, and other data users who referred to this matter made essentially the same comments on the inadequacies thus produced in the data.

"We have long regretted the necessity of leaning so heavily on value figures," wrote William A. Berridge (Metropolitan Life), and another writer explained:

"Effect on inventory statistics of various accounting practices, e. g., Lifo, and of price changes over the years is significant. Distortions from these and other causes tend to be multiplied severalfold when change in inventories (as opposed to absolute size of inventories) is considered. Our interests happen to focus primarily on inventory changes."

This, too, was Mr. Grove's concern:

"A broad shift to Lifo inventory accounting such as might result from enactment of the so-called Lifo-lower of cost or market amendment to the tax code, could largely offset the normal inflationary effects of future price increases on inventory book values and book profits. This problem could be particularly troublesome in interindustry comparisons of inventory movements if an industry in which Lifo was prevalent were matched against one in which that method was used rarely or not at all."

Other aspects of the problem were also mentioned. For example, Mr. Rosenbaum noted that the "business" total for manufacturing, wholesale, and retail is "not a very meaningful measure of the total—despite its use as such—since wholesale and retail inventories, which vary in proportion to the total, are not valued on the same basis as manufacturers' inventories."

Some of the discussion in this area turned on the validity, meaning, and difficulty of the inventory valuation adjustment in the gross national product accounts. Mr. Cohn, for example, emphasized the importance of the valuation adjustment "because it sometimes strongly influences the estimated amount of corporation tax liability and hence Federal tax collections. We do not feel competent to judge the validity of present estimating techniques, but we have an interest in the greatest possible accuracy and consistency in the reporting of this figure."

"Just reading the Department of Commerce's description on how they attempt to adjust for changing prices in computing the GNP data shows the complexity of their task and how far from being a true measure of physical volume the Department of Commerce inventory data remain," wrote Mr. Weidenhammer.

Mr. Colm declared that "every user of inventory statistics is puzzled by the adjustments in book values" and one of the Federal Reserve banks wrote that it finds it "difficult, although not impossible, to make the inventory valuation adjustment clear to a statistically unsophisticated audience."

It was fairly easy to suggest an ideal goal. "As long as we are pondering ways of bringing about future improvements," wrote Mr. Wardwell (voicing the sentiments of many), "why not really let ourselves go and dream of the day when all business series, not only inventories, but sales and orders, stated in units of current dollars would be accompanied either by a corresponding constant dollar series or by an appropriate price index permitting the user to deflate the value data himself?" In the same vein, a number, as Mr. Gordon, noted: "It would, of course, be very handy if the monthly inventory data would be adjusted, if only roughly, for price changes. I should suppose, however, that this is not feasible." Charles T. Broderick (Lehman Bros.) added: "(The problem)—and

it is almost in the nature of a case * * * (is) that the (Commerce) statistics are dollar rather than physical figures."

There were several specific suggestions on the direction improvements might take. A. W. Zelomek (International Statistical Bureau) wrote:

"I believe that wholesale price indexes are available now which could be used in making necessary adjustments for price changes; if not, they should be supplied. It seems to me, in fact, that price information might be collected in many cases along with inventory information although I do not know whether it is within your province to suggest that this be done."

Mr. Grove and some others suggested that periodic and systematic surveys be made of the relationship among data reported in terms of book, cost, or market values "to show trends in inventory accounting methods." This would permit a qualitative assessment of the data and might, as Mr. Peterson and others suggested, permit more extensive textual appraisal of the influence of price on inventory movements. A similar suggestion was included in D. T. Smith's recommendations to help "in * * * assessing the economic impact and governmental revenue consequences of various tax proposals." Joseph B. Hubbard (Tri-Continental Corp.) went further, to ask whether company data could perhaps be compiled and shown by accounting methods used in filling out the reports, as done by the Internal Revenue Service for 1950.

Some, as Paul W. McCracken (University of Michigan), suggested that attempts to value OBE data in constant prices be made at least once a year. Others suggested concentration of deflation efforts on particular areas, for example, manufacturers' stocks by stage of fabrication. Mr. Moore felt that corresponding deflators for manufacturers' sales should also be constructed. "Insofar as possible," he suggested, "the resulting physical volume of inventories and sales should be coordinated with FRB manufacturing production indexes. This might make it possible to determine what part of the current change in production is attributable to a change in inventory investment."

At the other extreme, C. C. Jamison (Security-First National Bank of Los Angeles) and others "wonder[ed] about the reliability of price adjustments * * * and whether they are worth the effort required." "Whether valuation problems can be licked," wrote one correspondent, "is subject to question." Mr. Schmidt added: "I know of no way, short of limiting collection of inventory data to those concerns whose current records are adequate for the purpose, of overcoming this handicap in the immediate future."

C. Comments on groupings and detail required for analysis

Mr. Hubbard noted: "We should probably be getting more out of the inventory figures than a mere constituent item of gross national product. What meaning, after all, do they have for the month-to-month development of business fluctuations is the question, it seems to me that demands attention."

1. *Groupings*.—A number of writers were disposed to consider types of groupings other than those now available—within the OBE framework or supplementary to it. As one respondent commented, "the durable-nondurables break is often not too helpful in cyclical analysis."

Emphasizing the ultimate, Mr. Prankard noted: "As a long-range and possibly 'idealistic' venture, I think sales-inventories data should be compiled in such a fashion that the summation of the data would give aggregates that could be used with national income and product figures, particularly personal consumption expenditures and changes in inventory data." Along the same line, another hoped that producer goods, consumer goods, and government stocks or groupings representative of them might eventually be shown separately as in the gross national product accounts.

Others suggested groupings pointed in the same overall direction, though generally less comprehensive in scope. Mr. Cohn, for example, wrote: "It is our understanding that additional detail showing separately the inventory trends of consumer-type and producer-type goods would be particularly useful * * * in helping appraise future economic trends." Courtney C. Brown (Columbia University) suggested a division between such goods at least for manufacturing and for wholesale companies. Mr. McIntosh cited the desirability of such a division at least for durable goods. Another writer suggested a separation of buyers and sellers of particular materials; and Mr. Stark, in company with a fairly large group, suggested a breakdown between primary and finished products, at least for steel.

2. *Alternative types of detail required*.—In general, suggestions on the detail required for analysis within the framework of the above groupings took two forms, sometimes in the same letter, depending mainly on the manner in which

the problem was conceived. Some, as Oliver P. Wheeler (Federal Reserve Bank of San Francisco), asked for more industry detail:

"We recognize * * * that when we approach the question of detail, the range of information becomes almost limitless. It seems that supplying data for a complete four-digit classification would become a very cumbersome and time-consuming process and might defeat our request for promptness. Nevertheless, it may be possible to supply inventory data for some 3-digit and 4-digit industries fairly promptly. It has been our belief that if we knew more about the point at which inventories were held, the figures would be considerably more meaningful than are the broader totals."

Some asked for more product detail, as Mr. Miller:

"Businessmen and economists could do a better job if the data on inventories, sales, and orders were set up on an approximate uniform product basis going all the way to the retail stores. Information by product class would be of greater benefit than the present setups based on standard industrial classifications."

Some, dwelling also on the "book value" problem, noted certain other advantages in product detail. As one in this group wrote:

"A possible alternative (to attempting to deflate book-value figures) is a quantification of inventories by industries in terms of physical units peculiar to that industry; e. g., tons of ingot steel. If data in terms of a representative unit can be obtained along with dollar value, more accurate inventory movement within an industry can be depicted. By so doing, indicators of total inventory movement would also be improved. Even if such a quantification is feasible only for some industries, it might be a forward step. Development of inventory indexes by industry would be a logical followup to facilitate comparison and combination of individual industry data."

Some also suggested the possibility of another approach based on output and consumption data, though indirectly and generally with little enthusiasm. As Mr. Rosenbaum wrote:

"We at Sears are particularly interested in consumer goods, excluding food and automobiles. We can get very little useful information about inventories of consumer goods from existing series. We have endeavored to fill this gap by designing indexes of retail sales and value of production of consumer general merchandise. Choice of suitable base periods for these indexes enables us to identify the periods of overproduction (inventory accumulation) and production cutbacks (inventory liquidation), not as accurately as we would wish, but better than anything that can be learned from the inventory data."

(a) Industry detail and corporate data: A number of respondents cited the barrier to improved industry detail represented by the corporate basis for reporting by manufacturers in the OBE survey. Among these, Mr. Miller wrote: "The present classification scheme by corporations has only one advantage—it is easy to do both for reporting concerns and for Government agencies." Mr. Peterson noted: "Allocation of reports by major product groups of respondent companies tends to distort some categories, especially where large multiproduct firms predominate." Mr. Hubbard raised a question pointing up the difficulty of separating producer from distributor channels in views of the overlapping functions of some corporations.

There was also some criticism of the standard industrial classification (SIC) itself. One correspondent wrote: "Some revisions might * * * facilitate comparability of Government data by industry to various trade associations' industry market classifications—such as that used by the American Iron and Steel Institute in its statistical reports on shipments to steel-consuming industries. Lack of fit between such classifications is an unfortunate practical problem." Use of the SIC in the classification of corporate data by OBE, IRP, and FTC and SEC was also questioned in the correspondence on the ground that it is basically a system of classifying establishments. Partly for this reason, Mr. Bodine and others wrote: "There is little value in comparing inventories of any particular company to those of the related industry classification or to total inventories."

The differences in agency reporting bases was also noted. On the one hand, a correspondent wrote: "I realize full well that sector definitions vary considerably from series to series and agency to agency * * * these variations exist and it seems to me shall always exist * * *." On the other hand, Mr. Brown wrote: "Comparability among various data sources has been difficult to assess. This is particularly true as between the monthly industry survey of the Office of Business Economics and the annual survey of manufactures of the Bureau of the Census where, for manufacturing, the latter uses the 'establishment' and

the former the 'company.' No doubt the coordination which your committee will provide will mitigate this kind of problem."

1. *Finer detail needed in OBE manufacturing series.*—Remarks on this subject included reference to detail now available that might be further expanded—as manufacturers stocks by stage of fabrication and by industry. They also included reference to the need for separation of defense-related stocks from other stocks.

(a) *Stocks by stage of fabrication:* Many who commented on this subject regarded the OBE series on manufacturers' stocks by stage as particularly important. A major difficulty cited in connection with the use of these figures in analysis, however, arises from their being reported from the point of view of individual companies rather than that of the economy. Thus, as Messrs. I. T. Ellis, Stark, and others noted, "finished" stocks are often semifinished materials from the standpoint of the economic process. It was often suggested that publication of the "stage" data by two-digit industry might help obviate much of this difficulty. To be truly meaningful, one writer noted, this might also require some subgrouping of interim processing industries. Using the auto parts manufacturer as a typical example of an interim processor, he wrote:

"His output is reported as 'finished goods,' yet it becomes purchased material to someone else in the same industry. From a broad industrywide point of view, such output is more akin to 'goods in process' than 'finished goods' (e. g., the finished piston ring is 'in process' to produce the finished auto). Because of this interim processor factor, the 'real' proportion of goods in process in the economy is noticeably higher, noticeably more elastic, and presumably more sensitive to change than present industry reporting might indicate * * * and the flow of goods within an industry may be heavily beclouded."

Among other suggestions offered, the same writer cited the need for standardization in reporting:

"It is our impression that in present reports there may be substantial variation by company and by industry as to what constitutes inventory * * * what constitutes purchased materials, etc. As a result current industry-by-industry data is viewed with especial skepticism on our part.

"For definition shortcomings, development of standard, established criteria appears essential. Within an overall conceptual approach, methods and reporting practices may well vary by industry. Industry trade associations, such as the American Iron and Steel Institute, could be vehicles for standardizing in-industry reporting to fit accounting and operating practices peculiar to each industry."

In the same vein, E. R. King (Eastman Kodak Co.) wrote:

"A real service may be performed by your committee in emphasizing the necessity for further study and more complete discussion with the accounting fraternity in regard to the concepts and terminology involved. Every company undoubtedly keeps its records and uses terminology different from other companies in this matter of breakdown of inventories by stage of fabrication. It might help a lot if the Controllers Institute could establish some arbitrary concepts which would be workable for most companies reporting, and which would be consistent from one time to another, at least, even though not entirely logical in theory. Another approach would be to have the controllers' organization agree that each company should report on the concepts used in its own record-keeping with the realization that as long as the systems generally are consistent from one time interval to another the actual valuation in each aggregate is not of significant meaning."

On purchased materials, Mr. Hubbard felt that perhaps a further breakdown of purchased materials should be made between unmanufactured materials and purchased parts, though he noted the difficulty of drawing such a line. On in-process stocks, Clarence V. Tow (Federal Reserve Bank of Kansas City) raised a question in connection with the proportion consisting of items with a long fabrication time. "In certain categories," he wrote, "it has appeared, on occasion, that the expansion of inventory might have been related to the fact that work had been started on a large number of projects having extended fabrication times. Attempts to relate sales and inventories appear likely to be misleading under these conditions." Within the finished-goods category, one writer suggested: "It would be desirable to distinguish goods made to order from goods made to stock; whether this can be done within the present reporting framework (we) do not know, but the distinction is important for analytical purposes and because it would facilitate relating new orders and inventories."

(b) Selected industry detail: A number of writers asked for segregation within particular two-digit industry groups of categories of "strategic" significance. The choices were scattered, although, as will be noted later, many, following the product approach, selected essentially the same areas.

George W. Mitchell (Federal Reserve Bank of Chicago) specified that he would like to see electrical machinery broken down to show television and radio separately from industrial machinery; also, farm machinery apart from other nonelectrical machinery. D. C. Elliott (Cleveland Trust Co.) suggested that aircraft be shown separately under "Transportation equipment, except motor vehicles." D. C. Slichter (Northwestern Mutual Life Insurance Co.), along with C. W. Williams, noted that data on primary metals which combine ferrous and nonferrous are of little value in analyzing the current situation in either the steel industry or the copper, aluminum, zinc, or other nonferrous metal industries. Another wondered if it would be feasible or helpful to have automobiles and trucks shown separately. Allan F. Hussey (Financial World) felt that the petroleum and coal and the stone, clay and glass categories were both too broad to be useful or even meaningful. Herbert R. Hastings (General Foods Corp.) considered the food and kindred products group too broad. C. W. Williams also specified three other groups for more detailed treatment—textiles (into cotton, woolen, and synthetic), apparel (into men's, women's, and other), and chemicals (into organics, inorganics, and biotics).

(c) Defense-related stocks: The need for some distinction between inventories associated with defense production and other inventories held by manufacturing establishments was mentioned by Messrs. Gordon, Cohn, Roos, and others, including Alexander Bozic (Thomson & McKinnon), Earle L. Rauber (Federal Reserve Bank of Atlanta), E. D. King (Magazine of Wall Street), and Allan T. Buros (State Street Research & Management Co. In this group, Mr. Cohn wrote:

"During the past 18 months we have been asked to explain a specific question involving the pattern of the change in inventories, and the available statistics have not provided the necessary information for a satisfactory answer. That question relates to the effect on the private sectors of the economy of a significant change in Government procurements, particularly of such heavy goods as military equipment. Such a change should have some influence on the reported changes in private inventories. However, as indicated in the September 1954 issue of the Survey of Current Business (p. 8), 'available information does not permit an estimate of the portion of (the change in inventories) * * * which may be attributed to the change in the course of munitions production * * *.' If it were obtainable, information on the portion of private inventories which is 'on Government account' so to speak would be especially significant during periods of sharp changes in Federal purchasing."

I. T. Ellis suggested that perhaps periodic analyses could be made to show the relative importance of defense-related inventories and sales in the manufacturing total. Mr. Friend suggested "more use * * * of the potentialities for followups (normally on a sample basis) * * * to clarify current inventory developments (related to this as well as other problems) where these are of unusual size, unusual interest, or potentially subject to more than the usual amount of misinterpretation."

2. *Improvements needed in trade data.*—Messrs. Quirin, C. W. Williams, and Leo Barnes (Prentice-Hall) indicated a need for less consolidation in wholesale and retail trade data. Along with them, Mr. Miller and others cited "a lack of good retail inventory data particularly for a breakdown by type of stores. Monthly sales breakdowns are made for which there are no matching inventory data."

Apart from the above, discussion in this area was generally marked by reference to the need for unit stocks data.

(a) Department stores: As Mr. Rauber noted, the department-store series published by the Federal Reserve System are not completely representative of all retail stores, partly because of the importance of auto and food sales in the total retail trade category. In view of this, Arthur A. Smith (First National Bank of Dallas) "strongly urge(d) that this sample be widened as much as possible to include other retail firms." On the other hand, Lingan A. Warren (Safeway Stores) suggested that "the (metropolitan area) data should be examined to determine whether they are still reliable indicators in view of the movement to the suburbs. It may be that figures for downtown department stores no longer reflect the inventory and sales situation, especially in the larger metropolitan areas."

Mr. Cover felt the department-store data were not departmentalized enough: "It is * * * important to make certain that 'representative items' not only are constant in definition and as between respondents, but that the Government agencies have joint responsibility in their selection. The term 'volume sellers and most representatives in each line in each department' is confusing. Moreover, where stores are departmentalized, the common denominator of selected departments and items tends to represent the concern with the fewest departments, and results in the omission of many commodities essential to contemporary economic measurements."

J. C. Noell (Allied Stores Corp.) indicated his use of the department-store stocks data was limited, in part because "inventory figures do not include 'in transit' merchandise * * * which tends to give a false picture in a business with as fast a turn as retailing * * * (and) many holes in the data supplied by different districts prevent a uniform use of comparisons."

(b) Product detail needed: For many who wrote of it, the product approach to the problem of collecting inventory statistics offered tremendous appeal as a way of circumventing the "book value" problem, as well as more directly meeting the needs of marketing and economic analysis. Often the needs of financial and economic analysis met in the same letter. D. T. Smith wrote:

"An important consideration in * * * use of the inventory statistics is that they should give the earliest possible indication of a change in the inventory trend. The present figures might be susceptible to improvement in this respect. For example, inventory accumulation usually depends heavily on financing through bank borrowing; thus the major movements in industrial and commercial bank loans tend to correspond with major trends in inventories. However, a distinct tendency has been noted for such loans to start rising approximately 3 months earlier than the corresponding rise in inventories, and vice versa, after seasonal adjustments. In addition to a normal lag between the borrowing of funds and the acquisition of inventories, perhaps the difference may be due in part to a lag in average unit prices at which the inventories are valued under the customary pricing methods. This would suggest the need for an accurate measure of inventories in physical volume to indicate changes in trends."

Mr. Tebeau wrote:

"In general, we have found the inventory data collected by the Bureau of Mines, the Department of Agriculture, and private trade associations more satisfactory than the data published by the Commerce Department—primarily because they are published in physical units rather than in dollars. We recognize that the industry groupings used by the Commerce Department are so broad as to require the use of a monetary common denominator, but for our particular purpose we should prefer narrower groupings which might be more meaningful."

The "formidable difficulties" and cost of collecting product data were generally recognized—for example, in letters from Messrs. Stine, Homer N. Chapin (Massachusetts Mutual Life Insurance Co.), Andrew P. Ferretti (Keystone Custodian Funds), and others. As Mr. Stine wrote, with reference to data collection problems involving agricultural commodities—problems which he noted were "especially significant when the data are wanted in connection with rationing and price controls:"

"The estimates of the stocks of the storable staples, such as cotton, wheat, and feed grains are reasonably accurate. The most acute problems are in maintaining reasonably dependable estimates of the stock of perishables that are held in cold storage and freezers. Changes in processing, new plants, and warehouses, and shifts in use of facilities require constant vigilance to secure representative data."

To some the difficulties seemed insurmountable. Mr. Chapin wrote:

"We have in the past discussed with some of our borrowers the possibility of being furnished with figures giving the number of units of one or two of the most important items in a company's inventory, but so far this does not seem to be feasible."

On the other hand, Mr. Peterson felt that "for some lines at least, especially consumer durables, detail by number of items should be possible (in connection with the OBE reports)." E. R. King added:

"As a matter of fact, strange as it may seem, within our own company, dollar-value inventory data are submitted to our own company management after a very extended time lag. Our entire internal company control and analysis of inventories is almost entirely on a quantity basis, by individual product lines."

1. *Key commodities and composite indexes.*—In general, those who addressed themselves to the subject expressed the sentiment that despite certain progress in some lines, there are not enough product data for the study of strategic commodities. Mr. Robb wrote:

"It is possible that more complete statistics (are) not necessarily the answer. Strain to increase the width of the coverage might only blur the picture. Are inventories of certain commodities more significant for the problem in hand than those of others? From the standpoint of business change what inventories are the most significant? Might it not be true that a series with a narrower coverage restricted to highly significant commodities would be much more helpful? Possibly what we need is two or more inventory series—one with a wide coverage for historical purposes and another confined to commodities in areas most sensitive to business change."

Apart from appeals for data in their own lines, the discussion in this group focused on "strategic" or "key" commodities defined in terms of the variety of analytical problems such series might meet. As an overall goal, however, those concerned with this subject tended toward the possibility of broad composite indexes. Certain guides for such indexes were laid down in some of the correspondence. For example, Mr. Robb wrote:

"Already something of this kind is done in the field of price statistics. The BLS index of wholesale prices with its wide coverage is a splendid register of changes in the purchasing power of money, but students of business change find an index confined to sensitive raw materials that enter directly the maw of industry much more significant."

Mr. Wardwell wrote:

"From the broad national security standpoint, it is very desirable to have a national raw materials stocks index to match the raw-materials production data published in Census Bureau Working Paper No. 1, Raw Materials in the United States Economy, compiled by Vivian Spencer and myself. This would enable more accurate measurement of the actual raw materials consumption in our economy and the national raw-materials situation."

Messrs. Rosenbaum and Abbott felt that such physical volume indexes of inventories should be developed for finished consumer goods and should be comparable with the FRB index of consumer durable goods output. In line with Mr. Moore's thought mentioned earlier in connection with deflated series, Mr. Abbott also generalized that the "product classifications (used should be) consistent with the (FRB) index of industrial production." More generally, J. F. Kurie (Celanese Corporation of America) wrote:

"Since all inventories are important only when they can be related to the flow of goods, it is essential that the areas of coverage be defined according to the areas covered in the available flow statistics. Similarly, when the inventory information is available on a quantitative basis, it is important that the unit of measure used be on the same basis as the unit of measure in the accompanying flow statistics. The product definitions used should be those which have indicated their stability historically."

(a) The commodities selected: Reflecting the same general interest as those who asked for an industry breakdown of manufacturers' stocks by stage of manufacture, the emphasis of the choices made by those who addressed themselves to this issue was on either basic material or finished goods or on both.

1. *Basic materials.*—There was some measure of agreement on including steel held outside finishing mills in any list of strategic raw materials stocks—both by individuals within the industry (for example, Otis Brubaker, United Steelworkers of America) as well as without (Messrs. E. C. Harwood of the American Institute for Economic Research, Weidenhammer, Stark, Berridge, and Roelse). Other choices among the metals were copper and aluminum. Textiles were stressed by Messrs. Wardwell, Berridge, and Zelomek; and also chemicals, by Mr. Wardwell. An index useful for defense planning, Mr. Weidenhammer suggested, should include, along with the basic three metals, such other key materials as rubber, lumber, glass, sulfuric acid, gasoline, fuel oil, kerosene, and coal. In this category, Francis McIntyre (California Texas Oil Co.) stressed the importance of improving data on stocks of imported goods "in view of the important short-term influence of inventory movements on the United States balance of payments and, hence, on the supply of dollars abroad * * *"

2. *Finished goods.*—In general, those who considered this matter stressed finished goods held in all channels of manufacturing and distribution and, except for Mr. Peterson (apparel and other products) and Merrill A. Watson, of the National Shoe Manufacturers Association (shoes), they emphasized mainly

consumer durable goods. The pervasive importance of steel was again obvious in many of the selections. Wrote one respondent:

"Inventory detail at wholesale and retail levels is sadly lacking at the present time. Yet, these are points closest to end consumption where pressure for inventory changes, up or down, is most likely to originate. Some typical areas of importance: inventories of steel distributors, building materials suppliers, auto appliance and farm-equipment dealers (distributors and retailers). Physical unit measures of inventories, in a variety of industrial products, might be especially practical here."

"At the moment," another writer interested in household durable goods noted, "useful retail inventory data are available only for radio and television sets." On dealers' auto stocks, a question raised at times was how much reliance could be placed on the competing auto series available. Indicating the public dilemma here, Mr. Bernhard wrote: "Two automotive trade publications, for example, are the only sources for estimates of dealers' stocks of automobiles. These series are not freely available, often differ widely from each other and are openly disparaged by the automobile companies themselves."

(c) Derived inventory data—The need for consumption measures: The basic theory for deriving inventory movement indirectly is, as Mr. Glidden mentioned, fairly obvious:

"With respect to individual industry series, reliable statistics on production and shipments by their nature infer inventory information, particularly where shipments closely approximate the sales of the industry and, where statistics are available on production and sales, the inventory position of the industry is of course revealed."

Given the current condition of inventory statistics, the point was made that such an approach could at times at least be suggestive for broad aggregates (Mr. Broderick), for particular industries or preferably for particular lines of finished goods (Mr. Rosenbaum) and for particular raw materials (others). In the latter context, Mr. Weidenhammer reported in detail a method for deriving stocks of steel held by steel-consuming industries by comparing rates of shipments to these industries with estimated rates of steel consumption in those industries. This method, he noted, has been a matter of some discussion among industry and Government statisticians and has yielded useful estimates at critical times.

In general, those who referred to the possibility of further developing such indirect approaches also indicated a preference for either directly collected unit stocks data or a need for physical unit measures of consumption directly comparable with production, or both—again at key points if not in total. As Mr. Stark wrote:

"One suggestion stemming from our experience would be to consider placing some of the important inventory series on a physical equivalent basis. Another, in the case of the overall situation, as well as for selected industries or industry groups, would be to integrate production, consumption, and inventory statistics. Often it is as important to know the course of production, relative to consumption in a given situation, as to know the facts about the resultant inventory changes.

"It would be helpful, for example, to have a reasonably up-to-date basis for comparing changes in the Federal Reserve index of production with changes in broadly corresponding measures of ultimate consumption—and so to be able to view related inventory developments all the way across the board from industry to the final distribution to consumers."

(d) Regional data requirements: Discussion of the need for regional data on inventories beyond those now available was a feature of the letters from some of the Federal Reserve banks, commercial banks (for example, Messrs. Grove, A. A. Smith, and Miner H. Baker, of the Seattle-First National Bank), and others (Messrs. Sidney E. Rolfe, of C. I. T. Financial Corp., Eggert, and Cover). "The question," as one economist put it, "is really a relatively unimportant part of a much broader question: Is it possible to provide better economic data in general for different regions or States?"

Mr. Abbott put the problem most strongly:

"The interest of a regional research agency in inventory statistics is essentially that of any other agency concerned with economic analysis. Regional research, however, is concerned with the additional problem of appraising the impact of national trends on the local economy both in terms of estimates of the current situation and in terms of the longer run relation between local economic conditions and the state of the national economy."

Among other points made on this issue, Mr. Wheeler suggested, "Here we would be quite content with considerably less information than on a national basis," and Mr. Grove indicated he would welcome such figures at least annually. Some (including some of the Federal Reserve banks) felt that such needs might be partly met by better national detail on an industry or product basis (in view of the geographic concentrations of some industries). James B. Black (Pacific Gas & Electric Co.) doubted that provision of more regional data "would justify the cost * * *"

On another aspect of the problem, a few writers questioned the meaningfulness of particular regional groupings. One felt that "artificial areas, such as Federal Reserve bank regions, are of little significance to the businessman, tax assessor, or economic analyst." Mr. Rauber (Federal Reserve Bank of Atlanta) found "Commerce statistics * * * not usable on a regional basis because of the heterogeneity of the areas which they cover. The South Atlantic States, for instance, include everything on the seaboard from Maryland to Florida."

D. Comments on other needs

1. *Problem of adequate presentation of data.*—Donald E. Bishop (Bishop & Hedberg) felt that the presentation of the inventory data was satisfactory and L. A. Brophy (the Associated Press) included a statement from his Washington bureau which called it "intelligible and well arranged." A few (Paul E. Hoover, of the Anglo California National Bank, and Ransom M. Cook, of American Trust Co.) noted that the question of presentation could "more properly be answered by those media upon whose interpretation (of inventory statistics) we rely." A relatively large group questioned the failure to show more of the available data in the Survey of Current Business, particularly the durable-nondurable goods breakdown of manufacturers' inventories by stage of fabrication. Some also questioned the failure to show certain seasonally unadjusted data along with seasonally adjusted for some series in the Survey of Current Business. (To a large extent, recent changes in the Survey of Current Business tables have removed the force of these comments.)

Among other points made here, Mr. Rice thought it would "be helpful if cotton inventory data under the Government loan program and the so-called free stocks of cotton were brought together under one report issued on at least a monthly basis." E. R. King suggested that the heading of the OBE industry survey report should be changed "so that the month is listed for which data are included rather than the month that the report is being released."

The major criticism on presentation related to the need for longer historical series comparable with more recent, revised OBE data, as mentioned earlier. Mr. DuBrul, for example, wrote:

"In the case of the Commerce book-value inventories, the revisions in the postwar period have been so frequent and published so haphazardly that it is extremely difficult to reconstruct a continuous postwar series, taking into account actual breaks in the data from published materials."

E. R. King suggested that "because all the inventories series are so closely related and are used together with the sales series, the most desirable situation would be the release of all inventory revisions concurrently with all sales revisions."

Mr. Grove also questioned the order in which revised Commerce figures were made available:

"There have been no published revisions of the Commerce series for over a year, even though the inventory change estimates published in the 1954 national income supplement imply that changes have been made. It would seem logical, as well as more convenient to the user, to release the revised estimates of total book value prior to the latest estimates of inventory change based on the aggregate series."

2. *Need for more explicit description of data.*—George W. Coleman (Mercantile Trust Co.) wrote:

"I am sure also that for the guidance of the users of the data it would be useful to prepare a pamphlet explaining the relationship between (the monthly) inventory figures and the inventory figures presented under the gross national product analysis. Such a pamphlet, together with the supporting statistical data, would be useful for reference and explanation. The pamphlet should also explain the extent of coverage of various industries.

"It would, of course, also be helpful to know whether the production figures can be compared with the inventory figures for specific industries. In other words, if we could be sure that the same segment of the industry is covered in

the production, sales, inventories, and new orders figures, we could use the figures with more confidence. * * *

"What I am asking for is data that will be in such a form that I can use it to compare with other statistical series. This is a big order, but then you asked how inventory statistics could be made more helpful."

One writer felt that such descriptive information as was available should at least be repeated annually, and Mr. Gillis—also noting that his comment "applies to all statistics, not just those on inventories"—asked for at least "an increased use of footnotes in the periodic sources to indicate the basic sources where (such information) might be found." Mr. Brown felt that such information could be "more detailed and explicit."

Emphasizing particular aspects of the above, Messrs. Mitchell, Prochnow, and D. C. Hooper (Westinghouse Electric Corp.) also wrote of the need for "at least yearly" reconciliation of the GNP quarterly and OBE monthly data. Mr. Brophy and others also agreed it would facilitate analysis if the reliability of the samples used were evaluated more consistently either in qualitative terms or in specific statements on probable range of sampling errors. Another writer included the Census facts for industry releases in a reference to this lack. With respect to the national income series, Ezra Solomon (University of Chicago) noted that the seasonal adjustment of net change in inventories should be explicitly explained and, more generally, Mr. Barnes felt that "a more complete explanation of the seasonal adjustments used by the Department of Commerce would be instructive."

3. *Seasonal adjustment requirements.*—A number agreed with Mr. Berridge that "careful study of seasonal adjustment factors (now being used) should be considered." At one extreme, R. E. Williams (F. W. Woolworth Co.) expressed the opinion that "seasonals must be compiled for each individual type of business" to be of any material value. Mr. Tebeau and a representative of the Washington bureau of the Associated Press indicated that they sometimes wondered if the seasonal adjustments were being made "in the full light of the very large and significant economic changes that have taken place in recent years." In this context, Mr. Gillis cited the need for reexamining seasonals on the basis of recent tax changes, noting that "the Mills plan may exert some influence on corporate inventory policy * * * and * * * the shift in taxpayment deadline from March 15 to April 15 may alter consuming purchasing patterns and hence the inventories and purchasing orders of retailers and distributors."

A number, including James N. Land, of the Mellon National Bank & Trust Co., cited the need for seasonally adjusting certain of the inventory series—particularly manufacturers' inventories by stage of manufacture—which at the time of this survey were not so shown. Mr. Rice also cited this need for Bureau of Mines inventory data on major refined petroleum products.

Considering their "related value for analysis," Eleanor Daniel and Frances Novotny—both of Mutual Life Insurance Co. of New York—mentioned that unfilled orders should also be shown seasonally adjusted; and Messrs. Hubbard and Kulp included the flash retail sales reports in this connection.

4. *Need for precalculated stocks-sales and similar ratios.*—Mr. Coleman felt publication of turnover ratios, to the extent that the sales and stocks data were sufficiently comparable, would be very helpful in determining the soundness of credit extended in various industries. "I have from time to time found them very useful," he noted. Mr. Ferretti made a similar point for stocks-output ratios. More generally, Mr. Schmidt spoke for regular preparation and publication of a number of such ratios:

"Needless to say, the usefulness and analytical value of inventory data is largely dependent upon the availability of comparable figures on sales, new orders, and unfilled orders. Calculation and publication of inventories-sales, new orders-sales, and unfilled orders-inventories ratios—while not essential if the basic data needed for their calculation are available—would facilitate the work of those who do not have clerical assistance but must try to keep up with current developments in many areas of economic activity. In short, the importance of inventory, sales, and orders data to economic analysis would seem to warrant their monthly publication in a format similar to that of Economic Indicators and its companion Historical and Descriptive Supplement—a procedure that I would like to see standardized and applied to such major areas as construction, prices, employment, industrial production, credit, etc."

Some respondents felt that regular publication of at least the stock-sales ratios for particular aggregates might be useful in improving public perspective on inventory movements. Among these, D. C. Hooper wrote:

"I have personally reasoned, with a growing economy, that a normal change in business inventories is a plus figure in the neighborhood of about \$2 billion. I have the general impression that many of the casual readers become overly concerned about plus changes in business inventories. Any steps that bring about a clear understanding of the relation of inventory to the volume of business would be constructive."

Noting that such ratios (stocks-sales; outstanding orders-sales; stocks plus outstanding orders-sales) were available for department stores, W. F. Otterstrom (Montgomery Ward), along with Wilson Wright (Procter & Gamble), also cited the usefulness of turnover ratios. Mr. Otterstrom wrote:

"* * * in our case, it would be better if we could receive month and season-to-date merchandise turnover ratios rather than your present method of showing ratios of stock-to-sales separately for beginning and ending inventories."

A number of technical problems were mentioned in this area. G. H. Ellis noted: "We understand the (OBE) retail inventories to be valued at cost. The valuation at market price would allow more direct relationship between the level of stocks and retail sales as is possible in department store analysis of stocks and sales."

Mr. Warren felt that such ratios in this and other sectors should be seasonally adjusted. Mr. Frankard felt they should also be price adjusted. On this score, Mr. Noell, considering the current department-store data, wrote: "If we could also have price reductions (markdowns, etc.) expressed as a percentage to sales, by total store and department by cities, it would be most helpful when used in relation to the stock-sales ratio figures, in judging the adequacy of dollar stocks."

Mr. Cover, on a related theme regarding department-store figures, cited the need for physical unit data as a prerequisite for deriving the most meaningful statistics. "Particularly," he wrote, "in those instances, including trade, in which an extensive list of commodities are handled, there is need of sample reports on physical turnover of items representative of different departments and of different rates of turnover. When commodities vary as widely as ladies' hose and beds and refrigerators, the rate of turnover is related to changes in market price, inventory cost prices, accounting methods of Fifo and Lifo, the impact of special and distress sales, alterations in commodity specifications, changes in associated services, relative impact of inflationary tendencies, and the incidence of tax burdens."

5. *Need for additional and improved orders data.*—In view of the importance of information on orders in interpreting inventory movements, some writers devoted considerable space to the need for extending certain of the orders data. Mr. Hultgren wrote:

"Certain recessions have been called 'inventory recessions.' The thought implicit in such a designation is that something has happened to make businessmen think their initial inventories too large. Furthermore, it must be something other than a decline in sales, since a decline in sales eventually leads to a decline in inventories in any sustained recession. There now exist samples in which data on sales and on closing inventories are obtained from identical firms. It would be illuminating if the purchases made by the same firms for which sales and end-of-month data were obtained could be shown. (Where there is a time lag between order and delivery, for 'sales' read 'orders received' and for purchases 'orders placed.') We could then determine whether there are times when purchases are curtailed even though sales have been increasing and whether such developments are associated with unusually high inventory-sales ratios or with other factors. It would be instructive to go beyond the aggregates. In presenting the data, figures should be given separately for firms with rising sales and firms with falling sales, each subdivided according to the direction of change in purchases. I have in mind monthly data, which should be set forth in such a way that the presence or absence of a month's lag between changes in sales and changes in purchases would be discernible. Some industrial subdivision should be provided. Probably information for firms dealing in durable goods would be more rewarding to the business analyst than information for other firms."

On two aspects of the problem suggested by Mr. Hultgren, the "rationale of inventory behavior" and the "distinction between planned and unplanned accumulations," Mr. Friend felt that at least followup sample surveys should be made as required by current developments.

Mr. Moore felt that the development of physical quantity data on new orders, particularly for capital goods industries, would be highly desirable. He wrote: "Development of deflated value or physical volume inventories (if attempted) should be coordinated with development of deflated value or physical volume

new orders statistics. I feel that a very great contribution to our understanding of current economic movements can be made by the development of physical data on new orders, particularly in capital goods industries. This work is related not only to the area being covered by your committee, but also to the areas being covered by the committees on plant and equipment expectations and general business expectations, and I hope that all three committees will see fit to recommend further development of new orders and contract commitment data."

Here, also, Mr. Friend suggested sample followups, if necessary.

In connection with the retail trade series, Mr. Hubbard wondered if it would be possible to draw up a figure for retailers showing their inventory plus goods on order from their suppliers. "I have," he noted, "found this a rather commonly used concept."

Some of the discussion on orders turned on certain compilation questions. Mr. Tow, for example, noted, "While the revision of inventory statistics in 1948 presumably allowed for the inclusion of items in transit, we doubt if the volume is fully accounted for. The relative importance of this factor may be quite important at the turning points and we therefore believe that inquiry as to the completeness of the inclusion of this inventory would be desirable."

One writer questioned OBE's showing new orders (equal to sales) for certain nondurable goods manufacturing industries. "I'm sure," he wrote, "it doesn't mean anything so far as the meat-packing industry is concerned, and I doubt if such a set of figures has any economic significance, so far as the entire economy is concerned. * * * I think you can readily see that an industry dealing in a perishable commodity and having no control over the supply of its raw materials (in this case livestock) does not pile up inventories for the lack of sales."

6. *Further research required.*—Much of the foregoing probably also belongs under this heading; the following, however, were specifically labeled as research items by the writers concerned.

Mr. Roelse and others suggested that further investigation might be made of the use of inventory outlook surveys. "If such surveys could be broadened," Mr. Roelse wrote, "they might provide useful detail not available now."

Mr. Moore suggested that if statistics could be developed "to measure the discrepancies between actual and expected changes (i. e., expected by management), research should be undertaken to determine what consequences have followed from these discrepancies in the past." On a similar theme, Mr. Hubbard, noting that perhaps "basic research as distinct from technical improvement is called for," wrote: "Might not the problem of choosing the basic statistical data and the way by which to present them be approached through research on the inventory policies of business? (a) What control do the business managers actually exert? (b) What are their objectives? (c) How closely are these objectives attained?"

Mr. Coleman indicated that he had "from time to time compared changes in inventory figures with changes reported in the industrial classification of loans" and thought "it would be helpful if the Federal Reserve System would make a more complete analysis of such data and make it available generally."

An economist for a large manufacturing corporation wrote:

"Our last suggestion is that thought be given to the concept of what national inventory level is necessary or normal to sustain a certain level of output—say, for good business conditions. Such a study might lead to a better evaluation of current levels of inventory in relation to expected sales, while currently published stock-sales ratios reflect only what has happened. This is one concept we use for internal control of inventory levels, and it has proved very helpful."

Mr. Keyserling, on the same subject, wrote:

"Continuing to speak in the vein of national economic data, I believe it exceedingly desirable that work be done by the appropriate executive agencies in developing concepts of 'normal' inventory levels particularly those which are appropriate under conditions of full employment and full production. This would lead naturally into a study of 'normal' (rates) of inventory change as well. This, of course, would require separate consideration of many industries, and would require calculations of 'lead' times as well as stock levels. However, the potential uses of such information are many. I recall that the interagency interindustry economics research program of recent years was sadly limited by lack of the kind of inventory data that were needed for the so-called dynamic models. All kinds of capital requirement studies, in addition to the interindustry studies mentioned above, can make important use of the 'normal' stocks concept

and associated 'lead' times. Of course, some of this is already available in part through the inventory-sales ratio data for manufacturing and trade (which can be) provided in some detail by Commerce."

Mr. Nathan thought it "might be of interest if someone were to undertake a thorough analysis of the most sensitive sectors to determine whether changes in inventory in these particular sectors or of particularly sensitive commodities did fluctuate much more widely and much more immediately in response to overall changes in the business situations. I am not sure, but have the impression, that breakdowns of inventories are not at the moment sufficiently detailed to do too much in this direction. However, I may be wrong in that respect."

As indicated earlier, Mr. Hultgren thought the possibility of securing more data on consumer stocks of durable goods should be further explored.

D. T. Smith noted: "Information on the degree to which overhead costs are charged to inventory, the extent to which inventories represent the replacement of Lifo inventories, and the importance of inventory size in the selection of fiscal years for tax-reporting purposes, would be additionally helpful."

7. *Comments on business and Government cooperation.*—Near the end of his letter Mr. Wardwell wrote:

"The question of 'how' is clearly more difficult than 'what' and I doubt that I can be very helpful in that regard. How to achieve these improvements is, it seems to me, basically a selling proposition. The Government must be convinced of the necessity of better data and the need for adequate appropriations to enable Federal compiling agencies to do their part. More importantly, businessmen must be sold on the idea in order to enlist their active cooperation in furnishing the basic data and learning to apply the resulting information in developing more appropriate business policies. For some data, particularly those covering individual materials and products, trade associations would be in a better position to collect information from individual companies inasmuch as most voluntary reporting to Government agencies is on a company basis which lumps together data for the various individual establishments, products and materials of the reporting concern. Hence a selling effort directed especially at trade associations would seem to be almost a necessity as one feature of any program to obtain better inventory data."

A number of others devoted space to various aspects of the same theme. Among these, Mr. Zelomek, along with Messrs. Hoadley and Schmidt, implied the ultimate question concerning the "practicability of getting new and meaningful data * * * (depends) in part upon the manner in which books are kept by different industries and by firms of different size within them." One writer felt that records have improved, but others made no attempt to evaluate this matter. Mr. Hoadley implied that development of improved company records has depended partly on differences in product mix:

"Because of the nature of our operations and specifically the high proportion of durable goods in our product 'mix,' our company has been exceedingly interested in levels and changes of inventories throughout the channels of distribution. More than 25 years ago the system was established whereby the company became able to measure inventory levels and changes among our wholesalers and, at least indirectly, at retail as well. Our production planning department has had long years of inventory control. Our purchasing and inventory policy committee requires and welcomes information about broad inventory developments across the country and then determines our own policies against this background."

Statistical improvement also depends on company interpretation of agency instructions for compiling reports. This can vary considerably as Mr. Brown and others variously indicated. Mr. Hoadley felt that "such problems (caused by differing views on coverage, measurement, and the impact of price) probably can be met * * * only by careful rechecking of all figures being submitted by individual companies participating in Government surveys."

Comment beyond this point, while not very frequent, was oriented in terms of three main ideas—the need for more assistance by trade and other associations to Government compiling agencies; the desirability of direct collection by trade associations; and the possibility of Government agencies providing official guidance to interested associations.

(a) Need for assistance from trade associations: As noted earlier, one writer felt that industry trade associations, such as the American Iron and Steel Institute, could be vehicles for standardizing industry reporting to fit accounting and operating practices peculiar to each industry, and E. R. King mentioned the Controllers Institute in this respect.

In connection with statistics on stocks of crude petroleum and products available from the United States Bureau of Mines, the Department of Commerce and the American Petroleum Institute, for example, another writer noted that "The committee on petroleum statistics connected with the American Petroleum Institute constantly evaluates these various statistics and works closely with the reporting agencies to improve their use." A writer in another industry mentioned some difficulty along this line, noting that inevitably agency desires to protect the confidentiality of company reports were a barrier to the understanding needed for constructive criticism.

(b) Desirability of direct collection by trade associations: ¹

As Mr. Wardwell above, Mr. Brown wrote:

"* * * There is some question about the extent to which detailed economic data for industries should be compiled by the Federal Government. Industry data compiled and published by business firms or trade associations instead of the Federal Government may have the advantage of promptness of issue and they may further gain from the intimate understanding of the data which people in industry are likely to have. We feel that, in general, under current conditions and with current procedures and equipment, industry data can be best assembled and published by persons in that industry."

Mr. Hunt (Textile Economics Bureau) cited his own work in this connection. W. F. Bloor (Goodyear Tire & Rubber Co.) mentioned the work of the Rubber Manufacturers' Association as "an example of what an industry can do to acquaint itself with the inventory situation as an industry rather than on an individual company basis." Mr. Bloor also mentioned "R. L. Polk & Co., Automotive News, and Ward's Reports which tabulate and also publish various figures as to production, sales, and inventories in regard to the motor industry, of new cars and new trucks in terms of individual companies such as General Motors, Ford, and Chrysler." H. M. Phillips (First National Bank of Portland) mentioned the work of the National Cannery and the Northwest Cannery Associations, and some, as R. A. Fratus (Kaiser Aluminum & Chemical Corp.), in connection with aluminum stocks, mentioned their own company reporting systems.

On the other hand, one writer noted that some of these data have certain qualitative defects. Of the data compiled by the National Electrical Manufacturers' Association, he wrote, in part:

¹Prior to publication, this appendix was distributed in draft form to all respondents and some other individuals for their information and, if desired, further comment. A number forwarded remarks relating to this section. One of this group wrote:

"That idea of the trade association's collecting and publishing basic data sounds good to a trade association man's ears and may be good trade association politics, but it is not good statistics from a national standpoint unless there is some means of coordination of the trade association series; or as Wroe Alderson later expresses it, 'official guidance or supervision.' First of all, nonmembers will practically never report information to an association. Secondly, I have had trade association executives themselves tell me that they could get only 15 or 20 percent returns out of their own members on statistical inquiries. Such reporting as that hardly deserves the designation of statistics, and certainly they are not the kind of statistics we are looking for in the way of inventory."

"The entire lack of standard classifications, definitions, and a common approach even to tabulation methods means that you seldom have series from two different trade associations that are at all comparable or that can be used together."

A trade association executive, addressing himself specifically to the problem of fluctuating coverage referred to in the illustrative quotation at the end of this section, wrote:

"We have encountered this problem in the past (although it is not now present) and have always handled the matter by including appropriate estimates for nonreporting companies, to the end that the published figures will show the industry total. I will grant that this method is predicated on the reporting companies constituting a substantial coverage (say, at least 85 percent) of the industry. Any industry wants total figures for its various statistical series, even though partially estimated, and I am sure that the industry's qualified statistician should be in a better position to do the necessary estimating than anyone else; he should fully utilize his industry statistical committee and any other sources at his command to this desired end."

On the same point, A. J. Nesti (National Electrical Manufacturers Association) wrote:

"With * * * reference * * * to NEMA inventory data on major appliances * * *. The reference to fluctuating coverage of industry is misleading since it exaggerates the actual condition. For example, the NEMA data on inventories of electric household refrigerators represent 16 participating manufacturers for 1950, 1951, and 1952; 17 manufacturers for 1953; and 15 manufacturers for 1954 and 1955. In the case of electric farm and home freezers and electric ranges, we have had minor changes in participation from the standpoint of the volume of the industry represented. It is true in these two cases that we have had some shifts in number of companies taking part in the activity but, on the other hand the bulk of the industry (some 90 percent) was represented in the electric-range figures for all of the years 1950 to 1955, inclusive. Similarly, the industry coverage on inventory data for these years for electric farm and home freezers remain fairly stable."

"Although distributors' (and manufacturers') inventory data are available (for refrigerators, freezers, and electric ranges), they represent * * * fluctuating coverage of the industry as members enter and leave the association. The same situation is believed to apply to most major household electrical appliances."

(c) Possibility of official guidance to trade associations: Wroe Alderson (Alderson & Sessions) mentioned the possibility that "official guidance or supervision" might be accepted in some cases. Drawing on his experience in the Douglas fir plywood industry, he wrote:

"The publication of sales or production data for an industry may have adverse effects on business decisions unless accompanied by corresponding figures on inventory levels. The Douglas fir plywood industry is a case in point. The association for the industry publishes weekly figures on sales and shipments. There are approximately 90 mills producing plywood, each reacting independently to these figures. Most of them are quick to step up production when the sales trend is upward and just as quick to curtail it when the trend is downward. The result is a self-generated oscillation in the industry which is inimical to orderly operation.

"The plywood association would doubtless cooperate in a program for collecting inventory data under some official guidance or supervision. When we were working for them on other matters we discussed the need for improving their statistical services. While we were unable to get them started on an inventory program they did accept our suggestion that they emphasize year to date sales in their published figures rather than sales for the current week. Even this step appears to have had some moderating effect on the industry's self-generated production cycle."

In his words the possibilities came to this:

"The installation of systematic production scheduling for companies of moderate size turns out in our experience to have startling results. In a case recently completed, we found that the maximum inventory of finished goods required for good operation was less than one-third of the inventory on hand at the time. By contrast we recommended nearly a 50 percent increase in raw-materials inventory. This program will result in greater stability in production, improved service to customers, and a reduction in interest charges which in itself would pay several times over for the cost of running the system. It may be that if published inventory figures were sufficiently detailed and complete they would provide the basis for similar improvements on a broader basis than the individual firm. The figures would have to be put to work, however, through the agency of business decision in order to lead to this result."

A NOTE ON ADDITIONAL MATERIAL

Two additional appendixes will be included in this report when it is republished, in pamphlet form, by the Federal Reserve. Appendix E will describe available value series on inventories in some detail. Appendix F will list, with brief descriptive notes, all physical quantity series on stocks of individual commodities. In republished form the report will also include a number of charts showing the behavior of some of the principal inventory series since 1948.

The CHAIRMAN. Thank you, Mr. Dewhurst.

Mr. Heyman, would you care to comment on the report?

Mr. HEYMAN. Yes, sir.

I would like to comment on some of the various ways in which inventory statistics may be and are used. With that knowledge, I think we get a better picture of just what kind of additional information is needed and where the present gaps are.

Broadly, we can divide the uses of inventory statistics into two groups—those that are used primarily for the analysis of the position of individual commodities and those that are used primarily in general business analysis.

As Mr. Dewhurst indicated earlier, we have confined our study primarily to the latter group, to those used for general business purposes. We comment, for example, in our report that if our survey of users had been addressed to purchasing agents we might have come

up with different indications that we obtained by addressing our inquiry to heads of businesses and business analysts.

We certainly agree it is very important to a purchasing agent or anyone analyzing a particular commodity to know the inventory position at any particular stage of distribution. Such knowledge would have an important effect on the buying policies of a particular purchasing agent and, in the aggregate, on the buying policies of business at large.

However, taking the broader view of it, it seems to us that the most useful inventory information is that which will help in analyzing current business conditions in the broad sense; particularly to try to get clues as to production-consumption relationships in the economy as a whole and in various large sectors of the economy.

We have such an analysis to a certain extent today in the gross national product inventory-change figure; leaving out Government inventories, when the inventory-change component of gross national product goes up it means that for the private business economy production is exceeding consumption, and vice versa.

It is helpful to have this type of information, not because inventories are a lead factor in the business picture but rather because it calls attention to a maladjustment between production and consumption. This frequently leads to a correction of one sort or another.

I believe that Mr. Dewhurst in his presentation did not cover one of the rather strong recommendations we are making, and that is to try to get inventories arranged by what might be called market groupings, such as consumer durable goods or consumer nondurable goods. The more information the analyst has about where inventory accumulation is taking place the better opportunity it gives him—whether he is in business or in Government—to make reliable predictions about the future.

I believe, Mr. Chairman, that is all I would care to say now, but I would be glad to answer any questions.

THE CHAIRMAN. Thank you.

Mrs. Mack?

Mrs. MACK. I might add a point on the score of the general analysis. We felt that the study of inventories at the present time gains increasing importance because of the importance the short business fluctuation seems to be assuming these days.

The popular lingo of inventory cycle is an example, which, though it may not be accurate, catches a certain aspect that is very real about these fluctuations. In consequence, inventories play a part in Government economic management today that is impressive to somebody interested in the study of business fluctuation and its ameliorization.

THE CHAIRMAN. Mr. Shaw?

MR. SHAW. Mr. Chairman, I would like to emphasize, or reemphasize, one point made by Mr. Dewhurst, and that is that the committee tried to blend an intense professional interest in better inventory statistics with the actual uses of such statistics by Government and by business. We then tested our evaluation of needs against standards of practicability and cost.

Not only as committee members, but as taxpayers we felt that we should not make any recommendation which in our judgment did not fully warrant the cost involved.

mittee on the Economic Report and others concerned in analyzing our current situation must use.

This report—and it is a difficult thing to say publicly—is more judicious and better balanced, in my personal opinion, than any report which I have seen in the last 5 years on our statistical limitations and what should be done about them.

The CHAIRMAN. Congressman Talle?

Mr. TALLE. I do have a few questions, Mr. Chairman.

Will you turn to item 28 on page 15.

Item 28 on page 15 contains the recommendation for the publication of, and I quote: "Net changes in selected categories of Federal Government inventories."

My question is, What kind of items would go into such inventories?

Mr. DEWHURST. We had in mind two major clauses of Government inventories, one, agricultural commodities held by the CCC, and the other, the stockpile of strategic materials.

The CHAIRMAN. You refer to those in your statement?

Mr. DEWHURST. I would say that these are the principal holdings of the Federal Government with which we were concerned. There are various other Government holdings, of course.

Now, of course, we had no idea—as we indicated here—of asking for anything that would in any sense violate security considerations, and I realize that full publicity might be undesirable.

Mr. TALLE. My second question relates to item 8 on page 10, where you recommend that appropriate Government agencies explore financing, statistical compilations of inventory, and related information by private groups.

Would such complications be for a general series, or specific items?

Mr. DEWHURST. You mean for general public use?

Mr. TALLE. Well, I had in mind a general series.

Mr. SHAW. Mr. Talle, on that particular question, I think we would recommend exploration only in those areas where the resulting inventory statistics would be of general use to both business and Government. We are not making a recommendation that the Government should collect any and all statistics, so long as the industry is willing to pay for them. Rather, we limit our recommendation to statistics with recognized general value.

Does that answer your question, Mr. Talle?

Mr. TALLE. Yes, it does; and thank you, for your response.

Does anyone else choose to say anything on these two questions of mine?

I believe that is all, Mr. Chairman.

The CHAIRMAN. Thank you, Congressman Talle.

I have a few questions.

First, concerning your recommendation No. 32—what is meant in that recommendation by developing data for significant sequences of commodities at several stages of fabrication and distribution?

Mr. DEWHURST. Mrs. Mack, would you like to answer that—you have given a lot of thought to that question.

Mrs. MACK. The steel and textile sequences would be two spots at which one might at least start the type of analysis we had in mind.

Our interest stemmed from a couple of general points of view. The first appeared again in what has been said about the market groupings. It is based on the thought that a certain total change in

inventories has a different meaning depending upon where in the vertical sequence of events, from the raw material to the finished product, change takes place.

Second, when you are interested in vertical sequences, prices constitute more than their usual nuisance to the study of inventory change. Raw material prices have a very different characteristic behavior than the prices of finished goods; when inventories are recorded at book value, this distorts the picture of where the change in inventories is taking place.

Third, we thought that by latching hold of a single commodity, a sharper picture of what was occurring could be drawn. The record would not be confused by the ambiguities of differing constitution of the aggregates at each level.

Take the example of steel. One might start with ingot steel, and then continue through the secondary processing stages, the so-called consumers of basic steel and people that manufactured it into first semifinished, and then certain finished commodities of significance. Here one would want to pick certain important consumer goods, such as automobiles, possibly, ice boxes, or something of that kind, and possibly also some other type of industrial commodity such as rails or structural shapes. There are many problems in just how this notion would be carried through, but this may serve to illustrate a point we had in mind.

As to the general insights that might be expected to develop, one might say that this is perhaps one of our more adventuresome recommendations but one which should, as adventures go, offer swift and ample reward.

For one thing, it does tell a lot about basic problems in economic analysis. Usefulness would be greatly enhanced if one could have these inventory sequences along with information about production, shipments, receipts, and orders at each stage in the sequence.

Second, it might provide an opportunity to experiment with what good knowledge about inventories might do to help businessmen spontaneously to limit fluctuations in their stocks on hand and on order. In other words, does the overstocking, the overbuying of business reflect in part, their ignorance as to the extent to which general overbuying is occurring at a given time? If so, knowledge about the location of stocks might help people in the industry reduce the swings in ownership position that now take place. Certainly this would be a highly salutary effect.

Finally, we thought that the study of sequences in steel and textiles might provide a start on, and a way to explore, the broader problem of getting good measures of total physical volume inventories which also seem to us of fundamental importance.

The CHAIRMAN. Thank you.

Are there any other comments?

Mr. HEYMAN. I would like to add one or two things to what Mrs. Mack has said. It is important to recognize that we have selected steel and textiles, not because of percentage of total production they account for, but because they usually account for a much larger percentage of the fluctuations in production.

Another comment relative to an experience I had personally back in 1952 and 1953. I think it illustrates what we are talking about here and how this can be useful in economic analysis.

I recall talking with an economist for one of the larger steel companies in the fall of 1952. You will recall that there was a very lengthy strike in the steel industry, I believe in June and July of 1952, and I was told by this gentleman, who maintained an informed guess as to what was happening to steel inventories, that those inventories had dropped almost in half—the inventories that is from the steel mills on through the mills of the major consumers of steel.

There had been a decline of somewhere in the neighborhood of 8 to 10 million tons of steel, so that as the mills came out of the strike period, and we saw their production picking up very rapidly back up to capacity levels, it was pretty easy to figure than an important part of that production was not going directly into consumption at that time, but was going to rebuild the pipeline. This knowledge helped make it possible to make a more intelligent judgment as to how long the high level of business activity we had in the spring and early summer of 1953 was going to last.

It is this sort of thing we are also interested in trying to get some light on.

The CHAIRMAN. Thank you.

Is there further comment from any member of the panel?

If not, as to your recommendation No. 12, would you explain in a little more detail what is meant in that recommendation by overlapping in the figures for manufacturers' inventories?

Mr. DEWHURST. I think Mr. Shaw could answer that.

The CHAIRMAN. Mr. Shaw?

Mr. SHAW. Mr. Chairman, overlapping is largely the problem of multiproduct firms. Mr. Dewhurst in his prefatory remarks gave a few examples.

Firms like General Motors, United States Steel, and even the one which I am connected with make many products. In the Office of Business Economics industry classification such a firm is placed in that industry in which it does the majority of its business, or, if it makes many products, in that industry in which it does the largest amount of business. For example, General Motors, is classified in the automobile industry. Even though it is one of the largest producers of refrigerators and electric motors it would not be covered at all in the electrical machinery and equipment industry.

It is this kind of problem which has led us to suggest that these multiproduct concerns be approached to find out whether they would be willing to report by major departments.

Mr. DEWHURST. Mr. Chairman, there is overlapping also between manufacturing and nonmanufacturing; that is between the manufacturing firm and its wholly owned manufacturers sales branch, which is in effect its wholesaler.

Now, by getting divisional reports, we would hope that such overlapping could also be eliminated.

The CHAIRMAN. Thank you.

There is something which comes up in a number of the recommendations that I would like further explanation on.

Would you explain the objective of the market groupings of inventory data referred to in recommendations 12 and 20—market groupings?

Mr. HEYMAN. Mr. Chairman, we have touched on these before.

To show what we have in mind there, let us use the illustration this time of the electrical machinery companies.

You have two very large concerns in that field, the General Electric Co. and Westinghouse Electric Co., both of which produce heavy electrical machinery and equipment, which goes into industrial and public utility capital equipment, and also are very large producers of home appliances—television sets, refrigerators, and so on.

It is useful to the business analyst—whether he is in Government or in private business—to have some notion of just where overall inventory accumulation that may be occurring in the electrical equipment field, is taking place.

Is it taking place in capital equipment or is it taking place in consumer durables?

It is with that idea in mind that we recommend these market groupings. The gross national product accounts give us a breakdown of expenditures on a market grouping basis, and what we have in mind, fundamentally, is to try to have inventory figures that in a sense would match up with most of the expenditure figures. It would be another method of trying to have better knowledge of exactly where inventories were being accumulated or reduced. This would enable analysts, making recommendations leading to policy decisions either in business or in Government, to have a better factual basis for their recommendations.

The CHAIRMAN. Thank you.

Recommendation 19 calls for expansion of data on retail inventories.

What is the present situation with regard to figures on stocks in retail stores? I believe that has been mentioned.

Mr. DEWHURST. Yes, I mentioned it briefly, Mr. Chairman.

For a great many years, I guess three decades or more, the Federal Reserve banks have collected figures on stocks at department stores with very extensive coverage over the entire country. The Census Bureau, I believe, now gets data from chain stores.

Together, department stores and chain stores account for about 20 percent, I think, of total retail trade.

In addition, there are figures available on the stocks of new and used automobiles, but even adding these, I think the total coverage is something like a third of all retail trade, and, of course, it is not a representative coverage. It leaves out the independent stores which are more important in certain lines of trade than in other lines of trade. Our recommendation there was to attempt to get a representative sampling of the independent stores, which is already being done for sales by the Census Bureau, but which we think should be done for inventories.

Mr. TALLE. Mr. Chairman, if you will yield to me, there—

The CHAIRMAN. Certainly.

Mr. TALLE. I was thinking of that point, Mr. Dewhurst, when you were speaking at the outset. I can rather imagine, inasmuch as in the retail field there are so many business establishments which are small, that you might have some difficulty in getting data beyond those that you already have mentioned.

I think you might find some resistance in the smaller businesses because your questionnaires might not be so fully and fairly understood as they may be in the case of larger businesses.

Mr. DEWHURST. Well, we certainly recognize the difficulties of getting that information from small stores, and, as you say, the small stores are more or less typical independent retail trade.

It isn't a question, really, of getting a substantial percentage of them—in other words, getting 20, 30, or 40, or 50 percent of the total volume of business. That would involve an enormous reporting job.

But with scientific sampling, with so-called probability sampling, a very small sample, if carefully constituted, can give representation to a large universe.

Now, in this case obviously that is the only way this job could be done. Even so, I will admit that there will be difficulties in getting a sample which is suitable and representative, because you will have to have small retailers represented, and they cannot always furnish the information readily.

Mr. TALLE. There was a time when too many requests, I am inclined to think, for information were made by various agencies in Government.

I remember in the late fall of 1940, when we enacted the law which is still in force, there was much complaint about the great number of Government questionnaires. The law then enacted required a legend to be printed in the upper right hand corner of valid and approved requests for information, namely: "Approved by the Bureau of the Budget." Other requests might be disregarded. That law stopped the useless requests and freed business people from much wasted labor.

A hearing on the problem was held by the then Committee on Census and the facts gathered were used by the Committee on Expenditures in Executive Departments. Thus the hearings of one committee were useful in the passage of a bill sponsored by another committee. I remember the details well for I served on both committees.

At that time, the Government was asking for too much. I know of a business out in Wheeling, W. Va., that spent \$800 in public accountants' fees in answering one questionnaire.

The next month, they got another questionnaire, and had to hire accountants again, and by the time they were through, they found the two were seeking the same thing, though the questions were worded differently. It was a waste of money.

I was thinking that in seeking information from small business which can ill afford expert accountancy, it would require careful psychology to get the information you want.

Mrs. MACK. There has been a little experimenting along that line. One of the findings seemed to be that if the matter was properly presented, as you suggest, it made quite a big difference.

Mr. TALLE. That is the key to it.

Mrs. MACK. There must be a clear explanation of what is needed and why. But there is also this about inventory information. Most businessmen, and retailers particularly, have stocks very much in the forefront of their minds, so that a question about them doesn't seem as unreasonable as some of the other questions we might find of importance up here.

Mr. TALLE. And, it is true that people generally have great respect for Government, and in connection with that respect there is also a sense of fear, so if they get a request for something, business-

men may be a little fearful that there may be a heavy penalty attached in the event of failure to respond.

It is fear, combined with great respect. They do want to do what the Government asks them to do, but if they do not understand the purpose, the reaction may be bad, and then they begin to think the Government is quite a nuisance.

The CHAIRMAN. I think this has been mentioned, but will some member of the panel enlarge a little bit on this recommendation No. 21, which recommendation reads:

We recommend that the Federal Reserve statistics for department stores, by major department, which now cover stocks and sales, be expanded to include data on outstanding orders for selected departments or groups of departments of general analytical interest.

I am interested in an expansion of the the purposes involved in that.

Mr. DEWHURST. Mrs. Mack is our expert on that.

Mrs. MACK. In one sense, this is an extension of the thought we had in trying to get fairly clean industry-commodity breakdowns for manufacturers' inventories. At the retail level departmental information from department stores gives us cleanest inventory information by commodities now available. We start, then, with this interest the commodity information supplied by the departmental data.

Now, as to our interest in orders, the Federal Reserve Board collects information on orders for the entire store. We felt that it would be exceedingly useful to have this for several important departments simply because the kind of information provided by orders can differ quite significantly depending upon the kind of commodity-industry line to which it applies.

Information on stocks, plus outstanding orders, in a sense gives the picture of the total market position that retailers have determined to take. This position will fluctuate, depending upon judgments about business conditions. It will fluctuate depending upon a judgment about how fast deliveries can be made, the kind of selections that will be available if buying is postponed until closer to the seasonal peaks. It will fluctuate, also, depending upon expectations about prices, and changes in prices.

All of these things will have soon been reflected in changes in inventories. By getting the picture at the outstanding order level, you get a swifter statement about changes that are occurring. They will be presently reflected in the production of the retailers' supplier, and in retailers' inventories on hand. Insofar as speed in the reporting of significant economic phenomena is important to us today, this seemed to be a good spot to provide it.

The CHAIRMAN. Thank you.

Are there further comments by any member of the panel or other participant?

If not, in behalf of the subcommittee and the full committee, I would like to thank you all for your very fine work, and to repeat, for the fourth time, the assurance that I have given the other members of the other panels. It is that this subcommittee and committee, and I am sure the other people involved, have no intention of allowing the efforts into which you put so much work and time, to proceed to a shelf and there gather dust. We are in this for results.

Thank you very much.

(Whereupon, at 4:45 p. m., the hearing was recessed to reconvene at 10 a. m., October 5, 1955.)

REPORTS OF FEDERAL RESERVE CONSULTANT COMMITTEES ON ECONOMIC STATISTICS

WEDNESDAY, OCTOBER 5, 1955

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC STATISTICS OF THE
JOINT COMMITTEE ON THE ECONOMIC REPORT,
Washington, D. C.

The Subcommittee on Economic Statistics of the Joint Committee on the Economic Report met at 10 a. m., the Honorable Richard Bolling, chairman, presiding.

Present: Representatives Richard Bolling and Henry O. Talle.

Also present: Ralph A. Young, Director of the Division of Research and Statistics, Federal Reserve Board and Frank R. Garfield, adviser on economic research in the Division; Stanley Lebergott, economist for the Office of Statistical Standards, Bureau of the Budget; and John W. Lehman, clerk.

The CHAIRMAN. The subcommittee will be in order.

This is the last of a series of five panel discussions to review the findings of the task groups established by the Board of Governors of the Federal Reserve System at the subcommittee's request to evaluate statistical information available in the fields of savings, business inventories, and business and consumer expectations.

We heard during July from the task groups reviewing statistics of savings and plant and equipment expectations and yesterday from the analysts who had examined the statistics on consumer expectations and inventories. Today we meet with the economists and statisticians who have reviewed the statistics on general business expectations. We are most grateful to the Federal Reserve Board for organizing all of these studies and we are especially grateful to the individual analysts who took time out from their busy schedules to participate in these studies.

We have again asked Mr. Ralph Young, Director of Research of the Federal Reserve Board, and Mr. Stanley Lebergott, economist for the Office of Statistical Standards of the Bureau of the Budget, to sit with us for this discussion. Mr. Garfield, of the Federal Reserve Board, will sit with Mr. Young as well. Mr. Lebergott is representing Mr. Raymond T. Bowman, Assistant Director of the Bureau of the Budget for the Office of Statistical Standards.

Senator Sparkman, the third member of the subcommittee, is still abroad and will not be able to be at the hearings today. I know he regrets missing this opportunity to discuss this important question with you.

I might say also that one of the very pleasant aspects of the work of this committee is the recurring opportunities for meeting with the experts in the fields of economics and statistics. Mr. Gainsbrugh has been before our committee on a number of occasions and we again welcome him and his panel members.

Mr. Gainsbrugh, I suggest that you proceed with the opening presentation in your own way, introducing the other members of your panel either now or as they may be called upon. At the conclusion of the opening statements we will proceed with a general discussion between and among the panel members and the subcommittee. Before we start, Congressman Talle, is there anything you wish to say at this time?

Mr. TALLE. Yes, Mr. Chairman. I would like to say thank you again to the gentlemen of the Federal Reserve System. I believe that this is highly constructive work and I expect much good to come from it. Then I want to thank the members of the panel. I see familiar faces in this group. I was so favorably impressed last year when I saw the roster of names and I knew that we had capable people assigned to the task forces. The reports of the task forces are a credit to those who have served on them and evidence of wise selection by the Federal Reserve.

Thank you very much, gentlemen.

The CHAIRMAN. Thank you, Mr. Talle. At this point I should like to insert in the record the full report of the Consultant Committee on General Business Expectations.

(The report referred to is as follows:)

**AN APPRAISAL OF DATA AND RESEARCH
ON BUSINESSMEN'S EXPECTATIONS
ABOUT OUTLOOK AND OPERATING VARIABLES**

**REPORT OF CONSULTANT COMMITTEE ON
GENERAL BUSINESS EXPECTATIONS**

*Organized by the Board of Governors
of the*

Federal Reserve System

at the Request of

the Subcommittee on Economic Statistics

of the Joint Committee on the Economic Report

September 1955

LETTERS OF TRANSMITTAL

October 3, 1955

The Honorable Richard Bolling, Chairman,
Subcommittee on Economic Statistics,
Joint Committee on the Economic Report,
House of Representatives,
Washington (25) D. C.

My dear Mr. Bolling:

In connection with the request made of the Board by your Subcommittee for an evaluation of gaps in available statistical information covering the fields of savings, business inventories, and business and consumer expectations, there are enclosed copies of reports of three of the five task groups which the Board organized for the purpose.

The task group reports transmitted with this letter are:

1. Final report, in printed form, of the Consultant Committee on Consumer Survey Statistics. This Committee's report, in mimeographed form, was transmitted to you by letter from Chairman Martin dated July 11, 1955. The printed report is substantially unchanged from the mimeographed version.

2. Summary section of the report of the Consultant Committee on Inventory Statistics. The complete report will be transmitted to you as soon as available in printed form.

3. Preliminary report of the Consultant Committee on General Business Expectations. This report is still under review by the Committee members. They may wish to make minor modifications or editorial changes, but the text will remain substantially unchanged. The final report of this Committee, also, will be transmitted to you as soon as available in printed form.

All of the above reports are in the same form as submitted to us by the consultant committees concerned. Printed copies of the reports of the Consultant Committee on Savings Statistics and of the Consultant Committee on Business Plant and Equipment Expenditure Expectations, concerning which hearings were held in July, were previously transmitted to you.

Sincerely yours,

(Signed) C. C. BALDERSTON, *Vice Chairman*

September 21, 1955

The Honorable Wm. McC. Martin, Jr., Chairman,
Board of Governors of the
Federal Reserve System
Washington 25, D. C.

Dear Mr. Martin:

It becomes my pleasant task to submit to you the accompanying final report of the Committee on General Business Expectations. Our group has used to advantage the additional time since the preliminary submission of our report in July—particularly in completing its pioneer survey of expectation activities of the nation's trade associations. The results of this survey are now fully incorporated as appendix materials.

Sincerely yours,

(Signed) MARTIN R. GAINSBROUGH, *Chairman*
ELMER C. BRATT
ORIN BURLEY
ALBERT G. HART
SANFORD S. PARKER
C. ASHLEY WRIGHT
MILLARD HASTAY, *Secretary*

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DATA AND RESEARCH ON BUSINESSMEN'S EXPECTATIONS ABOUT OUTLOOK AND OPERATING VARIABLES

I. CHARTER, ORGANIZATION, AND ACKNOWLEDGMENTS

The initial suggestion for a study to deal specifically with business expectations was set forth by the Subcommittee on Economic Statistics of the Joint Committee on the Economic Report in its "Progress Report" (Report No. 2628, 83d Congress, 2d Session, August 5, 1954). This Report contained eleven major findings and recommendations designed to foster "further integration of Federal statistical activities into a more closely knit and hence more useful statistical system."

The ninth recommendation is directly in point:

The Subcommittee is requesting the Federal Reserve to explore, in cooperation with executive agencies, the adequacy of present statistics in three basic areas: (1) inventories, (2) savings, and (3) consumer and business expectations. This request includes a thorough review of, and basic research into, concepts, existing data, sources and procedure for improving these statistics.

The particular mission of our Committee was subsequently more fully outlined by Chairman Wm. McC. Martin, Jr. in his letter of December 6, 1954, describing the contemplated fields of activity of the Committee on General Business Expectations. As Chairman Martin saw it:

The language of the request indicated a desire on the part of the Subcommittee for a comprehensive review and appraisal of the present status of our knowledge in the field of general business expectation statistics and for a set of broad, but also as specific as possible, recommendations for improvements in existing concepts, methods, and statistics, including proposals for development of new statistical data if these are deemed desirable. This would also call for consideration of the purposes for which data are now being or could be used.

Surveys of general business expectations and related information are a relatively recent development in broad economic analysis, although, of course, they have been used for many years for planning by individual companies in some areas. Of necessity, much of the work has been and still is experimental in

terms of the statistical techniques utilized and the economic usefulness of the findings either for explaining the past or predicting the future. Your Committee has an unusual opportunity to provide thoughtful evaluation and direction to this promising area of investigation.

In view of the basic nature of the inquiry, the study should be undertaken on a broad basis with an eye to long-run as well as short-run objectives. Presumably part of the Committee's time will need to be devoted to problems of collection and processing of data, including appraisal of interviewing techniques, questionnaire construction, and sampling procedures, as these relate both to present surveys and to possible new sources of information.

Chairman Martin also referred to the fact that the Subcommittee's request for a survey on business expectations had led him to set up two Committees to deal with this broad subject. He stated:

Another Committee under the chairmanship of George Terborgh is making a study of expectations with respect to plant and equipment outlays. Your Committee, therefore, will need to focus mainly on general business expectation statistics and surveys.

Finally as to the scope of the Committee's work, Chairman Martin wrote:

The request of the Subcommittee is directed toward the general field of business expectation statistics, including privately sponsored as well as governmental series; in fact, most of the presently available statistics are collected and issued by private organizations. It is not envisaged that your report, or those of the other committees, should make any recommendations as to the agency or agencies, public or private, who should have responsibility for particular statistical series. You should feel perfectly free, of course, to criticize, if you like, any of the work presently being carried out in the field.

At the organizational meeting of this Committee, December 20, 1954, goals and objectives quickly became the center of prolonged discussion. Much of this arose from the uncertainty and lack of specific meaning long surrounding the term "general business expectations." Did the term "expectation" imply that the Committee was to concern itself primarily with the expectations of persons, in this instance businessmen—as an analogue of the similar Committee dealing with Consumer Expectations? Contrarywise, was the Committee expected to deal primarily with those series which indirectly reflected the expectations of business; e.g., new orders and other commitments such as new incorporations, production

schedules, employee accessions, etc.? Or, perhaps, was the Committee to deal with all the data and analyses on which an economist's expectation of the future ought to be based?

Our Committee, too, unlike the other Committees, had apparently not been asked to deal with a single (although broad) series of existing statistical data, such as savings, inventories, or plant and equipment expenditures. Was our Committee, therefore, a residuary legatee with responsibility for the entire domain of expectations data excluding only consumer anticipations on the one hand and business expectations of investment in plant and equipment on the other? Should our Committee be concerned with both long- and short-run expectations of business; with expectations for individual industries as well as for the economy at large? Were we also to consider from the standpoint of forecasting needs the adequacy of available statistics on general business activity?

After consultation with numerous experts both in and out of government, and further intensive debate within the Committee, it was decided to confine the scope of this Committee's investigation to:

(1) The role assigned to business expectations in economic theory; their influence upon the general public and government, as well as business in general.

(2) Description, appraisal and critique of several of the existing short-run measures of direct business expectations; also a special survey of the activities of trade associations in the expectations area and use of such data as a broad industrial base upon which to build general expectations.

(3) A review of existing indirect measures of business temper and tempo—e.g., such foreshadowing series as new and unfilled orders, employee accessions, length of workweek, forward investment commitments, etc. However, in this review primary emphasis would be placed upon the adequacy of such series as substitute or alternate measures of direct business expectations.

(4) How business expectations are formed and influenced. Internal and external factors influencing business expectations were to be examined, in the belief that profitable lines of additional research in this area could be outlined at the close of our study. It was decided to avoid any full-dress discussion of forecasting methodology

and to focus our attention on matters closely related to the question, what do businessmen expect to happen in the future?

Each member of the Committee undertook the preparation of one or more working papers dealing with these four major sectors.¹ These working papers were then circulated among the Committee for criticism, comment and extension, and then integrated in this final report. The report is thus a team effort which reflects not only the views of every member of the Committee, but in addition has also been further enriched by the numerous suggestions and counsel the Committee received from a long list of business, academic and government technicians, familiar with the history and development of expectational economics, with whom it consulted.

In its exploration of this largely unworked field, the Committee would likewise have benefited from findings which would be ultimately forthcoming from the work of its sibling Committees on savings, inventories, new plant and equipment, and consumer expectations. Research, however, proceeded simultaneously on all five fronts. Our Committee was from the outset kept well informed of the avenues under exploration by the other groups. Unfortunately, however, their findings and recommendations, which might have influenced the character and orientation of our research, could not be forthcoming until they, too, had first plowed the field before reaping the harvest.

In this sense, as well as in many others, ours is still a highly preliminary and tentative report, rather than closely integrated with the other reports, as might be expected of a residual task force. It stresses the early stage of development in which we currently find ourselves and our limited knowledge of the decision-making process in industry. And yet our findings are sufficiently positive, we hope, to underscore the desirability of further allocation of resources to this research channel. We are gratified that, as yet, there has been no "band wagon" movement toward rapid and widespread proliferation of research in this field. Progress in this direction has undeniably been slow over the past decade, but we are also impressed with the steadiness of its growth and with the improved "fore-

¹ As developed for this report, these working papers justify the following ascriptions of primary authorship: Albert G. Hart, Chaps. II and VII, and Appendix B; Orin E. Burley, Chap. IV; Elmer C. Bratt, Chap. V; and C. Ashley Wright, Chap. VI. Chap. III is the joint product of Elmer C. Bratt, Martin R. Gainsbrugh, Millard Hastay, and Sanford S. Parker; and Chap. VIII is a joint formulation of the entire Committee.

shadowing" performance, particularly in recent years, of the limited number of series already in existence.

* * *

During its eight months' existence, the Committee held eleven meetings, eight of them executive in character at which the scope of the Committee's responsibilities was agreed upon, work assignments were made, and working papers and successive drafts of the Committee's report were discussed. The remaining three meetings were devoted to interviews with private and governmental compilers or users of data on business expectations, and with high ranking business executives who outlined the process by which expectations are formed and implemented by business concerns.

The following presents the schedule and places of Committee meetings, together with a list of persons other than Committee members who participated in them.

December 20, 1954, in New York

Paul W. Simpson, Board of Governors of the Federal Reserve System

January 14, 1955, in New York

Ralph A. Young, Board of Governors of the Federal Reserve System

D. Harry Angney, Federal Reserve Bank of Boston and Board of Governors of the Federal Reserve System

January 21, 1955, in New York

February 1-2, 1955, in Washington

Howard Bowen, Williams College

George Katona, Survey Research Center

Stanley Lebergott, Bureau of the Budget

L. N. Woodworth, Joint Committee on Internal Revenue Taxation

Louis J. Paradiso, Department of Commerce

David Lusher, Council of Economic Advisers

Frederick Waugh, Department of Agriculture

Nathan Koffsky, Department of Agriculture

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Ruth P. Mack, Consultant Committee on Inventories
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February 7, 1955, in New York

March 7, 1955, in New York

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Heinz E. Luedicke, Journal of Commerce
James J. O'Leary, Life Insurance Association of America
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Ralph J. Watkins, Dun and Bradstreet

March 15, 1955, in Washington

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April 7, 1955, in New York

June 8, 1955, in New York

June 21, 1955, in New York

July 14, 1955, in New York

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II. PRESENT KNOWLEDGE OF BUSINESS EXPECTATIONS

American business is forward-looking. Business action today reflects the view of the future that businessmen now hold. Many of the forces that will shape the future act largely by shaping business expectations, and can best be grasped by studying those expectations.

Classification of expectations. In relation to action, business expectations can be classified into intentions, market anticipations, and outlook.

Intentions are plans for action in matters where the firm in question can make binding decisions. This class of expectations includes scheduled production, employment, procurement, and equipment-installations. For firms in a position to set their own prices, it includes pricing.

Market anticipations are expectations about the interplay between the firm's actions and its environment. This class is typified by the sales forecast, which depends on reactions by customers to the firm's product design, price offers, and sales promotion. Other expectations in this class are plans for financing, inventory expectations, and price expectations for firms that are not in a position to set their own prices.² The firm is not merely a passive acceptor of the events covered by market anticipations—often it can influence these events, and is much concerned to do so—but neither is it in a position to decide upon them and enforce its decision.

Outlook is a term for expectations about conditions which the firm cannot perceptibly influence, but which will help shape its markets. This class of expectations includes forecasts of the general economic situation—for example of the level of gross national product, rate of government expenditure, foreign markets, tax rates and regulations. It includes also forecasts of the position of

² Inventory expectations are a fascinating hybrid of intentions and market anticipations—illustrating the fact that these two classes shade into each other. Evidence brought before our Committee indicates that in many cases firms have inventory schedules running as far as fifteen months ahead, though their production schedules may not be definite for more than (say) three months.

An inventory figure for (say) twelve months hence must be an *intention*—a target to be attained if sales prospects then are normal, implying that over the year production and procurement will be held enough above or below sales to bring inventory from its present level to the target. On the other hand, an inventory figure for (say) a month hence is a market anticipation in many instances—registering the excess of present inventory plus intended production and procurement over expected sales.

the industry of which the estimating firm is a part. (In this terminology, an oil company's estimate of total gasoline sales is *outlook*; its estimate of its share of the market is *market anticipation*; its projected sales campaign for realizing that share of the market is *intention*.)

Outlook estimates and market expectations may be framed within the firm or taken over from some outside estimator. If framed within the firm, they may be expert judgments (e.g., estimates of industry prospects by competent market-analysis staffs in many big companies, or intuitive sales-forecasts by experienced executives who "have the feel of the market"); or they may be amateur opinions on matters the estimator cannot really judge. Expert judgments may have appreciable evidential value in their own right. Amateur judgments are likely to be useless as direct forecasts of the magnitudes involved; but if the firms in question build them into their plans, amateur judgments still have evidential value in relation to what the firms in question are likely to do.

Uncertainty of expectations. Expectations of all these types are held with some degree of uncertainty. Estimators realize that for many of the things they are estimating it is almost impossible to be exactly correct: every figure for the future given by an intelligent estimator has attached to it some sort of proviso.³ If a company "expects to sell 115,000" cars next month, that is apt to mean "will probably sell between 110,000 and 120,000."

For the very near future, it seems intentions and market anticipations are often single-valued—that is, can be represented by clear-cut single figures. The need to decide on action forces management to adopt some definite figures and proceed with final decisions as if these expectations were certainties. Cases do sometimes arise, though, where expectations go so far awry that decisions intended as final have to be reopened.

Looking somewhat farther ahead, firms commonly have to map out a line of action for the next few months, but retain a good deal of freedom to reshape this line of action as the situation develops.

³Exception: There are some objects of estimation that are quite likely to remain unchanged. A forecast that next year's tax rates will be just the same as this year's has a good chance of being precisely right. But even with such magnitudes, the size of any change is uncertain. We may say that if a 52 per cent corporate tax rate is changed, it will be downward, and by a small amount; but a forecast of (say) 49 per cent has not much chance of being precisely right.

It is clear from the evidence laid before our Committee that many firms visualize the oncoming months in terms of a fairly integrated operating plan, with sales-forecasts, rough production schedules, estimates of cash position, and the like stated as single-valued figures that have to mesh together with some consistency.⁴ In such firms the planners are aware, of course, that as they firm up their decisions for final action they will diverge from the provisional plan.

Looking still farther ahead, some decisions call for roughing out parts of a firm's operating plan and market anticipations for years ahead. To decide whether new plant should be installed this year or next, a firm must have a rough idea of its sales for a season or two ahead (broken down enough by products to be translated into plant requirements). McGraw-Hill finds a good many firms with sales forecasts as far ahead as 1960.

There are indications that integrated advance planning is widespread among large firms in industries with substantial "lead time"—that is, where commitments for input must be made well ahead of the availability of corresponding output. The expectational statistics dealt with in this report indicate that there is also a good deal of responsible estimation and planning among medium-sized firms.⁵ But we are very much in the dark about the extent and character of such planning, and about the extent to which business planners (like military strategists) work out alternative advance plans for different contingencies.

For the present, it is probably wisest to treat intentions data as registering what people plan to do unless they change their minds. Similarly, market anticipations and outlook are for the present best regarded as registering what people think will happen unless some unexpected influence intrudes. Our inability at present to better this formulation reflects a dearth of evidence that seems to call for field research.

⁴It seems possible that in some instances the firm's plans recognize uncertainty by incorporating variant estimates of the same magnitude for different purposes. Thus sales may be estimated (a) for the sales department in terms of targets for the various sales branches that add up to rather more than can probably be sold; (b) for the production manager and personnel department as close as possible to what can probably be sold, with an eye to efficient procurement and staffing; (c) for the controller's office on a basis that errs on the low side rather than the high side in estimating receipts. To find and study such variant estimates is a fascinating problem for research.

⁵The field studies by Dun and Bradstreet, which seem to have a good deal of evidential value, represent primarily firms with less than \$1 million of "estimated tangible net worth," (See Chap. III).

Expectations in economics. "In economics", as Jevons said generations ago, "bygones are forever bygones." This dictum seems to be almost universally accepted by economists. If the past is dead and the present only a hair-line between past and future (the locus of decision), we might expect that economics would be pictured as about the future—an analysis of forward-looking decisions in terms of expectations. Not so! The great body of economic theory consists of "statics," with its expectational content between the lines.⁶

This way of handling economics does not indicate that economists have been stupid or out of touch with the world. Rather, it reflects preoccupation with problems for which statics yields unbiased simplifications. The network of economic quantities is too complex to allow us to carry in our analysis any complications that are not highly relevant. As economists have become more concerned with problems for which expectations are of central importance (notably business fluctuations and economic growth), expectations have come to the surface in economic theory.

The fact that gives the key to expectational analysis is that input must be used before output can be had. Where this input-output lag is large, forward planning is urgent. This fact is also crucial in the theory of capital: capital may be looked at as the accumulation of inputs that have been used for output that has not yet appeared. Formal analysis of expectations thus begins with a chain of works on capital: John Rae's *New Principles of Political Economy* (1834), Böhm-Bawerk's *Positive Theory of Capital* (1876), the Swedish work of Wicksell, and Irving Fisher's *Rate of Interest* (New York, 1907).⁷

Another key ingredient of expectational analysis was contributed late in the 1920's by Swedish followers of Wicksell—the insistence on before-and-after ("ex ante" and "ex post") analysis of each event. At about the same time (largely through the work of Charles Roos), expectational variables began to crop up in mathematical

⁶ This tendency went so far that Frank Knight's celebrated *Risk, Uncertainty and Profit*, Boston, 1921, was written without explicit reference to expectations. Since uncertainty is nothing if not an attribute of expectations, this might be regarded as a surprising feat. Yet practically none of the references to this book in the literature mention this peculiarity.

⁷ It is no mere coincidence that two of the leading books on expectational economics (J. R. Hicks, *Value and Capital*, Oxford, 1939; E. Lindahl, *Money and Capital*, London, 1939) represent attempts to develop this strand of capital theory into a theory of business fluctuations; though F. A. Hayek (*Prices and Production*, London, 1932) starts with the same foundation and objective and develops a nonexpectational theory.

economics. The work of Keynes and his disciples in the 1930's, while it did not contribute much to substantive analysis, widened interest in these problems by insisting on the expectational character of the "marginal efficiency of capital."

Over the past twenty years, the problems of expectations and uncertainty have been under study by a strong and growing group of theorists in the United States, in England, and on the continent (especially in Scandinavia). This group includes among others, Gunnar Myrdal, Erik Lindahl, J. R. Hicks, Ragnar Frisch, A. G. Hart, Jacob Marschak, Gerhard Tintner, Holbrook Working, George Katona, G. L. S. Shackle, Ingvar Svennilson, Franco Modigliani, Bent Hansen, John Mars and E. F. Carter.

As the subject develops, a number of lines of thought are converging: analyses of futures markets; theoretical models of hedging behavior in production; the statistical methodology of sequential decisions; models of decentralization and delegation of authority; operations-research analyses of inventory control; various aspects of the theory of games, theories of learning, etc. As can be seen from this list of converging lines, economists are learning here to cooperate with other social scientists; and an interdisciplinary "Conference on Expectations, Uncertainty and Business Behavior" was held in October 1955 by the Social Science Research Council.

On the side of fact-gathering, systematic work on intentions goes as far back as the early 1920's, when the Bureau of Agricultural Economics began to study farmer's plans to plant and to breed livestock, and the Association of American Railroads began to ask shippers about prospective carloadings. During World War II, the celebrated "Markets after the War" study of the Committee for Economic Development combined a field study of intentions to invest in plant and equipment (in the light of sales prospects) with a missionary endeavor to get businessmen to "raise their sights."

Since the war, data on intentions, market anticipations and outlook have been collected by a number of agencies. Most of the continuing work, leading to time-series of expectational statistics, will be reviewed either in this report or in the related reports of the Committee on Consumer Expectations and the Committee on Plant and Equipment Expectations.

In addition, a number of more fundamental studies have been made, aimed to clarify the working of forward-looking business decision processes. Most have been studies focussed entirely on investment decisions, with which our Committee is not concerned. The most ambitious expectation study to date, however—the Merrill Foundation project carried on in 1949-53 at the University of Illinois under the direction of Franco Modigliani—made a useful start at the study of operating plans as well as investment. Intermittent work on the firm has been carried on at the Survey Research Center at the University of Michigan, where George Katona puts particular stress on the value of interviews aimed to measure attitudes on business outlook. Abroad, the Ifo-Institute for Economic Research at Munich has been studying changes in operations of manufacturers and traders in the textile field, with special emphasis on before-and-after figures for an identical group of firms.

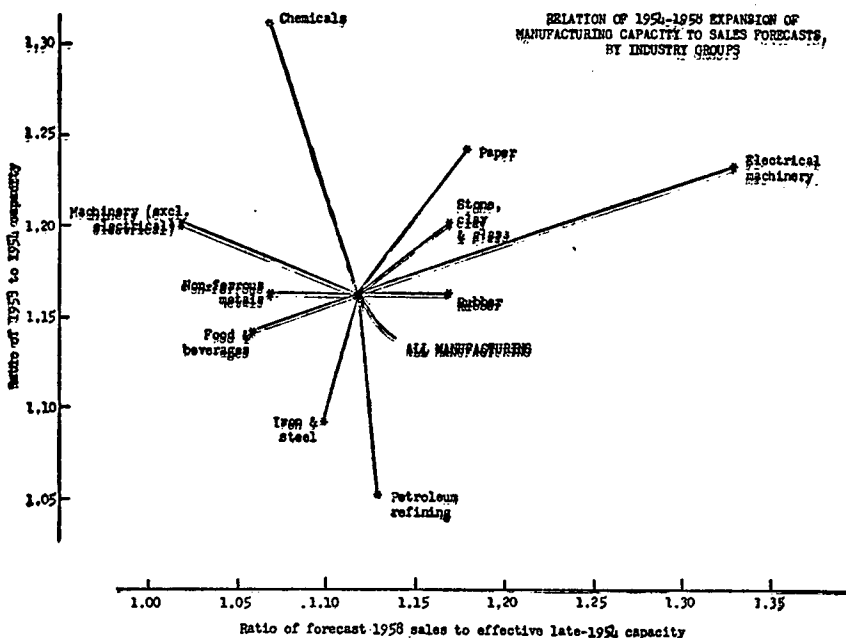
Significance of long-run expectations. In the study of investment in buildings and equipment—the field of one of our companion committees—the expectational approach is well established. One of the most successful statistical innovations of recent years has been the establishment of periodic investment-intentions surveys at the Department of Commerce and SEC, and at McGraw-Hill. In both surveys, the sales-forecasts of the firms sending information are tabulated as background information. Unfortunately, we are not provided with cross-tabulations of firms by sales forecast and investment intentions.⁸

⁸ The McGraw-Hill data of Apr. 22, 1955, can yield a cross-comparison by industry of the expected expansion in sales and in capacity. The result (see following chart) is disconcerting.

Both 1958 capacity and 1958 sales are shown in the chart as ratios to 1954 capacity. For capacity, this ratio can be calculated for most industrial groups directly from Table VI of the McGraw-Hill memorandum of Apr. 22, 1955. For sales, the calculation has to be pieced together. Table VII offers for late 1954 a set of ratios of output to rated capacity and "preferred rates" of operation; dividing the first by the second yields each industry's output as a ratio to what we may call "effective capacity." Table V offers forecasts of the growth of sales from 1954 to 1955 and from 1954 to 1958; we may get rough figures for the growth from late 1954 to 1958 (to match the dating of the late-1954 ratio of output to effective capacity) by subtracting a quarter of the 1954-55 increase from the 1954-58 increase. Multiplying the prospective growth of sales from late 1954 to 1958 by the ratio of late-1954 output to effective capacity yields an estimate of 1958 sales as a ratio to late-1954 effective capacity.

We would expect the ratio of planned growth in capacity to match the ratio of 1958 sales to late-1954 effective capacity. For manufacturing as a whole, the ratios do match very well: the first ratio is 1.12 (for about $3\frac{1}{2}$ years) and the second is 1.16. But for the

Footnote 8 (Continued)



Source: McGraw-Hill memorandum of April 22, 1955.

ten industry-groups for which we can get both ratios, the matching is poor. The ratios (corresponding to the points graphed in the chart) run as follows in order of prospective increase in sales:

Industry	Sales forecast: ratio of 1958 sales to late- 1954 effective capacity	Capacity-expansion intention: ratio of end-of-1958 to end-of-1954 capacity
Electrical machinery	¹ 1.33	¹ 1.23
Paper	¹ 1.18	¹ 1.24
Rubber	¹ 1.17	1.16
Stone, clay, and glass	¹ 1.17	¹ 1.20
Petroleum refining	1.13	² 1.05
Iron and steel	1.10	² 1.09
Chemicals	² 1.07	¹ 1.31
Nonferrous metals	² 1.07	1.16
Food and beverages	² 1.06	1.14
Machinery	² 1.02	¹ 1.20

¹ Perceptibly above average.

² Perceptibly below average.

The average of the ratios of capacity-expansion is just the same (1.18) for the five industry-groups lowest on the sales-forecast scale as for the five highest!

The effect of the structure of sales forecasts on the structure of expansion plans, in short, is not visible in comparisons of industry averages. To find out about it, we would need ratios for individual firms. It seems safe to forecast that a chart on the same plan for firms in a given industry would show a clear-cut positive relationship between the ratios.

Many economists feel that the almost continuous high activity of the American economy since World War II, and its resistance to recessions in 1949 and 1954, reflect firmer advance scheduling of investment than used to exist. Furthermore, we may reasonably hope that the long-term expectations which underlie investment planning are less sensitive than before World War II to changes in short-term prospects. As R. A. Gordon points out, business fluctuations show only "minor cycles" so long as such long-run expectations remain bright irrespective of minor setbacks.⁹ If long-term expectations become more vulnerable, major recessions become more likely.¹⁰

Forecasting value of expectations for operations. Interest in expectational evidence naturally centers on its forecasting value. How great is this value?

There is no use considering this question in much detail here, since available evidence is examined piece by piece further on in this report. But a brief preview may make it easier to follow the drift of the evidence.

To begin with, two distinct kinds of forecasting value come in question. We may take expectational evidence either (a) at face value as a direct forecast of the events to which the expectation refers, or (b) as an ingredient in a forecasting process that combines expectational with other evidence.

Looking first at expectations as direct forecasts, their value varies greatly according to what we aim to forecast. Intentions, to a considerable extent, register lines of action which the firms in question will stick to unless pressure is very strong. There are many business reasons for mapping out operations well in advance. Even when plant-and-equipment decisions are not at issue, many firms

⁹ R. A. Gordon, *Business Fluctuations*, New York, Harper and Bros., 1952, pp. 266, 267.

¹⁰ One recent piece of good news may carry disturbing overtones. McGraw-Hill finds that between autumn 1954 and winter 1955, manufacturing firms increased their planned investment for 1955 by no less than 10 per cent. Part of the change is doubtless mere filling in of plans which had not been fully visualized at the earlier date. But McGraw-Hill interprets the change as chiefly the response to a reinterpretation of market prospects between the two dates. When we remember that all that happened between the two dates was a continuation of a recovery already under way at the earlier date, it would seem that the investment response was rather large. If underlying long-term expectations were stable, there must at least have been a reconsideration of the factors which decide a firm whether to push ahead now with a project it is sure makes long-run sense, or to wait awhile. This episode raises the question whether a relatively mild downturn of business might lead to a serious degree of postponement of such projects.

have to look months ahead in order to organize a smooth and balanced flow of components for their products—neither clogging their plants with unused components nor being held back by lack of them. The cost of training workers is another reason for looking ahead: there is no use taking on trainees, employing them for several months during which they do not fully carry their weight, only to drop them for lack of work just when they are fully trained. Besides wasting the costs of training, such a policy is apt to impair the firm's rating with the unemployment compensation fund. (Under the wage contracts now shaping up, it will become still more expensive.) Thus firms may know well ahead what they are going to do. The German study of textiles mentioned above finds that the 793 instances in which manufacturers expected their output to rise from month to month included only 27 instances in which their output actually fell; the 634 instances in which manufacturers expected their output to fall included only 27 in which output actually rose.¹¹ This is in an industry where the planning-horizon is fairly short. The firmness of production schedules in industries with long lead-time is higher. In fact, in the industries that produce capital equipment, it is so great that the editors of *Fortune* (after consideration of other sources) have preferred to base their capital-installation forecasts on the sales-forecasts of makers of equipment rather than on the intentions of buyers of equipment or on more complex forecasting procedures.

On the other hand, there are indications that intentions may change fairly fast about the time of business turning-points. A study of steel operations made for this report (using as indicators of planned operations the ore shipments and stocks just before Great Lakes shipping closes down for the winter) suggests, for instance, that in the winter of 1953-54 operations in December were about 5 per cent below what was planned about the first of November; in January, 9 per cent below, and in February, 17 per cent

¹¹ O. Anderson, R. K. Bauer, and E. Fels, "On the Accuracy of Short-Term Entrepreneurial Expectations," *Proceedings of the Business and Economic Statistics Section, American Statistical Association*, (covering the Montreal meeting of September 1954), Washington, 1955, pp. 124-147.

The figures cited (p. 138) unfortunately incorporate no seasonal adjustment, and are not classified to show how far manufacturers who forecast expansion were moving against the stream. For further details on the German surveys of expectations, see Chap. III.

below.¹² The shippers' quarterly forecast of carloadings, furthermore, seems generally to miss turning-points. The direct forecasting value of intentions, then, is probably higher for mapping the course of an upswing or downswing in progress than for locating a turn of business.

The forecasting value of intentions, market anticipations and outlook data is much enhanced when these pieces of evidence are used not as direct forecasts but as forecasting ingredients, along with other types of evidence.¹³ As compared with lead-and-lag forecasting formulas relating outcomes to preceding events, compound formulas that relate outcomes to preceding events and expectations are considerably more powerful. Experiments so far have been with intentions and market anticipations.¹⁴ It seems likely, however, that outlook data will also show this sort of net forecasting value in formulas that combine them with other data.

Stabilizing effect of knowledge about expectations. Is there any danger that the publication of evidence on expectations may render business operations more unstable? It is well known that in some human activities there is a "band-wagon effect," when some people see what others are doing and try to do likewise. Is this a danger in the field of business fluctuations? And could expectations studies make it worse?

The upshot of our Committee's thinking on this question is that the bandwagon effect is an element in economic instability, but that the study of expectations should mitigate rather than enhance instability from this source. Business cycle theory has always recognized feed-back mechanisms that work through business psychology, and the recent stress on "induced investment" has brought

¹² See Appendix B. Employment statistics suggest that the steel industry made no move to reduce its staff for many months after seasonally adjusted sales figures turned down, while working hours sagged sharply—confirming the impression of a rather sudden downward revision of operating plans.

¹³ This point is put with great cogency by George Katona (point III of his memorandum, Appendix C).

¹⁴ The National Bureau experiment with Dun and Bradstreet data on the usefulness of compound formulas that use both intentions and recent actual changes is reported in Chap. III. Another experiment (combining shippers' forecast data for cement shipments with Department of Commerce data on inventories) shows that such a formula forecasts output much better than a formula using inventories and previous output. See F. Modigliani and O. Sauerlender, "Economic Expectations and Plans of Firms in Relation to Short-Term Economic Forecasting," *Short-Term Economic Forecasting (Studies in Income and Wealth, Vol. XVII)*, Princeton, Princeton University Press for the National Bureau of Economic Research, 1955, pp. 332-342.

these mechanisms into new prominence. But there seems no danger that they will swamp the policy machinery of economic stabilization—particularly if the stabilizers are well informed.

An economic upswing, by generating optimism, can increase its momentum. If producers feel business volume is rising (and suspect prices may rise too), they will want more inventory. If their customers are impressed by the same news that makes producers optimistic, their efforts to stock up will expand producers' sales, confirming their market anticipations. The bulge in incomes that goes with a rise in activity will strengthen sales at the consumer end. The supporting effect on final markets of rising incomes is weakened by "leakages" insofar as rising income leads to larger tax payments, savings and imports. On the other hand, this supporting effect is strengthened insofar as the rise causes savings to be used to buy consumer durables, houses, and business plant and equipment.¹⁵

A downswing, on the other hand, is also capable of outrunning the limits set by inventory-liquidation efforts and the "leakages" if it induces such pessimism as to reduce investment sharply. Even though long-run confidence is left intact, a sense that it will be a couple of years before new installations can start to pay off may lead to a good deal of postponement of investment.¹⁶ If into the bargain a couple of bad years could persuade businessmen that the long-run future was bleak, the psychological feedback from recession might make recovery very difficult.

In this context, we can now ask again whether compiling and releasing data on business expectations might make fluctuations harder to deal with. Our answer cannot be entirely definite because there are so many unanswered questions. But it seems fairly clear that under present-day conditions there is no real risk in releasing such data.

It does seem likely that to tell business men more about each

¹⁵ A few years ago, many economists would probably have asserted that "leakages" prevented such an upswing from supporting itself fully, and guaranteed its reversal once inventory expansion slackened. In the profession today, there is heavy stress on "induced investment," and on the possibility (which of course nobody asserts is a certainty) that this may outweigh the leakages even without continued inventory expansion. This shift in view is exemplified (and in good part induced) by J. R. Hicks' *Trade Cycle*, Oxford, Clarendon Press, 1950.

¹⁶ See footnote 10.

others' intentions, market anticipations and outlook may intensify the responsiveness of expectations to waves of feeling. When a change of opinion is going on there are always some people who take little notice and stick to their previous view. If people so inclined receive more news about how others interpret the situation, it is a reasonable guess that more will go with the tide, and the stabilizing influence of individualized opinion-formation may be weakened. On the other hand, it must be remembered that systematic research on expectations is only one of the possible channels of this feedback. There has always been a great deal of talk about business opinion; and there are always would-be leaders of opinion who try to enhance their authority by claiming that their extremist views are widely shared. Such claims about the trend of opinion, unchecked by responsible inquiries into the facts, may well be more unsettling than would be an objective report as to how opinion is shaping.¹⁷

There is a cult of "contrary opinion," which holds that when any strong consensus exists it is sure to be wrong. Economists on the whole would probably go part way with this view, and insist that if consensus is reached by swallowing a prefabricated opinion from outside (rather than as the result of each person's using his own best judgment), it is subject to the risk that that prefabricated opinion may be wrong. Thus Modigliani's analysis of the *Fortune* survey of executive opinion shows that in 1947 executives as a whole held pessimistic outlook-views on the course of GNP, but held more optimistic market-anticipation views on their own sales—which added up to a fairly correct forecast of GNP.¹⁸ Had they let their own intentions be colored too much by their outlook views, they might have brought on a quite unnecessary recession. On the other hand, when a consensus represents a number of people reaching the same answer by applying their own common sense to well understood facts, the fact of consensus should be reassuring rather than alarming. One of the gratifying trends our Committee finds is the growing number of companies and business advisory services now capable of thorough critical analysis of broad economic fore-

¹⁷ It should also be mentioned that in the absence of data, business leaders who try to be reassuring in times of downswing are suspected of "whistling to keep up their courage," and may not carry the weight they are entitled to.

¹⁸ Modigliani and Sauerlender, in *Short-Term Economic Forecasting*, pp. 291-294.

casts. The likelihood that an artificial consensus of business opinion could be set up by a mere wave of fashion or a clever propaganda campaign seems to be receding, not growing.¹⁹

The danger that a feedback of business psychology may make an upswing inflationary or make a downswing hard to reverse, finally, is much reduced if business has justified confidence that government is working effectively to bring about prosperity without inflation.²⁰ In such a situation, even if there is a recognized general tendency to schedule declining output, nobody has cause to "project" this tendency into the onset of a major depression and act accordingly. On the contrary, in such a situation investors feel they must be alert not to let bargains get past them. In the other direction, if business seems to be expanding at a rate that might presently make the situation inflationary, it is sensible to forecast that government will attempt to avert any serious inflation by tightening credit and refusing tax cuts that would otherwise be appropriate. This sort of expectation that government will have an effective stabilization policy, which today seems to be the general view, makes it very unlikely that the general mixture of expectations held by business will produce dangerous instability—with or without expectational research in process.

III. APPRAISAL OF DIRECT MEASURES OF BUSINESS EXPECTATIONS

Though interest in business expectations has enjoyed a remarkable recent growth, it is not a new phenomenon. Its theoretical origins have been outlined in Chapter II, and reference was there

¹⁹ Like most economists, our Committee is unimpressed by the argument that the recent upsurge of the stock market shows some sort of tendency toward business self-hypnosis. While it is never possible fully to "explain" a broad stock-market movement, there are a number of strong "objective" factors that made for a market upswing in 1954-55. (In particular, one can cite the inauguration of a tax trend favorable to dividends, increased flow of institutional savings into stocks, clinching of the decision to drop excess-profits taxes, evidence that the post-1951 revival of monetary policy does not mean simply a one-way shift of interest rates upward.) But the swing is a reminder of how much room there is for re-evaluation of long-term prospects without any revolution in the general climate of politics, government, or opinion-formation.

²⁰ If such widespread confidence is unjustified, on the other hand, it may set the stage for catastrophic disillusionments. After businessmen had witnessed the toleration of mass failures of banks in 1930-33 (accompanied by massive dispossession of debtors), heavy tax increases in deep depression in 1932 and (by stages) in 1933-37, the attempts to organize recovery around output-restriction in 1933-34, and the general failure of recovery policy to pull unemployment below 7 million between 1931 and (in the end) 1940, they could perhaps be excused for a certain defeatism about the possibility of real prosperity in the late 1930's.

made to compilations of Railroad Shippers' expectations going back to the 1920's. Of comparable maturity are series on farmers' intentions to plant and to breed livestock, compiled by the Department of Agriculture; while even more venerable are the same Department's crop yield estimates—its so-called "Condition Reports"—going back to the last century. Periodic conferences are also an established institution; for example, the Business Advisory Service and the Agricultural Outlook Conference, to name two Federally sponsored forums; the annual forecasting sessions of the American Economic Association and the American Statistical Association, to name two held by professional societies; and a growing number of privately sponsored conferences, including the annual outlook sessions of The Conference Boards' Economic Forum.

The proliferation of expectation series in recent years has made it increasingly difficult for those interested in such measures to keep informed of what is available—to say nothing of analysis or synthesis. No catalog of the various existing series exists, and there is as yet no central depository for such materials or clearing house to which those interested in these measures can turn for information, guidance, or research suggestions. *We strongly recommend that such a central clearing house be established and suggest in this connection the establishment of a group similar in structure and activity to the existing (and highly productive) Conference on Research in Income and Wealth.* In broad outline, the types of measures which might be catalogued by the central clearing house would embrace the various existing series of direct expectations dealing with general business activity, as well as expectations series relating to major sectors of the economy or individual industries. (See in this connection the results of the Committee's survey of expectation activity of the nation's trade associations, Appendix D.)

Existing measures of expectations, in the main, are derived through three major approaches. One technique is the sampling of business opinion, designed to yield a consensus, expressed quantitatively, qualitatively, or both, of the current thinking of businessmen about their immediate or longer range prospects. Several outstanding series of this type are reviewed below. (See also a memorandum submitted by George Katona, appendix C.) Many others were considered by the Committee but could not be described or ap-

praised for lack of time, including such recurrent surveys as those of F. W. Dodge, the Conference Board's semiannual Survey of Business Opinion, the Livingston poll (J. A. Livingston, Financial Editor, *The Philadelphia Bulletin*); "Expectations of Retailers," National Retail Dry Goods Association; "Business and Credit Outlook," Credit Policy Commission, American Bankers Association; "Credit Problems," Credit Research Foundation, National Association of Credit Men.

A second major technique frequently employed is the conference approach, of which the agricultural outlook sessions of the U. S. Department of Agriculture provide an outstanding illustration. (An appraisal of this approach and of the companion surveys such as intentions to plant, price anticipations, etc., should figure high on the agenda for future research.) A valuable innovation in this area is the Hearings conducted annually by the Joint Congressional Committee on the Economic Report. At these Hearings, views of businessmen, labor leaders, and of various "vested interest" groups, as well as those of business, academic and government economists are secured. These are further explored by Committee members as well as the Committee's Staff, and given wide publicity. The annual outlook sessions of the U. S. Chamber of Commerce and several of its local chapters (particularly Philadelphia and Los Angeles) would also figure prominently in such a list.

A third type of expectations is that of the professional forecaster in and out of government. The outstanding example here is, of course, the Economic Report of the President and the Council of Economic Advisers, and the subsequent appraisal by the Joint Committee on the Economic Report. In recent years the Staff of the Joint Committee has also attempted to present conditional projections in quantitative form, with a statement explicitly detailing the conditions upon which those forecasts are based. The annual sessions of the American Statistical Association and American Economic Association regularly review the outlook for the year(s) ahead. An increasing number of private services are also supplying their expectations to various business clients; although professional forecasts did not fall within the purview of this Committee, it is well to note their growing dependence on expectations techniques.

AIM OF CHAPTER

In this chapter we attempt to appraise the empirical record of a limited number of surveys, conferences, and periodic forecasts that have been in continuous operation long enough to justify such an analysis. Our aims, however, were narrowly circumscribed not only by limitations of time but also of available data and completed research. We approached this task from two points of view. The first is to look upon expectational data as a field of economic and sociological study. Here the relevant questions are how expectations are formed and altered by the economic process, and how they in turn influence the course of activity. The second point of view is to regard expectations data as a basis for more or less direct forecasts of the future. Here the need is to compare forecasts with subsequent outcomes and to appraise the success record against other, nonexpectational procedures. In short, the first line of study raises the question of the accuracy with which we can determine and measure expectations; the second, the accuracy of the expectations themselves in delineating the future of certain variables. It seems reasonable to believe that, in the long run, forecasting success will be promoted by investigations along the first line. It is still an unsettled question whether expectations, even when reliably measured, can contribute much to forecasting success along the second. Modigliani and Sauerlender's results, cited in Chapter II, suggest the promise of the first line of study but not the second. Some of the findings to be reported below hold out promise for the second line as well.

It should be recognized that the prerequisites for carrying out these two lines of investigation are quite different. The first presupposes consistent sets of interrelated variables, covering not only expectations but also their supposed determinants and effects. Only thus can hypotheses about the formation, structure, and impact of expectations be tested on a basis that is relatively free from conceptual and sampling discrepancies. It is the absence of such interrelated data that accounts for our being able to report so few findings on this important topic. But even the requirements of the second line of investigation are inadequately met. For this purpose, research depends on follow-up data on actual outcomes with which to confront the prior expectations. When such data can be had at

all, they are likely to be based on quite different samples of firms than the original expectations.²¹ Furthermore, serious aggregation problems exist when group expectations are confronted with group outcomes.²² There is thus, for both lines of investigation, a strong preference for follow-up data on an individual-firm basis, so that sampling problems, problems of serial correlation, and problems of aggregation can be minimized or avoided. The basis for these statements will become clearer when we pass to specific appraisals; they are mentioned here to account for our preoccupation with the forecasting problem and for the provisional character of what we have to say even on that topic.

Certain further problems are inherent in the use of expectations data which forbid their being taken naively, at face value. The first is the existence of abundant evidence of a conservative bias of expectations, due to a widespread and reasonable disposition to hedge the future. Such conservatism has been most marked in investment expectations of intermediate range, but it is to be presumed for shorter intervals in the case of operating variables. Actually, there is no lack of evidence on this question, but some of the research to be reported on below is rendered inconclusive by failure to take such biases into account. A second problem is the prevalence, at certain conjunctures, of inconsistent expectations both within and between firms, between one industry and another, and between industry as a whole and consumers. Phenomena of this sort imply erroneous expectations, and thus pose the need to study expectations as a system to detect inconsistencies and to establish business response patterns to the inconsistencies that occur. In other words, the successful use of expectations in forecasting is bound to be more or less sophisticated; thus the second line of investigation outlined above leads inevitably back into the first. Finally, we must consider the possibility that expectations may prove, in general, no more useful in forecasting than so-called, *ex-post* variables, yet demonstrate special discriminating power at times of business change. There is warrant for such a belief in expectational theory, and we have received business testimony to this effect in the special case of inventory policy.²³

²¹ See, however, the discussion below of surveys taken by the Ifo-Institute for Economic Research, Munich, Germany.

²² For an illustration, see the analysis of McGraw-Hill data in footnote 8.

²³ Some evidence, however, runs the other way; see the discussion under forecasting value of expectations for operations in Chapter II.

So far it cannot be said that research has taken much account of this possibility, and yet a quite simple device for doing so is outlined in the section on the Dun and Bradstreet surveys.

The net effect of these three considerations is to impart a degree of asymmetry to research findings: success in forecasting can be interpreted as establishing the value of expectations data; failure is much less conclusive. Illustrations of this principle will be found in the sequel.

DUN AND BRADSTREET SURVEYS OF BUSINESSMEN'S EXPECTATIONS

Nature of the Surveys. In terms of the concepts introduced and defined in Chapters II and III, the Dun and Bradstreet Surveys are surveys of intentions (in the case of employment and perhaps prices) and of anticipations (in the case of new orders, sales, inventories, and profits); that is to say, they cover both variables over which the firm has a direct, though perhaps qualified control, and variables which are determined largely outside the firm's control. The expectations are for the short run in that they are concerned with "operating" variables as they are expected to move in the fairly near future. Moreover, they refer wholly to activity within individual firms, though as reported the data must be treated as measures of expectations for various broad industry groups or for the economy as a whole. Finally, the expectations are secured by the technique of opinion surveys, on the basis of personal interviews with respondents.

Based on samples that ranged as low as 531 firms in the beginning, and have ranged between 1,000 and 1,400 firms in the last four years, extensive industrial breakdowns of the Dun and Bradstreet data have not been possible. On a continuing basis, the data cover four industrial groups: durable goods manufacturers, nondurable goods manufacturers, wholesalers, and retailers. But for these rather gross aggregates, the surveys provide a number of valuable features. The first is that each survey yields evidence on a number of related operating variables, based on a virtually identical sample. These variables are sales, employment, inventories, prices, and profits for all four industrial groups, plus new orders for the two manufacturing groups. The reports thus provide a partial system of inter-related variables, such as is required for the thorough-going study of

expectations. A second feature of the surveys is that they provide information not only on expectations for a specified forward period, but also on corresponding actual developments for the period just closed. The surveys thus generate internally the evidence with which to confront prior expectations. In the course of a Dun and Bradstreet operation, however, the actual experience corresponding to given expectations comes from a different sample; the correspondence is thus distorted by problems of sampling variability, and we shall see that these are particularly serious in the present case. A third feature deserving notice is that the expectations make an implicit allowance for seasonal variations. This is accomplished by stating all changes, both expected and actual, in the form of comparisons of a given quarter with the corresponding quarter a year earlier. The practice is defended on the ground that businessmen cannot make explicit seasonal adjustments on a quarter-to-quarter basis for their own firms, whereas the device of making comparisons with the corresponding quarter a year earlier is widely practiced and well understood.

Generally, the surveys are conducted over a two-week period in the final month of a given quarter or in the first month of the following quarter. Respondents are asked about the outcome in the quarter just ending (or just ended) compared with the same quarter a year earlier; and also about their expectations for the forward period roughly two quarters ahead compared with the same quarter a year before. The respondent is asked to make these comparisons in percentage form, but because of doubts about the estimates Dun and Bradstreet tabulate only the direction of change as "increase," "no change," or "decrease." Thus a Dun and Bradstreet report consists of two sets of percentage distributions, one showing for each business variable and industrial group the allocation of firms according as they actually experienced a rise, no change, or a fall with respect to the period just concluding (or concluded); the other, according as they anticipate a rise, no change, or a fall with respect to a designated period in the future. The distributions are based solely on the number of firms experiencing each type of change and are in no way weighted by a measure of firm size.

The question naturally arises whether this drastic simplification of the evidence provided by the surveys is necessary or desirable. The

case for dropping percentage changes is that they have been found to be untrustworthy. One reason is that executives are frequently reluctant to disclose quantitative information of potential value to rivals, but can be induced to regard directions of change as unprivileged information. Data on profits, trade allowances, new orders, and so forth are cases in point. A second reason is that the most accurate responses come from a company's top executives who are likely either to refuse to answer questions or to delegate the task to subordinates if careful quantitative responses are insisted upon. There is probably some merit in these arguments, though they should not go unchallenged without further efforts to work with percentage figures. Equally, the failure to weight the directions of change by some measure of firm size is a moot point. It seems natural to take this step, and certain theoretical considerations to be suggested below seem to call for it. Moreover, a precedent for doing so exists in the surveys of the Ifo-Institute of Munich, Germany, which similarly employs qualitative questions but weights the responses by a measure of employment or turnover. Since the Dun and Bradstreet data could readily be had in weighted form, using net worth as the basis for weighting, the relative advantages of weighted and unweighted responses deserve investigation.

The ultimate test of these data is their usefulness in practice, but their method of collection has a bearing on some of the criticisms that have been levied against the Dun and Bradstreet surveys. The first point to be emphasized is that the surveys are merely a by-product of a systematic credit-rating business, which is Dun and Bradstreet's principal activity. The business firms whose executives are interviewed during any survey consist of a sample of manufacturers, wholesalers, and retailers on which Dun and Bradstreet prepare so-called "analytical reports." In these three categories, they comprise about 54,000 medium-to-large-size firms in which there is sufficient credit interest to justify bringing their reports up to date roughly two times a year. The writing and revision of these reports is done by professional analysts working out of some 70 to 80 offices throughout the country.

The surveys are simply grafted on to the interviews made in the normal course of business during each two-week sampling period. There is thus no deliberate effort at representative sampling; more-

over, both small firms on which no analytical reports are maintained (which comprise the vast majority of the business population), and the great industrial giants whose ratings can be determined from published sources without direct interview, are inadequately represented. This procedure is at the root of two of the most serious criticisms leveled at the Dun and Bradstreet surveys: (1) that the sample is haphazard rather than representative or random; (2) that the reports are subject to biased and even untruthful responses because of the nature of the interviewer's business. Against the first criticism, Dun and Bradstreet point out that the composition of the population of analytical names is fairly stable in spite of turnover due to births, deaths, and mergers; that the firms comprising it are contacted on a continuing basis, uniform throughout the country; and that thus the executives interviewed during any two-week period approximate a random sample of executives from the universe of analytical names. It is not easy for an outsider to evaluate this argument, but certain indirect evidence is favorable. Of the 1,000 or more firms answering the survey question, roughly a quarter each have been in durable and nondurable manufacturing, about a third in wholesaling, and the remaining sixth in retailing. The breakdown of respondents by these major functions has been rather stable from survey to survey. Moreover, to judge from the surveys conducted in 1953 and 1954, the size breakdown of respondents by capital rating groups has likewise shown a fair degree of stability (see Tables 1 and 2). Evidence is also available on the adequacy of a two-week "time slice" to represent business expectations in a given quarter; Table 3 shows that the over-all results from preliminary tabulations based on the first week of sampling are a remarkably close guide to final tabulations based on the full two-week period. A further factor in favor of the sample is its growing freedom from self-selection: that is, the tendency for respondents to be a self-chosen set in virtue of their freedom to permit or decline interview. Inevitably, not all of the executives called on are willing to answer the question on expectations, while a partly different and somewhat larger group usually answers the questions on past experience. At one time it was estimated that nonrespondents might be as many as a third to a half of those interviewed; but recent checks of the sample indicate a much higher response ratio, perhaps as high as 95 per

TABLE 1
PERCENTAGE DISTRIBUTION OF SURVEY RESPONDENTS
BY MAJOR FUNCTION ¹

Dates of survey	Number of concerns reporting	All concerns	Manufacturers			Wholesalers	Retailers	Other functions
			Total	Durable goods	Non-durable goods			
1948—Apr. 1-15.....	898	100	54	28	26	35	11	(²)
1949—Apr. 15-May 15.....	648	100	50	27	23	26	20	4
May 23-27.....	531	100	49	26	23	30	15	6
June 20-30.....	780	100	50	25	25	36	10	4
July 20-31.....	665	100	45	24	21	33	18	4
Aug. 29-Sept. 2.....	1,073	100	50	26	24	31	16	3
Sept. 20-30.....	1,338	100	50	26	24	31	15	4
Oct. 25-31.....	765	100	52	27	25	30	13	5
Nov. 22-30.....	903	100	51	28	23	30	13	6
1950—Feb. 9-17.....	917	100	47	23	24	31	13	9
May 1- 9.....	1,087	100	49	27	22	29	15	7
July 6-14.....	977	100	45	24	21	33	15	7
Oct. 5-13.....	818	100	45	24	21	31	19	5
1951—Jan. 4-12.....	850	100	48	23	25	32	14	6
Apr. 5-13.....	755	100	48	25	23	32	17	3
July 5-13.....	760	100	46	22	24	33	12	9
Oct. 1-12.....	1,046	100	45	25	20	32	18	5
1952—Jan. 7-18.....	1,090	100	50	27	23	31	14	5
Apr. 7-18.....	1,006	100	46	25	21	32	17	5
July 7-18.....	1,277	100	49	25	24	33	18	0
Oct. 6-17.....	1,322	100	47	28	19	36	17	0
1953—Mar. 23-Apr. 3.....	1,261	100	48	24	24	35	17	0
June 8-19.....	1,281	100	50	27	23	31	19	0
Sept. 21-Oct. 2.....	1,300	100	49	28	21	34	17	0

¹ Respondents to the questions on sales expectations.

² Less than 1 per cent.

cent. Thus the potential bias of self-selection is not a serious current problem of the surveys, and it is likely that the refusal rate in earlier surveys was much less unfavorable than it was thought to be.

On the charge of bias due to the interviewer's business, it is difficult to find convincing evidence one way or the other. It is true that the Dun and Bradstreet expectations during the recession of 1953-54 were unduly optimistic in comparison with actual developments; but a tendency to underestimate the scope of unfavorable developments is typical of survey data, and there is independent evidence that the business temper was, in fact, remarkably optimistic during this recession. One decisive test proposed to this Committee would be a prompt reinterview survey of a subset of the firms called on in a given Dun and Bradstreet survey, conducted by an independent

TABLE 2
PERCENTAGE DISTRIBUTION OF RESPONDENTS
BY CAPITAL RATING GROUPS ¹
MID-YEAR SURVEYS 1951, 1953, AND 1954

Estimated tangible net worth	Date of survey								
	July 1951	June 1953	June-July 1954	July 1951	June 1953	June-July 1954	July 1951	June 1953	June-July 1954
	All concerns ²			All manufacturers			Durables manufacturers		
\$1,000,000 and over.....	14	16	21	19	23	30	20	26	32
\$500,000-\$1,000,000.....	10	12	11	12	15	16	14	16	17
\$300,000-\$500,000.....	12	13	16	12	15	18	9	14	18
\$200,000-\$300,000.....	18	12	13	19	11	10	22	10	8
\$125,000-\$200,000.....	18	17	17	17	13	12	15	11	10
\$75,000-\$125,000.....	20	16	13	16	14	8	14	14	8
\$50,000-\$75,000.....	4	6	5	2	5	3	3	5	3
Under \$50,000.....	4	8	4	3	4	3	3	4	4
Total.....	100	100	100	100	100	100	100	100	100
	Nondurables manufacturers			Wholesalers			Retailers		
\$1,000,000 and over.....	18	20	27	8	8	13	12	9	15
\$500,000-\$1,000,000.....	11	14	16	7	10	7	12	10	7
\$300,000-\$500,000.....	13	16	17	12	11	13	13	11	15
\$200,000-\$300,000.....	16	11	12	17	15	16	12	10	14
\$125,000-\$200,000.....	19	16	14	20	21	22	18	20	23
\$75,000-\$125,000.....	18	14	8	23	19	19	25	16	14
\$50,000-\$75,000.....	1	5	3	7	8	7	5	7	6
Under \$50,000.....	4	4	3	6	8	3	3	17	6
Total.....	100	100	100	100	100	100	100	100	100

¹ Respondents to questions on sales expectations, excluding a small number of names for which capital ratings were not reported.

² Excluding, for 1951 Survey, a small number of concerns in other major functions,

research agency but otherwise following the Dun and Bradstreet procedure.

Another criticism concerns the type of respondent from whom the survey reports are secured. It is generally agreed that the most useful answers are those provided by the decision-making officers of a firm, since these are likely to reflect the expectations on which the firm takes action. Much more ambiguous are the "expectations" of subordinates or technicians: the first may give only personal or temperamental impressions, the second may base their answers on estimates of the general market for the firm's products rather than the firm's own prospects and intentions. Thus the very concept of expectation hinges on the nature of the respondent. On this point,

TABLE 3

COMPARISON OF PRELIMINARY AND FINAL TABULATIONS OF SALES, EXPECTATIONS, SURVEYS OF BUSINESSMEN'S EXPECTATIONS
DUN AND BRADSTREET, INC.

Dates of survey	Preliminary tabulations					Final tabulations				
	Number reporting	Percentage expecting:				Number reporting	Percentage expecting:			
		Increase	No change	Decrease	Net increase		Increase	No change	Decrease	Net increase
1948—Apr. 1-15.....	n.a.	n.a.	n.a.	n.a.	n.a.	898	50	24	26	24
1949—Apr. 15-May 15...	447	24	23	53	-29	648	25	22	53	-28
May 23-27.....	n.a.	n.a.	n.a.	n.a.	n.a.	531	30	20	50	-20
June 20-30.....	n.a.	n.a.	n.a.	n.a.	n.a.	780	28	20	52	-24
July 20-31.....	n.a.	n.a.	n.a.	n.a.	n.a.	665	33	17	50	-17
Aug. 29-Sept. 2.....	n.a.	n.a.	n.a.	n.a.	n.a.	1,073	36	18	46	-10
Sept. 20-30.....	n.a.	n.a.	n.a.	n.a.	n.a.	1,338	38	20	42	-4
Oct. 25-31.....		42	27	31	11	765	45	26	29	16
Nov. 22-30.....	649	45	29	26	19	903	45	28	27	18
1950—Feb. 9-17.....	644	56	18	26	30	917	54	26	20	34
May 1-9.....	628	59	27	14	45	1,087	62	25	13	49
July 6-14.....	568	71	22	7	64	977	77	18	5	72
Oct. 5-13.....	652	77	18	5	72	818	77	18	5	72
1951—Jan. 4-12.....	413	79	13	8	71	850	79	12	9	70
Apr. 5-13.....	404	73	17	10	63	755	74	16	10	64
July 5-13.....	481	64	20	16	48	760	61	20	19	42
Oct. 1-12.....	725	56	24	20	36	1,046	55	25	20	35
1952—Jan. 7-18.....	n.a.	n.a.	n.a.	n.a.	n.a.	1,090	58	25	17	41
Apr. 7-18.....	561	54	26	20	34	1,006	55	26	19	36
July 7-18.....	540	61	23	16	45	1,277	61	24	15	46
Oct. 6-17.....	513	59	30	11	48	1,322	59	32	9	50
1953—Mar. 23-Apr. 3....	633	69	19	12	57	1,261	65	23	12	53
June 8-19.....	547	57	26	17	40	1,281	62	24	14	48
Sept. 21-Oct. 2....	548	45	35	20	25	1,300	49	32	19	30
1954—Jan. 11-22.....	646	44	33	23	21	1,315	46	32	22	24
Feb. 23-Mar. 5....	592	45	29	26	19	1,277	43	28	29	14
Apr. 19-30.....	535	48	32	20	28	1,196	46	33	21	25
June 22-July 2....	513	47	30	23	24	1,126	48	30	22	26
Oct. 4-15.....	566	55	30	15	40	1,309	56	31	13	43
1955—Jan. 3-14.....	565	72	22	6	66	1,259	71	23	6	65
Apr. 4-15.....	587	73	19	8	65	1,268	73	21	6	67
June 20-July 2....	523	75	21	4	71	1,104	77	19	4	73

n.a. Not available.

a recent investigation is summarized in Table 4. It suggests that over 85 per cent of the responses to Dun and Bradstreet reporters were obtained from officers who may be classed from their titles among "top management," and who may therefore be presumed to know the facts about their firms' actual experience and to be familiar with the best thinking within their firms about future prospects. There is, however, some hazard in inferring executive responsibility from titles alone. Moreover, the remaining 15 per cent of responses

were obtained from officers and employees for whom such presumptions are less valid, though the bulk of these would have access to accounting records and some contact with top management.

TABLE 4
NUMBER AND PERCENTAGE DISTRIBUTION OF RESPONDENTS TO
DUN AND BRADSTREET, INC., SURVEY OF BUSINESSMEN'S EXPECTA-
TIONS, CONDUCTED JANUARY 11-12, 1954, CLASSIFIED BY TITLE
OF OFFICER INTERVIEWED

Title	Number	Per cent of total number	Cumulative percentage
President	379	27.85	27.85
Partner	186	13.67	41.52
Proprietor	47	3.45	44.97
General Manager	16	1.18	46.15
Subtotal	628	46.15	46.15
Treasurer	176	12.93	59.08
Controller	54	3.97	63.05
Executive Vice President	9	0.66	63.71
Secretary	170	12.49	76.20
Vice President	145	10.66	86.86
Subtotal	554	40.71	86.86
Assistant Treasurer	27	1.98	88.84
Assistant Secretary	11	0.81	89.65
Assistant to President	3	0.22	89.87
Credit Manager	15	1.10	90.97
Auditor	26	1.91	92.88
Office Manager	57	4.19	97.07
Bookkeeper	12	0.88	97.95
Sales Manager	4	0.29	98.24
Director	5	0.37	98.61
Attorney	2	0.15	98.76
Trustee	1	0.07	98.83
Assistant to Vice President	1	0.07	98.90
Subtotal	164	12.04	98.90
Title not given	15	1.10	100.00
Total	1,361		100.00

¹ Of this number, 1,315 reported sales expectations and the remaining 46 reported "actuals" for sales or other items.

A final criticism of the Dun and Bradstreet surveys is being gradually remedied. This is the complaint that the compilers fail to provide systematic current information on the questionnaire used, nature of the interview, concepts employed as reflected in definitions and instructions to field personnel and respondents, editing and collating of responses, structure of the sample, and similar matters necessary to evaluating the comparability of the survey with other sources of information. Actually a good deal of this information is

available from Dun and Bradstreet on request, as the accompanying questionnaire and earlier exhibits in this account show. But systematic reporting, perhaps only for limited circulation, of the distribution of survey responses by size of firm would be vastly helpful in appraising the Dun and Bradstreet reports. It would also be desirable to have up-to-date information on the composition of manufacturing and of wholesale and retail trade in the Dun and Bradstreet analytical file. Such information should cover not only the relative importance of different particular lines of activity in each broad industrial group, but also distributions of the covered firms by asset rating, sales, or other like measure of size.

University of Illinois Study. The first serious study of the Dun and Bradstreet expectations was undertaken as part of a research project on "Expectations and Business Fluctuations," conducted at the University of Illinois under auspices of the Merrill Foundation for the Advancement of Financial Knowledge.²⁴ Only the sales expectations were considered, and the data employed were the estimated percentage changes, rather than the simple directions of change that are currently reported. Parallel analyses were made for durable goods manufacturers, nondurable goods manufacturers, and retailers.

In substance, this study was concerned with two questions: (1) How accurately have sales expectations forecast the actual course of sales? (2) Can data on sales expectations be used for forecasting variables other than sales themselves, especially production and inventory movements? For subsequent purposes, we may note that this second question is equivalent to asking whether sales expectations contain any net forecasting information.

So far as the Dun and Bradstreet surveys are concerned, the net impression of failure is but weakly summarized by the quotation: "... the Dun and Bradstreet survey [has] shown a poor record with regard to direct forecasting ability." What was shown was that knowledge of the level of aggregate sales at the time of a given survey was a better basis of forecasting sales two quarters hence than were the corresponding sales expectations. There was, in fact, no convincing evidence that the direction of change from one quarter to the next could be anticipated at all. It is fair to say that this find-

²⁴ Modigliani, and Sauerlender, in *Short-Term Economic Forecasting*, pp. 261-361.

FACSIMILE OF DUN AND BRADSTREET QUESTIONNAIRE

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SURVEY 55-4

DUN & BRADSTREET, INC.
SURVEY OF BUSINESS TRENDS AND EXPECTATIONS

532

REPORTS ON ECONOMIC STATISTICS

	HOW DID SECOND QUARTER OF 1968 COMPARE WITH SECOND QUARTER OF 1967		HOW DO YOU EXPECT THE FOURTH QUARTER OF 1968 TO COMPARE WITH FOURTH QUARTER OF 1967	
	INCREASE † OR DECREASE -	APPROXIMATE CHANGE	INCREASE † OR DECREASE -	APPROXIMATE CHANGE
1. VOLUME OF SALES (DOLLAR AMOUNT) _____		\$		\$
2. NEW ORDERS RECEIVED (DOLLAR AMOUNT) (MANUFACTURERS ONLY) _____		\$		\$
3. TOTAL NUMBER OF EMPLOYEES (AT END OF THE PERIOD) _____		\$		\$
4. LEVEL OF INVENTORIES (DOLLAR AMOUNT) (AT END OF THE PERIOD) _____		\$		\$
5. LEVEL OF SELLING PRICES OF YOUR PRODUCTS (AT END OF THE PERIOD) _____		\$		\$
6. TRENDS IN EARNINGS (BASED ON PRESENT INCOME TAX RATES)	OPERATED AT A LOSS <input type="checkbox"/>			
(A) HOW DID THE OPERATING RESULTS OF YOUR COMPANY FOR THE SECOND QUARTER OF 1968 COMPARE WITH THE SECOND QUARTER OF 1967? _____	OR OPERATED AT A PROFIT WHICH			
	} WAS HIGHER BY _____ \$ } WAS LOWER BY _____ \$ } SHOWED NO CHANGE _____			
(B) WHAT ARE THE EXPECTATIONS OF YOUR COMPANY FOR NET EARNINGS AFTER TAXES FOR THE FOURTH QUARTER OF 1968 COMPARED WITH THE FOURTH QUARTER OF 1967? _____	EXPECT A LOSS <input type="checkbox"/>			
	OR EXPECT A PROFIT WHICH WILL			
	} BE HIGHER BY _____ \$ } BE LOWER BY _____ \$ } SHOW NO CHANGE _____			
7. MANUFACTURERS ONLY -				
HOW DO YOU EXPECT THE DOLLAR VOLUME OF YOUR NEW ORDERS RECEIVED FOR THE FOURTH QUARTER OF 1968 TO COMPARE WITH THE VOLUME OF YOUR NEW ORDERS RECEIVED IN THE SECOND QUARTER OF 1967? _____	INCREASE † OR DECREASE -	APPROXIMATE CHANGE		
		\$		

Name of Concern _____ (PLEASE PRINT) Street _____ City _____

Capital Rating or Estimated Net Worth _____ Annual Sales Actual or Estimated _____

Zone _____ State _____ Date of Interview _____ Function _____ (IMP., WHOL., RETAIL)

Name of Person Interviewed _____ (PLEASE PRINT) Title _____ Line of Business _____ (PANTS, MEN'S SHOES, FURNITURE, ETC.)

Reporter _____ Office _____ Standard Industrial Classification _____

ing, combined with a similar verdict on the forecasting value of projected shipments of the Regional Shippers' Advisory Boards, led to widespread pessimism among economists as to the direct forecasting value of businessmen's expectations about "operating" variables, as distinct from plant and equipment expenditures. Since this negative verdict will be contested below, it is well to see on what evidence it rests.

Very briefly, the analysis of success in "self-forecasting" was based on two propositions: (1) that a simple median of the distribution of expected percentage changes was the best estimate that could be made of businessmen's aggregate expectations in a given industrial group; (2) that the Dun and Bradstreet sample was reasonably representative of the populations of firms underlying Department of Commerce estimates of manufacturers and retailers aggregate sales. Exception will not be taken here to the second assumption; when no other recourse is available, a good deal of violence to the facts must be tolerated. But satisfaction with the first assumption is curious in view of the following quotation from the study itself:

All our survey data constantly exhibit a bias in underestimating the magnitude of change, especially when change is at all substantial. This tendency to underestimate is one of the major elements contributing to the average error, which was sizable even for the two more successful surveys [those of *Fortune Magazine* and the Department of Commerce]. . . . with further experience, one might well learn to make proper allowance for biases such as this if they . . . are constant over time. This means that the forecasting value of the anticipations might be considerably enhanced if instead of basing forecasts directly on the response we used some function of the average expected change, which function would make allowance for any systematic bias. . . . [p. 308]

One must credit the authors with understanding the limited bearing of their findings, but many of their readers have paid insufficient attention to this warning.

Having made no allowance for the systematic bias of underestimation in expectations, most of the negative findings of the study for surveys based on estimates of change from a corresponding quarter in the previous year were foreordained. Projecting the base quarter's standing (Department of Commerce figures) by the expected percentage change to the corresponding quarter next year (Dun and Bradstreet data) systematically underestimated the one-

year rise or fall. Thus the implied change from the quarter immediately preceding the forecast quarter was underestimated as to size and frequently wrong as to direction. There is no dispute about this outcome, which is abundantly demonstrated in the report. What is disputed is the lesson to be drawn from it. Granted the facts of bias acknowledged in the quotation cited above, it is a finding that bears on the *prima facie* accuracy of expectations rather than their informational content. Thus the negative evaluation of businessmen's expectations that has resulted goes beyond the limited reach of the authors' demonstration.

We have not been in a position to rework the data employed in the Illinois study. But we report on a different line of investigation below, using the Dun and Bradstreet data in the form of reported directions of change, which seems to justify a more favorable verdict on the self-forecasting value of the expectations. It remains to note that the Illinois study came to a very different conclusion on the usefulness of expectational data—including Dun and Bradstreet's—in forecasting related variables. This part of the study is ingenious and constructive, and its net result is to show that the combination of expectations data with realized magnitudes of other variables leads to improvement in forecasting results. Put bluntly, the expectations have net forecasting value.

The somewhat contradictory findings of this report are perhaps responsible for an impression of paradox that surrounds the subject of expectations. Expectations influence business behavior, yet businessmen cannot forecast. Expectations appear to forecast no better than a simple projection of past experience, yet they can be used to improve mechanical forecasts. We suspect that the paradoxes may have a simple resolution; for the constructive findings of the Illinois study implicitly allow for the inherent biases of aggregates of individual-firm expectations, while the negative findings on direct forecasting value do not.

National Bureau Study. The second study of Dun and Bradstreet expectations on which we report was undertaken as part of the program of research on business cycles conducted at the National Bureau of Economic Research.²⁵ It consists of two parts, the

²⁵ Millard Hastay, "The Dun and Bradstreet Surveys of Businessmen's Expectations," *Proceedings of the Business and Economic Statistics Section*, American Statistical Association, (covering the Montreal meeting of September 1954), Washington, 1955, pp. 93-123.

first of which bears on the nature and value of expectations, the second of which considers applications. We shall consider each part in turn.

The first part is chiefly distinguished from the previous study in two ways: (1) It makes use of the Dun and Bradstreet data in the current report form; that is, as tabulations of expected directions of change rather than expected percentage changes. (2) It employs in the task of evaluation the corresponding data compiled by Dun and Bradstreet on actually experienced directions of change. The first feature is dictated by the fact that Dun and Bradstreet have discontinued the tabulation of reports on percentage change. The second marks a distinct gain, since it avoids the need to confront expectations with realized experience from widely dissimilar populations of firms. The quite selective character of the Dun and Bradstreet population of "analytical names" has been indicated above, and the use of data on realized experience from this same basic population represents a marked gain in the comparability of expectations and outcomes. However, it should be noted that a source of sampling discrepancy still remains: the realized directions of change corresponding to given expectations are disclosed only two surveys later; and, given the procedure by which successive samples are chosen, it is not even likely that the two samples have a significant number of firms in common. This fact gives high importance to the question of the representativeness of the Dun and Bradstreet sampling procedure. It also suggests the gains that would accrue from follow-up samples in which the same firms that answered questions on expectations would be queried on outcomes for the corresponding period.

It has become increasingly common to speak of tabulations of directions of change as "diffusion data," on the ground that they describe the diffusion of business movements through the economy. Such data do not tell us how substantial the movements are in the aggregate, but they do tell us how generally such movements are shared in by individual firms. In this terminology, the Dun and Bradstreet surveys are reports on expected diffusion, and the corresponding data on outcomes in the period just closed are reports on actual diffusion.

There is some inconvenience in the diffusion data as published, since each business change is characterized by three numbers: the

percentage expecting (or having experienced) a rise, the percentage expecting (or having experienced) no change, and the percentage expecting (or having experienced) a fall. It is therefore convenient—though not without danger—to cast these measures into a single index. Of the many ways this can be done, the National Bureau has experimented with the excess, plus, or minus, of the percentage of firms realizing (or expecting) increases over the percentage realizing (or expecting) decreases. In this way, a survey at the close of a given quarter, say t , yields two diffusion values, the first based on actual changes experienced by the sampled firms from quarter $t-4$ to quarter t , the second based on changes expected to be realized from quarter $t-2$ to (the future) quarter $t+2$. If we symbolize these values by A and E , respectively, and date them as of the terminal quarter involved in each comparison, the given survey yields diffusion values A_t and E_{t+2} .

The National Bureau's test of forecasting value consists in comparing the usefulness of E_t and A_{t-2} as forecasters of actual diffusion one or two quarters after the survey. It is thus a species of naïve model test, which asks whether a certain type of historically given data can predict as well as expectations that become available at the same time. This test is made for each operating variable in each industrial group reported on by Dun and Bradstreet—some 33 repetitions in all, based on surveys taken from 1949 through October 1952. The following striking conclusions are quoted from the report:

- (1) Considered as two-quarter forecasts, the expectations E_t are in every case more closely associated with A_t than are the contemporaneously reported indexes of actual experience A_{t-2} .
- (2) The like is true of E_{t+1} considered as a one-quarter forecast; it is more closely associated with A_t than is A_{t-1} .
- (3) When A_t is forecasted from E_t and A_{t-2} jointly, the net regression of A_t on E_t is positive and everywhere more important than the regression of A_t on A_{t-2} , which is negative in all cases. Correspondingly, the partial correlations of A_t and E_t , allowance being made for the effect of A_{t-2} , are generally substantial, being above .65 in 26 out of 33 cases.

- (4) Exactly analogous results hold for the regression of A_t on E_{t+1} and A_{t-1} , except that the net regression of A_t on A_{t-1} is somewhat more frequently positive, though in all cases but one (viz., retail employment) it is numerically inferior to the regression of A_t on E_{t+1} . Partial correlations of A_t and E_{t+1} , after allowance for the effect of A_{t-1} , exceed .65 in 29 out of 33 cases, and exceed .80 in 15 cases.

On the basis of these results, the National Bureau report concludes that expectations make a net contribution to forecasting actual developments, and surmises that in forming their expectations businessmen take account of information that is not wholly dependent on current or past values of the variables reported on. The basis for this surmise is the rather striking discrimination between expected and actual diffusion effected by the net regression equations, particularly in the case of two quarter forecasts. The strong contrast in signs of the two sets of regression coefficients suggests that, while expectations and actual experience usually run together, at critical junctures the expectations are significantly influenced by forward-looking evidence.

The report acknowledges, however, that the apparent forecasting superiority of expectations over realized experience has not been demonstrated against all, or even the most logical, forms of past experience. Since the expectations embrace four quarters, two of which represent already realized experience, it would be desirable to test the usefulness of expectations against just these two quarters of experience rather than against these plus the two previous quarters. Such data are not yielded by the Dun and Bradstreet surveys, but it is arguable that these actual two-quarter changes contain all the useful information embraced in the expectations E_t . It is conceivable, too, that more complex models based entirely on past experience would predict better than E_t , but this consideration is unimportant unless it can be shown that such models exist which contain all the valid forecasting information provided by expectations. On this score, the findings in favor of expectations in the Illinois study remain decisive, and support, rather than contradict, the findings of the National Bureau study.

The second part of the National Bureau study proceeds along

parallel lines to test the usefulness of Dun and Bradstreet data in predicting corresponding changes in Department of Commerce aggregates. Since the Dun and Bradstreet data are based on actual or expected changes between corresponding quarters of successive years, they are made to do service in predicting equivalent changes in the national aggregates. To make this point clear, let Y_t represent the level of a Department of Commerce series (say, retail sales) in a given quarter t . Then the change from the corresponding quarter a year earlier is $Y_t - Y_{t-4}$. The National Bureau study considers the prediction of $Y_t - Y_{t-4}$ on the basis of the previously defined indexes E_t and A_{t-2} . Such a study of course reintroduces the extraneous source of error which results from inability to find matching samples of firms within which to study the relation of diffusion and aggregate change. With considerable misgivings in some cases, Dun and Bradstreet indexes of diffusion were matched with aggregate changes of Department of Commerce series for the following industries and operating variables:

<i>Industry</i>	<i>Operating variable</i>
All manufacturers	Sales, inventories, new orders, employment
Durable manufacturers	Sales, inventories, new orders
Nondurable manufacturers	Sales, inventories, new orders
Wholesalers	Sales, inventories
Retailers	Sales, inventories, prices

The conclusions of this investigation may again be summarized directly from the report, in a form parallel to those of the first part of the study:

- (1) Except in the case of retail sales, $(Y_t - Y_{t-4})$ is more closely associated with E_t than with A_{t-2} .
- (2) When the expectations appear to lag, as revealed by the fact that E_t is more closely associated with $(Y_{t-1} - Y_{t-5})$ than with $(Y_t - Y_{t-4})$, it is generally true also that $(Y_t - Y_{t-4})$ is more closely associated with E_{t+1} than with A_{t-1} .
- (3) The net regression of $(Y_t - Y_{t-4})$ on E_t is positive and exceeds in numerical value the net regression of $(Y_t - Y_{t-4})$ on A_{t-2} , which is either negative or less than .50 with but one exception. The exception is retail sales, for which the net regres-

sion of $(Y_t - Y_{t-4})$ on A_{t-2} both exceeds that on E_t and is greater than .50.

- (4) Among the eighteen cases for which the calculation can be made, all but four show partial correlations of $(Y_t - Y_{t-4})$ with E_t , allowance being made for the effect of A_{t-2} , of .65 or greater.

When one considers the many sources of incomparability between Dun and Bradstreet and Department of Commerce data, the general confirmation of previous findings is quite striking. Nevertheless, there is always the danger that success in regression analysis is as much a tribute to the ingenuity and perseverance of the analyst as it is a witness to the existence of underlying relationships. A final step is therefore to utilize these results to make predictions outside the period of analysis. This step is possible because the foregoing results were derived only from those surveys taken from 1949 through October 1952, the last of which reported on expectations for the first quarter of 1953. Thus nine subsequent surveys, reporting expectations for the last quarter of 1953 and all eight quarters of 1954-55, are available on which to base an independent test of the forecasting usefulness of actual and expected diffusion. This yields, in effect, a test of predictive success during recession and revival based on a regression analysis of prerecession data. The resulting estimates are two-quarter forecasts such as might have been made on the basis of the relation of diffusion data to aggregate change observed in the period 1949 to 1952. These estimates are shown in Table 5, together with observed aggregate changes as later determined from Department of Commerce publications. Much the same comparisons, together with corresponding comparisons in the period 1949 through 1952 (on which the regressions are based), are presented as time series in Charts 1-5. The two-quarter gap in the predicted series is due to the absence of expectations data in comparable form for the periods ending II Q and III Q 1953.

To interpret these materials it is necessary to bear in mind that $(Y_t - Y_{t-4})$ represents the change in a four-quarter moving average during quarter $t-2$, assuming that each item in the moving-average sequence is dated at the midpoint of the interval spanned. For example, the change in all manufacturers' sales terminating in IV Q

TABLE 5

ACTUAL CHANGES COMPARED TO PREDICTED AGGREGATE CHANGES IN SELECTED ECONOMIC VARIABLES BETWEEN CORRESPONDING QUARTERS OF SUCCESSIVE YEARS, BASED ON (1) EXPECTED AND (2) LAGGED ACTUAL DIFFUSION INDEXES COMPILED BY DUN AND BRADSTREET, INC.

Industry group and economic variable ¹	Changes between corresponding quarters ending:								Changes between corresponding quarters ending:							
	IV Q 1953		I Q 1954		II Q 1954		III Q 1954		IV Q 1954		I Q 1955		II Q 1955		III Q 1955	IV Q 1955
	Actual	Predicted	Actual	Predicted	Actual	Predicted	Actual	Predicted	Actual	Predicted	Actual	Predicted	Actual	Predicted	Predicted	Predicted
All manufacturers:																
Sales.....	-1,216	4,025	-2,808	-2,680	-6,012	-3,748	-6,479	-677	-1,253	685	4,314	7,993	9,594	13,387	11,247	11,746
Inventories.....	2,143	3,951	550	3,307	-1,553	2,125	-3,358	2,232	-2,677	1,975	-1,663	2,499	-395	3,075	3,695	4,975
New orders.....	-8,194	-3,206	-8,712	-15,958	-8,659	-10,722	-1,445	3,617	6,674	4,390	10,974	15,963	15,410	25,987	14,339	16,438
Employees.....	-27	1,287	-893	-558	-1,438	-597	-1,626	-572	-928	-444	(^a)	307	(^a)	490	731	884
Durables manufacturers:																
Sales.....	-1,045	2,737	-3,546	-795	-5,028	-2,372	-5,446	-789	-1,991	681	2,807	4,385	6,133	7,432	5,990	6,488
Inventories.....	1,926	2,785	461	1,632	-1,530	501	-2,838	502	-2,315	110	-1,465	180	-146	1,034	2,256	4,170
New orders.....	-7,601	479	-8,517	-5,414	-7,900	-6,365	-869	1,251	5,366	3,308	9,310	8,293	12,225	16,914	10,563	10,301
Employees.....	60	350	-653	-162	-1,107	-547	-1,289	-213	-761	-264	(^a)	306	(^a)	614	558	803
Nondurables manufacturers:																
Sales.....	-171	2,007	-262	-180	-984	-382	-1,033	915	738	338	1,507	3,184	3,461	5,448	5,094	5,408
Inventories.....	217	1,517	89	1,056	-23	-28	-520	143	-362	90	-198	1,010	-249	1,440	1,572	2,231
New orders.....	-593	2,580	-195	650	-759	-459	-576	944	1,308	944	1,664	2,484	3,185	4,426	4,260	5,738
Employees.....	-88	111	-240	66	-330	1	-335	-56	-167	-88	(^a)	38	(^a)	59	93	93
Wholesalers:																
Sales.....	-1,208	1,366	-760	-87	-1,464	-38	-518	1,038	263	1,322	1,500	2,235	2,100	4,592	3,848	3,709
Inventories.....	362	1,440	268	875	152	403	-292	1,073	-181	1,507	-156	1,396	-65	2,952	2,289	2,005
Employees.....	21	36	10	70	2	11	8	2	13	-4	(^a)	29	(^a)	56	40	60
Retailers:																
Sales.....	-562	2,319	-1,597	499	-391	1,678	112	2,308	1,479	2,401	3,210	3,682	3,239	4,883	3,376	3,607
Inventories.....	1,069	1,544	582	460	306	533	-499	1,234	-488	699	30	1,081	560	2,321	2,583	3,636
Prices.....	-0.9	4.5	0.6	4.0	0.0	2.6	-0.3	1.3	-1.7	0.6	-1.5	2.7	-1.1	3.0	4.7	5.6
Employees.....	114	194	50	120	-24	136	-47	151	-45	-33	(^a)	138	(^a)	165	207	281

¹ Sales, inventories, and new orders are in millions of dollars, and prices in percent; employees are in thousands. "Actual" changes are from published Department of Commerce time series.

² Available data for employment revised to first quarter 1954 benchmark. Comparable changes therefore not available.

1953 represents the change, at an annual rate, in a four-quarter moving average of such sales during II Q 1953. This value (\$—1,216 million, actual; \$4,025 million, predicted) is thus dated II Q 1953 in Chart 1, and may be thought of roughly as a measure of the short-term trend in (actual, or predicted) manufacturers' sales in that quarter. In more technical language, an estimate based on Dun and Bradstreet data is to be regarded as a vector describing the anticipated size and direction of movement in an aggregate series, not as an indicator of the level of that series. A negative estimate is a prediction that the aggregate will move down in the given quarter, a positive estimate that it will move up; and a zero estimate is critical in the sense of marking predicted peaks and troughs in the aggregate. Corresponding interpretations apply, of course, to the actual Department of Commerce changes shown.²⁶

How well the predicted changes concur with the actual is shown most vividly in Charts 1-5. The agreement is closest, of course, in the period 1949-1952, but the predicted and actual changes show roughly similar movements from II Q 1953 to II Q 1955 as well. One deficiency of the predictions stands out, however; they tend to run higher than the actual changes after 1952 and, in the case of inventories, fail to enter the negative range at all. An explanation of this bias in the predictions is still being sought. On the technical side, it may be due to (1) failure to weight the individual-firm expectations, (2) use of too elementary a relation between diffusion data and aggregate changes, and (3) failure to take account of other readily available data.²⁷ On the substantive side, the upward prediction bias may be due to peculiarities of the Korean episode, which dominates the economics of the period to which the regressions were fitted. It seems clear, for example, that the buildup of inventories could not keep pace with business intentions in the early months of the war, and this fact could lead to an under-response of the prediction for-

²⁶ As an idealization of the original data, the moving average will not always yield the same dating of peaks and troughs as will the original data. And for many purposes the verdict of the original data will be preferred. Moving averages of Department of Commerce data were resorted to because it is this measure of activity that the Dun and Bradstreet data most resemble in form.

²⁷ For example, the predictions might be based not only on E_t and A_{t-3} , but also on Y_{t-2} . If optimum predictions had been the principal aim of this stage of the analysis, such a step would have been strongly indicated. But the predictions attempted here are simply a by-product of the relations used to determine whether expectations have net forecasting value.

Chart 1
 Changes in Selected Economic Variables from the Corresponding Quarter
 a Year Earlier, Compared with Estimated Changes Based on Expected
 Diffusion for the Identical Period and Actual Diffusion for
 the Period Two Quarters Earlier. All Manufacturers
 (Data plotted at midpoint of period of change)

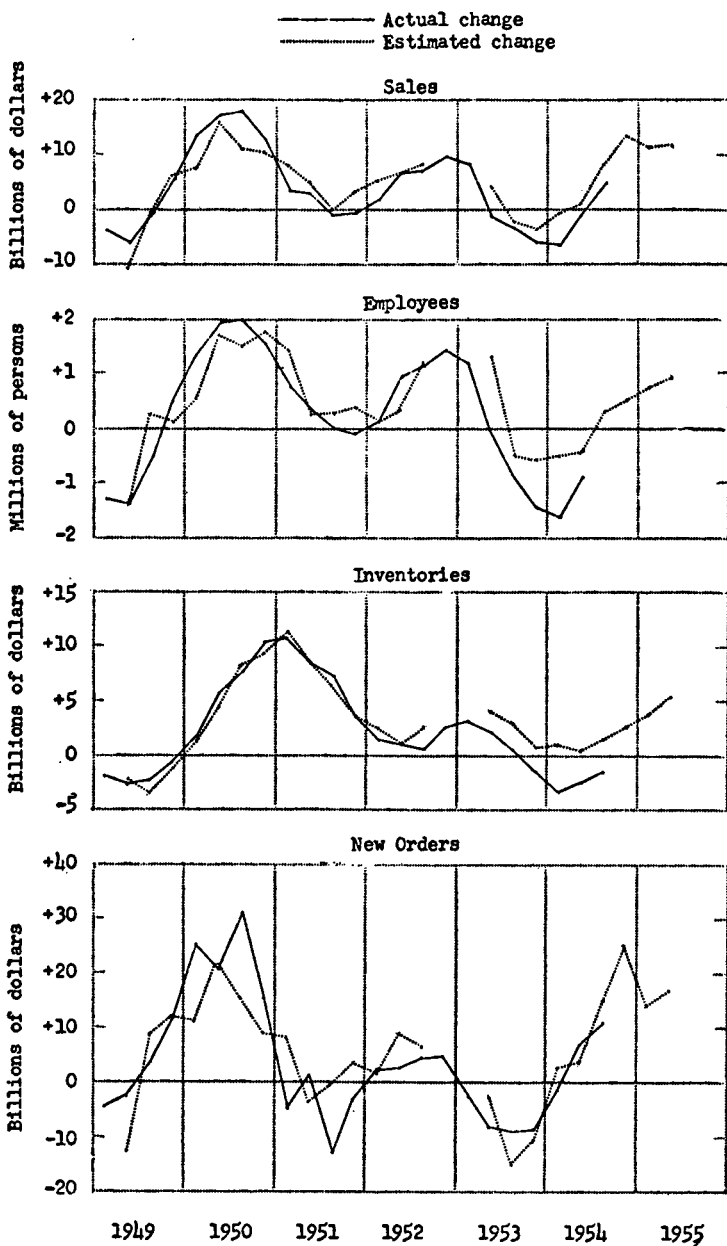


Chart 2

Changes in Selected Economic Variables from the Corresponding Quarter a Year Earlier, Compared with Estimated Changes Based on Expected Diffusion for the Identical Period and Actual Diffusion for the Period Two Quarters Earlier. Durable Goods Manufacturers
(Data plotted at midpoint of period of change)

— Actual change
— Estimated change

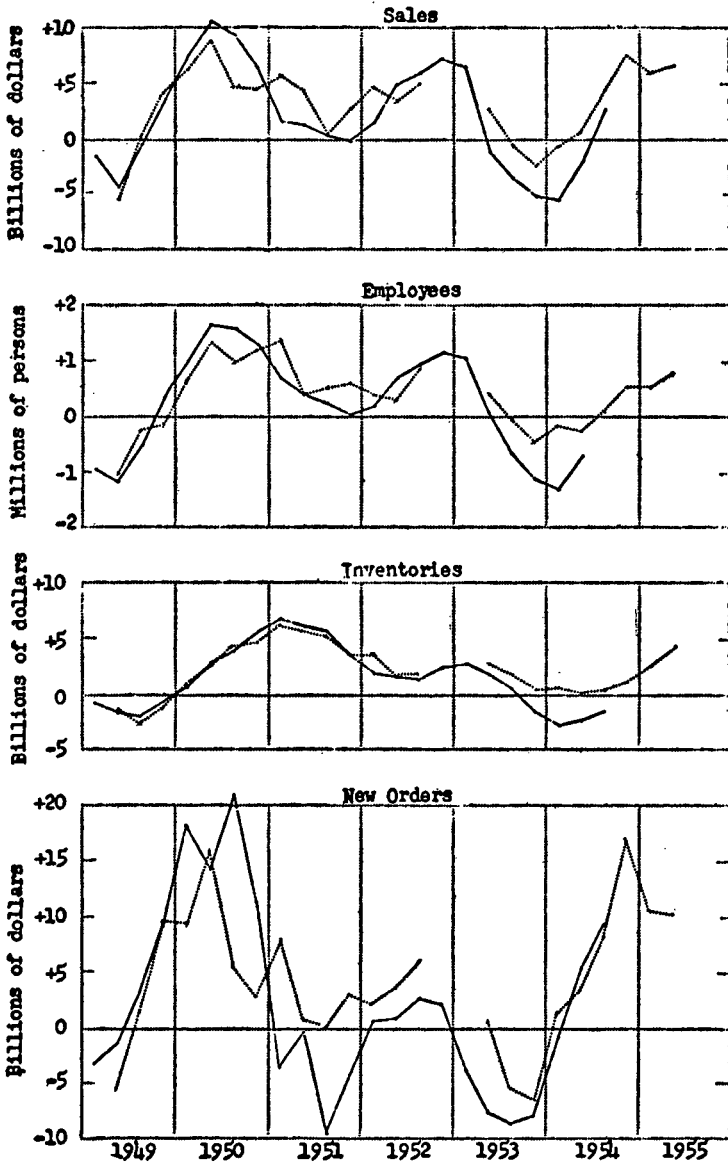


Chart 3

Changes in Selected Economic Variables from the Corresponding Quarter a Year Earlier, Compared with Estimated Changes Based on Expected Diffusion for the Identical Period and Actual Diffusion for the Period Two Quarters Earlier. Nondurable Goods Manufacturers
(Data plotted at midpoint of period of change)

— Actual change
— Estimated change

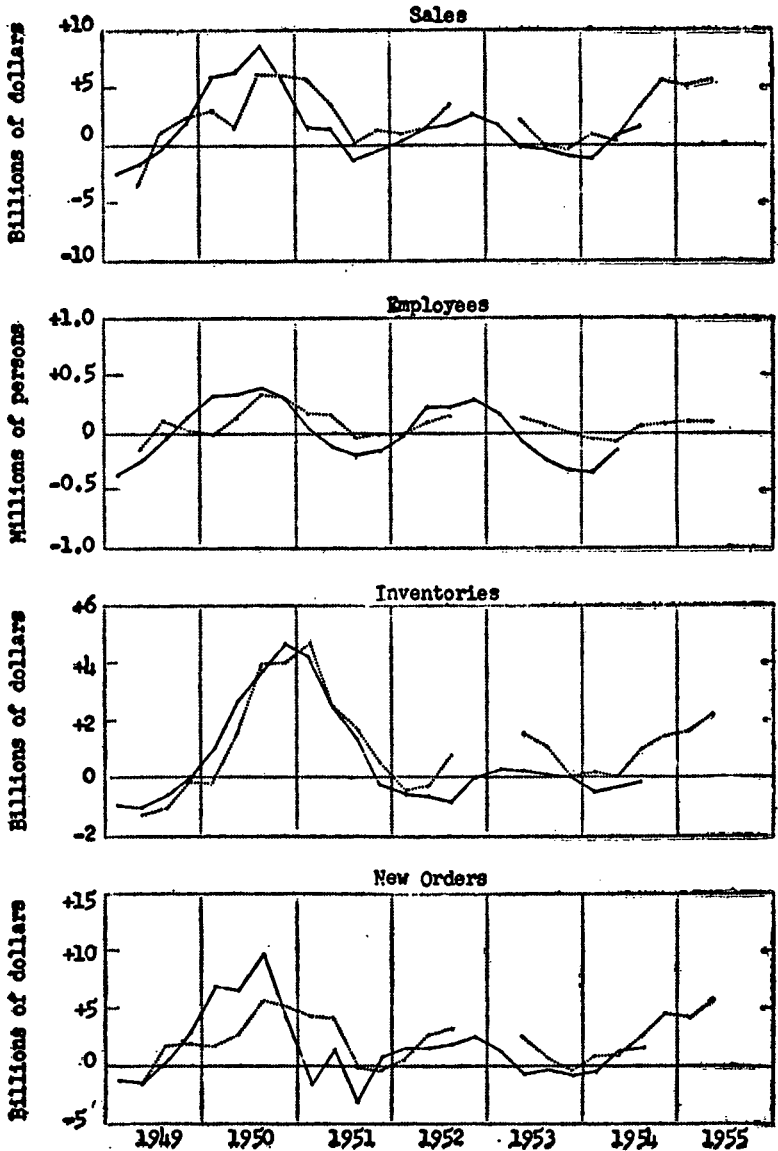


Chart 4

Changes in Selected Economic Variables from the Corresponding Quarter a Year Earlier, Compared with Estimated Changes Based on Expected Diffusion for the Identical Period and Actual Diffusion for the Period Two Quarters Earlier. Wholesalers
(Data plotted at midpoint of period of change)

— Actual change
 — Estimated change

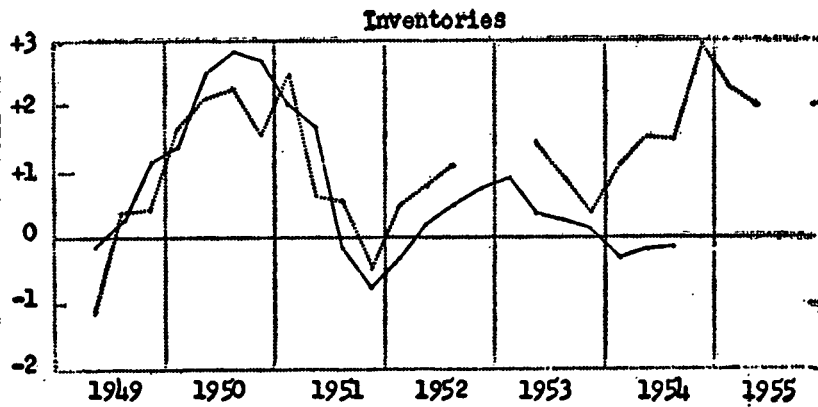
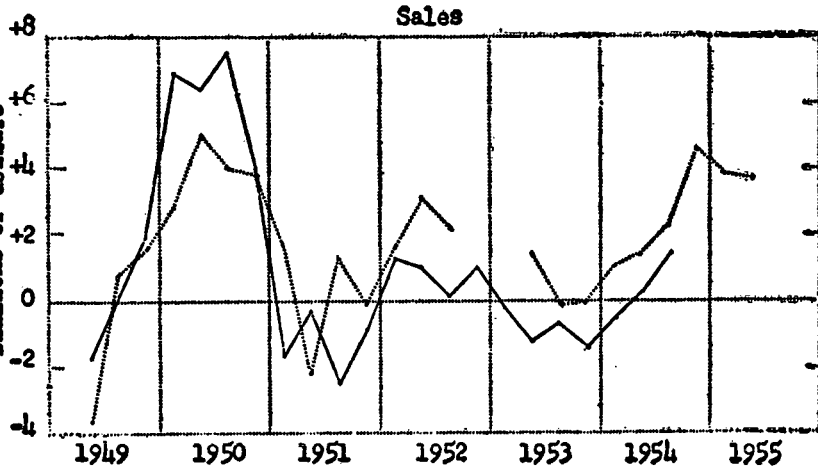
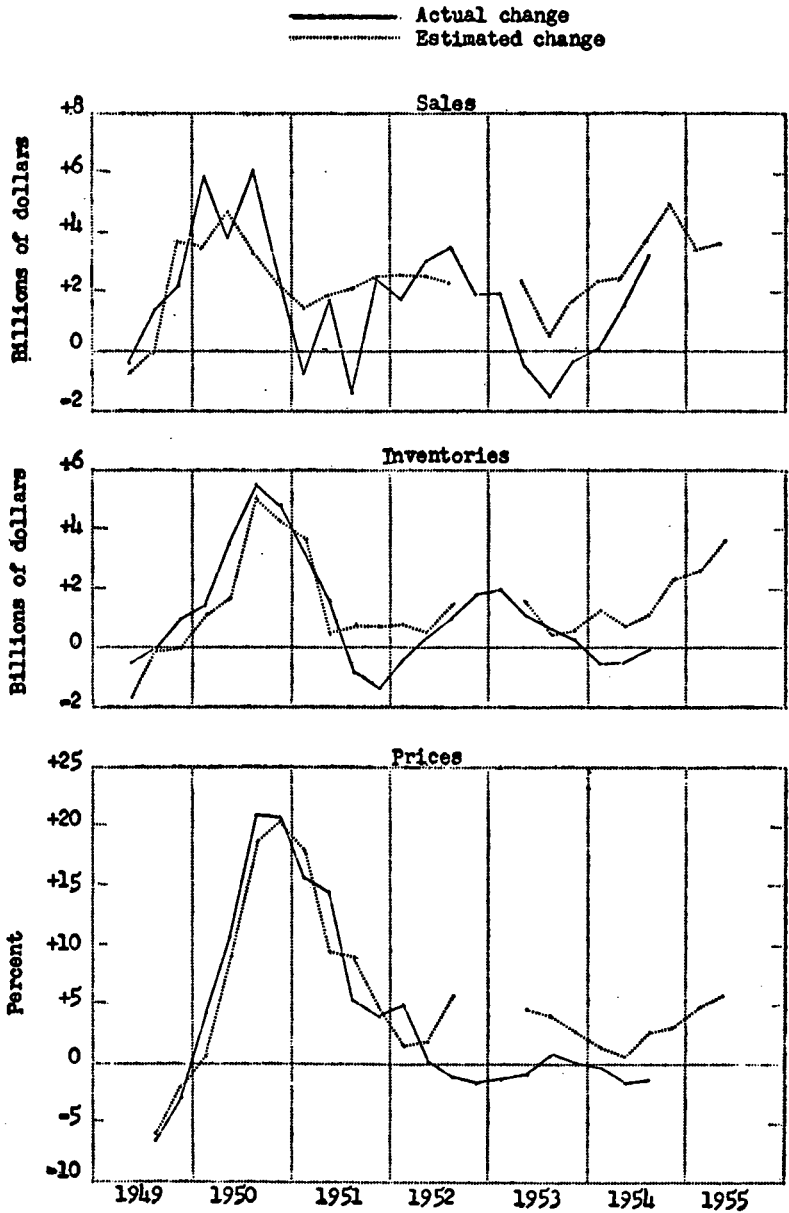


Chart 5

Changes in Selected Economic Variables from the Corresponding Quarter a Year Earlier, Compared with Estimated Changes Based on Expected Diffusion for the Identical Period and Actual Diffusion for the Period Two Quarters Earlier. Retailers
(Data plotted at midpoint of period of change)



mulas to changing expectations in the 1953-55 period. Recalculations of the regression equations to cover the latter period, besides improving the estimates, leads to changes in the formulas consistent with this explanation.

Granted this upward bias of the post-1952 predictions, it is interesting to compare the delineations of recession and revival provided by the actual and predicted changes. For this purpose Table 5 proves most convenient. The actual Department of Commerce results suggest that the trend of sales was generally downward in the second quarter of 1953 (see the column headed IV Q 1953) and that the same was true of manufacturing employment and new orders. Exceptions to the employment trend occur, however, in durable goods manufacturing and in trade, and all classes of inventories continue to rise. The directions of trend established in II Q 1953 generally continue in III Q 1953, though at reduced levels; durable goods employment actually turns downward, and only retail prices provide an exception by turning upward.

By comparison, the estimates based on Dun and Bradstreet data "predicted" downward trends only for III Q 1953, except in the case of manufacturers' new orders for which the downtrend of the previous quarter was caught. The directions predicted for III Q 1953 agree with Department of Commerce data with three exceptions: retail sales and nondurable goods manufacturers' employment and new orders, for all of which a continued upward rise was erroneously predicted. By and large, therefore, one would date the 1953 peak in business activity not earlier than the second quarter from Dun and Bradstreet data; perhaps as early as the first quarter from Department of Commerce data. The dating in both cases is, of course, that implied in a moving-average trend of activity.

Turning to the later Dun and Bradstreet predictions, they show good agreement with the Department of Commerce changes except for all classes of inventories and for retail series generally. Because of the upward bias of the predictions, however, they show revival to be developing too soon. In fact, looking at the column headed IV Q 1954, one would conclude that revival was under way by the second quarter of 1954 except in the case of manufacturing employment. By contrast, the Department of Commerce data suggest that the revival cannot be dated earlier than the third quarter

of 1954, when some inventory liquidation was still taking place and the decline in employment was not yet wholly arrested.

For the rest of 1954 and the first two quarters of 1955, the Dun and Bradstreet predictions show a progressive improvement in business. The growth in inventories and employment appears, in fact, to be accelerating; but a slowing down in the rate of growth of manufacturers' sales and new orders, especially in durable goods industries, has begun to manifest itself. We have seen, however, that the upward bias of these predictions causes a lag in the detection of recessions and a lead in the response to revivals. Until this bias can be remedied, it must be borne in mind in interpreting such predictions.

Open questions on the Dun and Bradstreet Surveys. This sketch of completed research on the Dun and Bradstreet Surveys will suffice to indicate the elements of promise that have been found in such data. It is apparent, however, that many unsettled questions remain even in the areas where research has been undertaken; and our investigation has turned up still others. A very brief summary of open questions about the Dun and Bradstreet data is therefore in order to motivate the recommendations that we shall make below.

We have already noted that a last ditch position can be defended against the forecasting value of the Dun and Bradstreet expectations. This will remain true as long as we are unable to separate the purely expectational content of the forecasts from the part that reflects actual change from the initial quarter to the date of the survey. Two solutions appear to be available: (1) To secure the expectations on a strictly forward-looking basis by asking for the expected change from the present to a stipulated future quarter. (2) To secure supplementary evidence on actual diffusion from the base-quarter of the expectations up to the date of the survey. The first solution has a number of attractions: (a) the expectations could be interpreted to provide a longer reach into the future; (b) the underestimation bias of the expectations might be easier to cope with; and (c) the data would be in a form to facilitate the use of more up-to-date auxiliary information on realized variables. This solution, however, collides with the seasonal problem. Experts at Dun and Bradstreet are extremely skeptical of the feasibility of asking businessmen for their expectations net of seasonal influences, and are unimpressed by the fact that the discontinued *Fortune* "Executive Forecast" as well as

more recent surveys have made successful use of questions about prospective changes net of normal seasonal movements. Dun and Bradstreet, however, are prepared to experiment with a supplementary question about forward prospects that leaves the seasonal question open, and there is some experience to suggest that the seasonal component of the resulting diffusion data can be dealt with by direct time series methods. The same seasonal problem would, of course, afflict the second solution, but the responses of the executives interviewed would have a firmer basis in the firms' records.

A second question concerns lead and lag relations. The tendency of expectations to lag actual experience has been noted in both percentage and diffusion data, but it appears that actual diffusion leads the change in corresponding aggregate series. This phenomenon is most conspicuous in the case of Dun and Bradstreet data for inventories, but it affects other variables as well, and it shows up in actual diffusion data compiled by the National Association of Purchasing Agents. What is the explanation of this phenomenon? Is it due to the failure to weight directions of change by a measure of firm size? Is it a peculiarity of the special diffusion measure employed in these studies? Or is it due to under-representation of certain late-moving firms in the diffusion data? These and similar questions suggest the need of technical study of the ways in which diffusion data can be employed. What is the optimum way of combining the percentages of firms experiencing rise, no change, and fall? Ought the Dun and Bradstreet data be reweighted in accord with the size-distribution of firms in the business population at large? Are supplementary data required to ascertain the experience of the very small—and perhaps also the giant—firms missed by Dun and Bradstreet interviewers?

Our final question has puzzling aspects. Study of the Dun and Bradstreet data shows a greater consistency in the patterns of expectations about the several operating variables reported on than in the indexes of actual experience. To some extent, this phenomenon is to be expected; it suggests that expectations about different variables are consistently formed, and that actual outcomes are ruled to some extent by erratic and unpredictable factors. But it is also found that new order expectations do not lead sales expectations by anything like the same margin as the actual diffusion of new orders

leads that of sales, and this fact argues against the rationality of expectations. Can this finding be explained without discrediting the expectations generally? Or does it mean that expectations are not formed reflectively, and that answers to different questions are undiscriminating?

Recommendations. Our recommendations are aimed at providing the factual basis for answers to these and other questions suggested by the foregoing appraisal of the Dun and Bradstreet surveys.

(1) The most important recommendation should be the easiest to fulfill. *We believe that the importance of the Dun and Bradstreet surveys calls for full, systematic, and up-to-date descriptions of the population sampled, sampling procedures, concepts employed (including instructions to field personnel and respondents), editing and tabulation procedures, and characteristics of nonrespondent firms.* We have already noted that Dun and Bradstreet have taken important steps in this direction, and that they have been most co-operative with this Committee as well as with interested research organizations. What is needed, however, is a full report such as only Dun and Bradstreet personnel can prepare, with periodic brief supplements to keep users abreast of current developments in the survey procedure.

(2) *We also recommend that during a trial period, the survey data be compiled, though not necessarily published, in sufficient detail to permit a breakdown of respondents by size of firm.* Too little is yet known about diffusion data to decide whether weighted or unweighted directions of change are most useful, and only a sufficient body of empirical evidence will enable a decision to be made. It does seem likely, however, that the principal centers of coordinated forward planning are to be found in large firms and that proper stratification of samples and a weighting of responses by a measure of the importance in the business population at large of each class of respondents would effect improvements in the evidential value of expectations data. Firm-size breakdowns would also provide a more refined check of the Dun and Bradstreet sample, both with respect to its representativeness and with respect to its stability through time.

(3) *Our third recommendation is that Dun and Bradstreet add to their questionnaire, on a purely experimental basis, a query dealing*

with expectations about some important variable (say, new orders) for a forward period from the date of survey. The seasonal problem should be handled as their experience dictates, but reporters should be carefully briefed on the decisions and efforts made to secure their full co-operation in carrying out the experiment.²⁸

(4) Finally, we urge Dun and Bradstreet to give careful thought to the feasibility of one or more follow-up surveys—perhaps on a limited basis—in which the expectations of individual firms would be checked against their subsequent experience. The fact that firms in the “analytical file” are contacted somewhat oftener than twice a year suggests that such reinterviews in connection with two-quarter

²⁸ As this report is submitted, we can report the first results of such an experiment by Dun and Bradstreet, secured in late June 1955:

Manufacturers' Expectations about New Orders, IV Q 1955
Compared with II Q 1955

Item	Manufacturers		
	Total	Durable goods	Nondurable goods
Number reporting	493	260	233
Percentage expecting:			
Increase	62	60	65
No change	22	23	21
Decrease	16	17	14

The total number of replies to this special question virtually equals the number of responses to the standard new order question comparing IV Q 1955 with IV Q 1954. Corresponding results on the latter question are as follows:

Manufacturers' Expectations about New Orders, IV Q 1955
Compared with IV Q 1954

Item	Manufacturers		
	Total	Durable goods	Nondurable goods
Number reporting	505	265	240
Percentage expecting:			
Increase	73	72	75
No change	24	24	23
Decrease	3	4	2

forecasts may be practicable.²⁹ However, it is not for this Committee to judge such administrative questions. We merely call attention to the great theoretical and practical interest of reinterview data if they could be had.

MONTHLY BUSINESS SURVEY OF THE NATIONAL ASSOCIATION OF PURCHASING AGENTS³⁰

The Monthly Business Survey of the National Association of Purchasing Agents has considerable merit as an early, informal commentary on the current business trend and particularly on the immediate short-run outlook³¹. However, its general and informal form and its qualitative rather than quantitative character are major deterrents to extending its usefulness as a prime economic barometer.

This should not be interpreted as casting any reflections upon the Survey. It apparently has accomplished its primary purpose by providing NAPA members with a quick summarization of economic trends and outlook. On the other hand, there are serious limitations in procedure and in the data finally released which restrict its possibilities as a full-time tool for business analysis.

Purpose and theory. Two possibilities may be served by a survey of executive opinions concerning business activity. First, such a survey can attempt to measure changes in the aggregate current position of individual firms through the sum of executives' responses and the supporting information that they make available. The survey approach has the added advantage of yielding prompt results. The implied assumption that purchasing agents or any other group

²⁹ Such reinterviews are not at present yielded in significant numbers. Comparison of the survey of April 1955 with that of April 1954 yielded 43 firms out of 560 that were common to both samples. As the decisiveness of this result was somewhat uncertain because the same two calendar weeks were not covered in both surveys, a similar comparison was made of the June-July survey of 1955 with that of 1954, for which the calendar periods covered were nearly identical. Result: 44 out of 575 firms were common to both surveys, or roughly 7.5 per cent of the more recent sample. A comparable test of "call-back" overlap showed only 16 out of some 570 firms common to both of two successive quarterly surveys. All these comparisons relate to manufacturers' sales expectations, on which responses are invariably most complete.

³⁰ The Committee is indebted to Gerald Glasser of New York University for assistance in the preparation of this section. For description and additional appraisal, see Heinz E. Luedicke's "The Effectiveness of Opinion Surveys," available on request from the National Association of Purchasing Agents, 11 Park Place, New York, N. Y.

³¹ The NAPA survey contains valuable inferential data (perhaps the earliest clues to changes in current inventories, production and new orders) as well as direct expectations. For purposes of integrated treatment, the two types of measures are reviewed jointly in this section rather than treated separately.

of businessmen can evaluate accurately their current economic status is explored more fully elsewhere (cf. Chapter VI and VII).

Secondly, business surveys are frequently employed to measure the immediate future of the national economy through the sum of executive expectations. The implied assumption here is that the businessman—in this instance, the purchasing agent—with his eye upon the industry's or economy's pulse, is in a position to anticipate the rate and the direction of future change. Such an attempt is exposed to all the hazards of any forecasting procedure.

The 200 members of the Business Survey Committee, upon whose monthly individual reports the NAPA conclusions are based, have been carefully selected as men of experience, with demonstrated ability to observe and report on the pulse beat of their own businesses. An absolute requisite of business opinion surveys is to reach sufficiently high in the managerial hierarchy to tap informed sources on economic levels and prospects of the enterprise.

Some 42 industries are represented on the NAPA's Business Survey Committee. No further information is available, however, on the industrial composition of this Committee. Respondents are located in all States except two: New Mexico and Montana. Membership turnover, we are told, is "very low." Any Committee member who fails to answer three consecutive questionnaires without proper excuse is dropped. Turnover was about 10 per cent a year during 1947-54.

The findings of the NAPA survey are available before the end of the month to which it refers. This is a mark difficult to approach for quantitative aggregate series, particularly of the inferential type, even under the most ideal circumstances.

In this connection our preliminary analysis reveals a smoothness of cyclical measurement in certain types of data collected by NAPA, as considered in detail later, which may help determine cyclical turning points more rapidly. At present specific data on the number reporting or anticipating change in key series are not regularly made available with the Survey's interpretations. These data on internal trends, upon which the evaluations are based, possess a smoothness which does not exist to any such degree in aggregate inferential series.

The NAPA questions its membership irregularly on the general

outlook and expectations for selected areas. Many of the conclusions on expectations, however, appear to be more the end result of the Chairman's own evaluation of trends than the sum of expectations of purchasing agents explicitly defined. Particularly in this area our later recommendation is that more formal procedures should be sought.

The NAPA survey is preponderantly directed to exploring the immediate situation and, occasionally, the outlook for the individual enterprise or firm. Interest in the national scene is strictly secondary. Its questionnaire clearly indicates that "check marks and comments should reflect conditions in your own business." The questions asked, in turn, are closely related to the realm of economic activity in which the purchasing agent makes his living.

Performance and appraisal. How well have NAPA committee members succeeded in evaluating their current positions, and how well have they forecast the immediate future? Quantitative information on the answers by purchasing agents for individual firms is not available.

Some type of spot check on individual reporters should be strongly considered. Personal or emotional bias undoubtedly can and does condition responses here as in other opinion surveys—and due adjustment may have been made by the Chairman for known individual bias. For any survey of this type a quality control spot check of respondents is almost a necessity. Such a procedure could be simply and expediently carried through as a continuing check. It would indicate when and by whom incorrect responses had been given without necessarily being designed to show when the sample was not representative of the total economy. A workable level for such a quality-control analysis would be at industrial breakdowns. Data on industrial composition might be made available on request to interested parties, if not published regularly.

Sample. More detailed consideration should also be given the NAPA sample as respects its selection process, its internal composition and its size. As currently constituted, it can be categorized as a stratified judgment sample of about 200 purchasing agents. Willy-nilly, the NAPA is discovering that implications and generalizations derived from its sample results are being applied to the total economy.

The NAPA survey's membership is purposively selected, and it is not in any way a random probability sample. A probability sample is one that gives every member of the particular universe or population, usually through a mechanical device, some chance to appear in it. Obviously, the NAPA sample does not do this. Only firms which are members of the Association have a chance of appearing in the sample and within the NAPA universe selectees are chosen by the Chairman, and not by a random process.

Possibilities of subtle judgment biases exist. Among those that might be found are (a) larger or smaller firms included out of proportion, (b) sensitive industries over or under-included, (c) over-selection of more efficient firms (with greater resistance to the business cycle), etc. There exists a strong possibility that the sample is not representative of the economy's business population.

Even if percentage breakdowns of membership should correspond to population proportions in size, industry and geographical breakdowns, this would still not guarantee that the NAPA sample is representative of the economy's business population. The sample's internal composition could check quite favorably against national benchmarks for various descriptive characteristics and still not check against the economy in the various factors it purports to measure, e.g., inventories, new orders, production, employment and prices. Thus some type of a continual quality check, as previously noted, probably best applied at the industry level, should be utilized. While this is no preventive of bias, it would indicate discrepancies to be checked out as they arose.

Purposive sampling, as opposed to random sampling, has its own cluster of advantages. In NAPA's instance, a design of the random type would undoubtedly admit less accurate or more poorly informed opinions on business experiences and expectations. A purposive sample, carefully constructed, can reduce this bias far better than a probability sample. Pragmatically, too, no other course than a judgment sample may be open to NAPA, with the resources at its command. We have found in our review no recurrent inconsistency which can be attributed to its purposive sample.

A stratified sample design is one which divides the population into subgroups, and then samples proportionately (to some statistical criterion) from these subgroups. The NAPA strives for

stratification in at least two respects, industrially and geographically.

Stratification is only useful when the subgroups are heterogeneous in the characteristics being measured. Our industries do so frequently respond differently to various stages of the business cycle that industrial stratification does lead toward increasing precision. A comparison of NAPA's industrial stratification with that of the Federal Reserve Board's index of industrial production or BLS nonagricultural employment, however, would be helpful.

Geographical areas, it appears, also have heterogeneous cyclical patterns to some degree. The degree may be smaller so that this type of stratification is less necessary. Stratification by firm size may also have value, depending on how production and employment experiences differ over the cycle.

The size of the NAPA sample, although only 200 or so, seems adequate if there is little nonresponse; the turnover rate previously mentioned suggests a substantial proportion of marginal members. A reduced sample size, limited solely to active, regular correspondents, might suffice to bring even better results.

Chairman's role in evaluation. The survey summation of opinions and expectations of purchasing agents is not done quantitatively. Rather, it is a qualitative interpretation of the total economic picture derived from the Chairman's analysis and appraisal of the individual questionnaires. We are told that: "In the statistical tabulation, larger and smaller companies are treated alike. The Chairman's remarks try to evaluate the material according to the standing of the reporter and his experience. The Chairman's reports are on a month-to-month basis." Such an approach has the advantage of flexibility in presenting the trends in the economy as seen by the Chairman through the medium of 200 purchasing executive reports.

However, the information upon which the Chairman bases his economic evaluation might conceivably be interpreted differently by others. For the Survey reader little formal information is provided upon which he might base his own analysis and conclusions. As always in any verbal or qualitative presentation of economic activity there exists an impenetrable overlay of generality. For example, the term "steady improvement," when applied to the outlook for production, has ambiguity when compared to a specific quantitative criterion such as the likely degree of change in the

index of industrial production. The \$64 question—does “steady improvement” imply a one, two, or five per cent rise in physical output?—remains unanswered.

We believe the quantitative bases for the qualitative interpretations of the Chairman should be published. Otherwise valuable supplementary information is lost to the reader.

Adjectives are less numerous than numerals and are incapable of providing the richness of detail contained in the results of NAPA questionnaires. From the tabulated results supplied us we found, for example, the same conclusion, “lower new orders,” reached on data varying as widely as those shown in Table 6.

TABLE 6
NEW ORDERS

Date of questionnaire	Conclusion based on NAPA analysis	Percentage of respondents reporting:			Estimator ¹
		Increases	No change	Decreases	
1953					
February.....	Lower	28	55	17	111
March.....	Lower	20	59	21	99
August.....	Lower	20	47	33	87
September.....	Lower	19	47	34	85
October.....	Lower	17	43	40	77

¹ Net percentage of increases plus 100 per cent, as discussed on following page.

In some instances, the percentage data shown as three separate totals or combined into a single “estimator” may be no more precise than a single descriptive phrase. The detail then may be of no value; this point is discussed below more completely. Here our point is that the NAPA, if they wished, with the data they already have in hand, could provide formal measures to alleviate generality, and also enrich their monthly review for a professional business audience.

Questionnaire. At present the NAPA questionnaire uses a three-category check list in its answer form for five important economic series: production, new orders, commodity prices, inventories and employment. The threefold list is as follows:

- Better than month ago (or higher, or greater)
- Same as month ago
- Worse than month ago (or lower, or less)

A five-item scale might be set up to secure a better yield of opinion in the following form:

- Substantial increase
- Moderate increase
- No change
- Moderate decrease
- Substantial decrease

The five-point scale, without creating a heavy workload on the respondent, would give further meaning to anticipated change.

Responding members give specific variate data on one question—that on buying policy—where they state “hand-to-mouth, 1, 2, 3, 6 or 9 months, etc.” All other questions asked by the Survey are qualitative and are primarily supplements to the six queries listed above.

The NAPA should also appraise the desirability of putting their expectation queries on some formal basis similar to the five experience questions that are now regularly asked. Expectations, we believe, should be surveyed at regular periodic intervals, perhaps quarterly.

Further questions that could be asked of the NAPA membership would refer to change in sales (shipments), unfilled orders and profits. The Survey might well provide an early estimate for profits data—an acute shortage area in our complex of current economic statistics.

Luedicke evaluations. Dr. Luedicke’s two studies on the NAPA survey cover the periods 1947-53 and 1953-54. For five areas—production, employment, prices, inventories, and new orders—he used a 2-1-0 point scoring system. His combined conclusions are as follows:

	Score	Maximum	Percentage of accuracy
Production	139	180	77
Prices	162	182	89
Employment	140	182	77
Inventories	108	174	63
New orders	89	158	56

The more volatile series have, as might be expected, the lower accuracies. Also it must be remembered that sampling difference must take a heavy toll in this isomorphic (one-to-one) comparison. Thus this part of the Luedicke studies only shows the degree of validity of the NAPA qualitative judgments as compared to month-to-month changes in aggregates.

What impressed us most is that the NAPA survey seems to find its greatest value in its pure portrait of cyclical trends. It does not appear to be affected by irregular or random variations to any great degree. Thus, in December 1953 the Survey reported "sharply lower" new orders on the basis of a 12-44-44 percentage response. The Government series on manufacturers' new orders jumped up in December only to dip again in January. The patterns were similar, but the Government series caught an irregular movement that the NAPA survey was apparently able to avoid in this and numerous other instances.

Tentatively, it seems that the NAPA survey may have limited value in measuring irregularities in change. On the other hand, it may have unique value in measuring pure cyclical movements. Its passiveness towards irregular influences may be actually an advantage for quick determinations of short-term trends.²²

Economic estimators. Our main criticism of the NAPA survey is found in its generality and informality. *Some specificity should be given to this survey by releasing with the qualitative round-up a set of quantitative measures on the six objective questions asked in the questionnaire.*

To facilitate experimentation with their use, the responses to the five current three-answer questions should be tabulated to show the percentage of purchasing agents reporting "rises," the percentage reporting "declines," and the percentage reporting "no change." For convenience of interpretation, these might then be utilized to form an estimator in the simple form.

$$P_1 - P_d + 100$$

where P_1 is the percentage of reported rises and P_d is the percentage of reported declines, with the 100 per cent added only because this

²² See in this connection the article by Geoffrey H. Moore, "Diffusion Indexes: A Comment," *The American Statistician*, October 1955.

is what statisticians like to think of as "normality." For buying policy, the average time could be considered relative to some "normal" value such as 60 days.

Such an index would have meaning only in comparing the current month with the previous month. If more firms report increases than report decreases, this may signal an increase in the series or quantity being referred to. It is unwarranted, however, to interpret such percentage data on a time-series basis. Even though the number reporting increases may be lower than in a previous Survey, this may not indicate a dip. All such a drop would imply is that the rate of increase is slackening. Only when more members report decreases would such an inference be justified.

This point is one which the NAPA survey has handled better in recent years. Earlier in the postwar period, there was a tendency for the Survey to interpret each month's data by comparison with earlier months. Now, however, each month's percentages are correctly analyzed from the point of view that they actually measure in themselves the change from the previous month.

The NAPA percentage series would supposedly include seasonal factors, since they refer to a month-to-month basis. Preliminary checking of the data for 1953-54 indicates little such influence. We have been told, however: "There is no attempt to de-seasonalize the answers. As a matter of fact, references to seasonal qualifications are not frequent."

Seasonality in the new order data for 1948-55 appears to be only nominal.⁸³ It is strongest in the August and September Surveys where a swing of about 12 and 16 percentage points seems to arise because of seasonal influences.

The numerical range of the proposed formula, before seasonal adjustment, is 0 to 200. A value of 100 may be interpreted as the "normality" level, or an estimate of no change in the economic characteristic under consideration. (This, however, assumes that a survey has no bias. If this assumption were incorrect, then 120 or 80 or some other value would be correctly interpreted as the "normality" level.)

⁸³ Detailed study of percentage series was confined primarily to the new order data which were made available to our Committee by the NAPA for 1948-55.

Such economic estimators suffer from a disadvantage that is not easily rectified. What is meant, say in terms of actual production, if the estimator is 108 in a given month and 110 in the next month? This may mean a 1 per cent or a 10 per cent rise in industrial production. The estimator says nothing explicitly about the over-all, aggregate magnitude of change; although it does give quickly the direction of change for the net percentage of firms. Such information is valuable in itself.

Actually, however, the two types of information—changes in the aggregate and in the direction data—should be strongly complementary. Thus, as the number of firms experiencing increases becomes larger, one might expect the aggregate to increase at a higher rate. This process of inferring variate change from simple attribute data seems to work out well in many cases.

There appears to exist a fair relationship between change in some of the percentage data series of the NAPA and change in corresponding aggregates. Ascertaining the degree and the nature of such covariation merits further study. Our analysis of the NAPA new order series for 1948-55 showed moderate correlation between that series and the government's reports on changes in the new orders situation after correction for seasonal fluctuations.³⁴ Similar checks covering the past two years for the other series on production, employment, and prices show even greater promise.

We believe the smoothness in movement of the type of series in the NAPA survey should tend to reveal clearly and early the recession trough after which the curves would move up to and over the 100 level. Similarly, they can be expected to move down prior to recessions as measured by aggregates. We found this to be true in striking fashion for the 1954-55 recovery. Also the new order series, considered in more detail along these lines for 1948-55, yielded highly encouraging results. (See Charts 6 and 7). *We strongly urge that the NAPA assemble from its files the required data for earlier years so that this promising thesis can be more fully explored.*

Final mention has been reserved for the buying policy question in the NAPA survey. This deserves particular not for two reasons.

³⁴ A similar finding is contained in the article by Moore, cited in footnote 32.

Chart 6

New Orders: NAPA and OBE's "All Manufacturing," 1948-1955

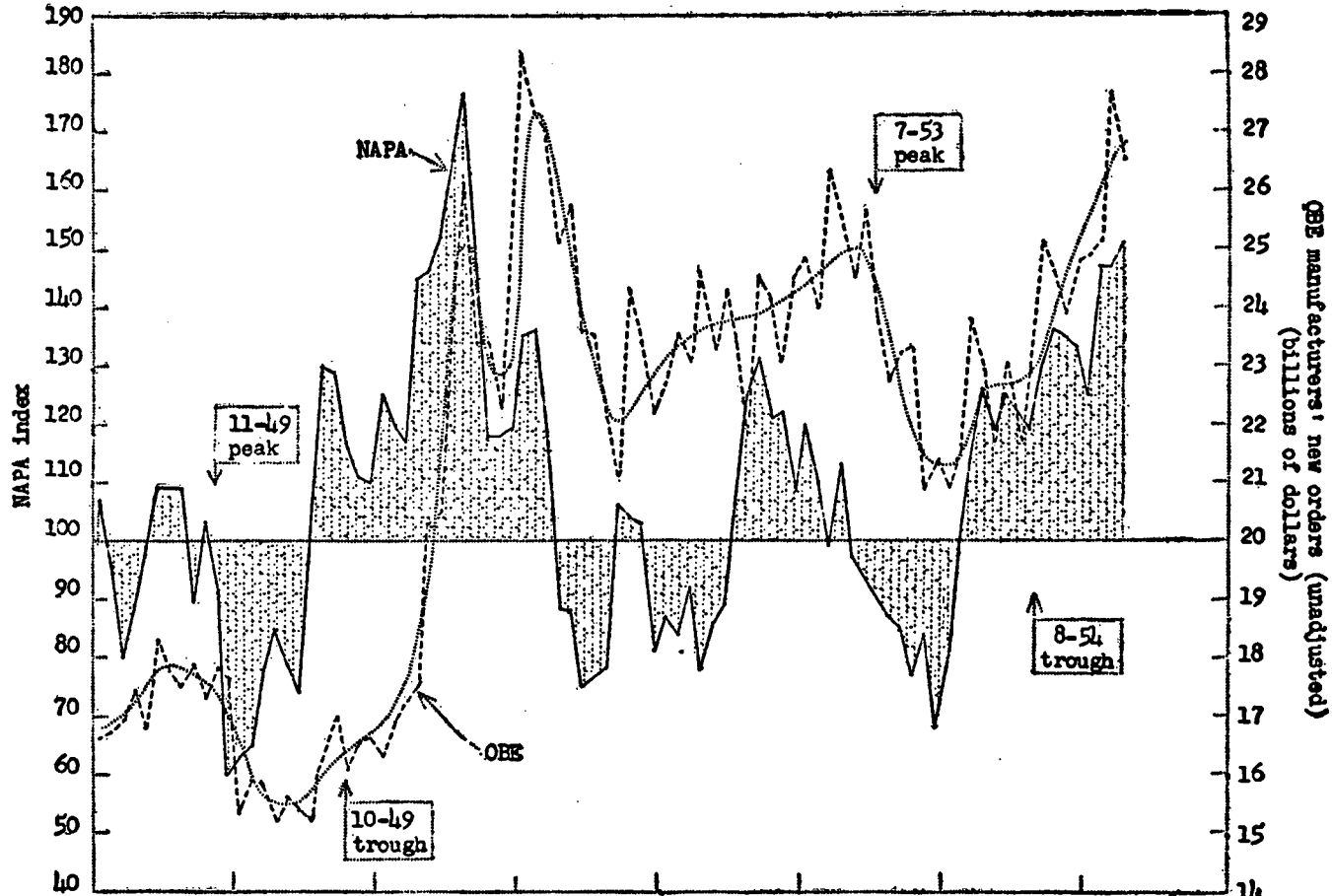
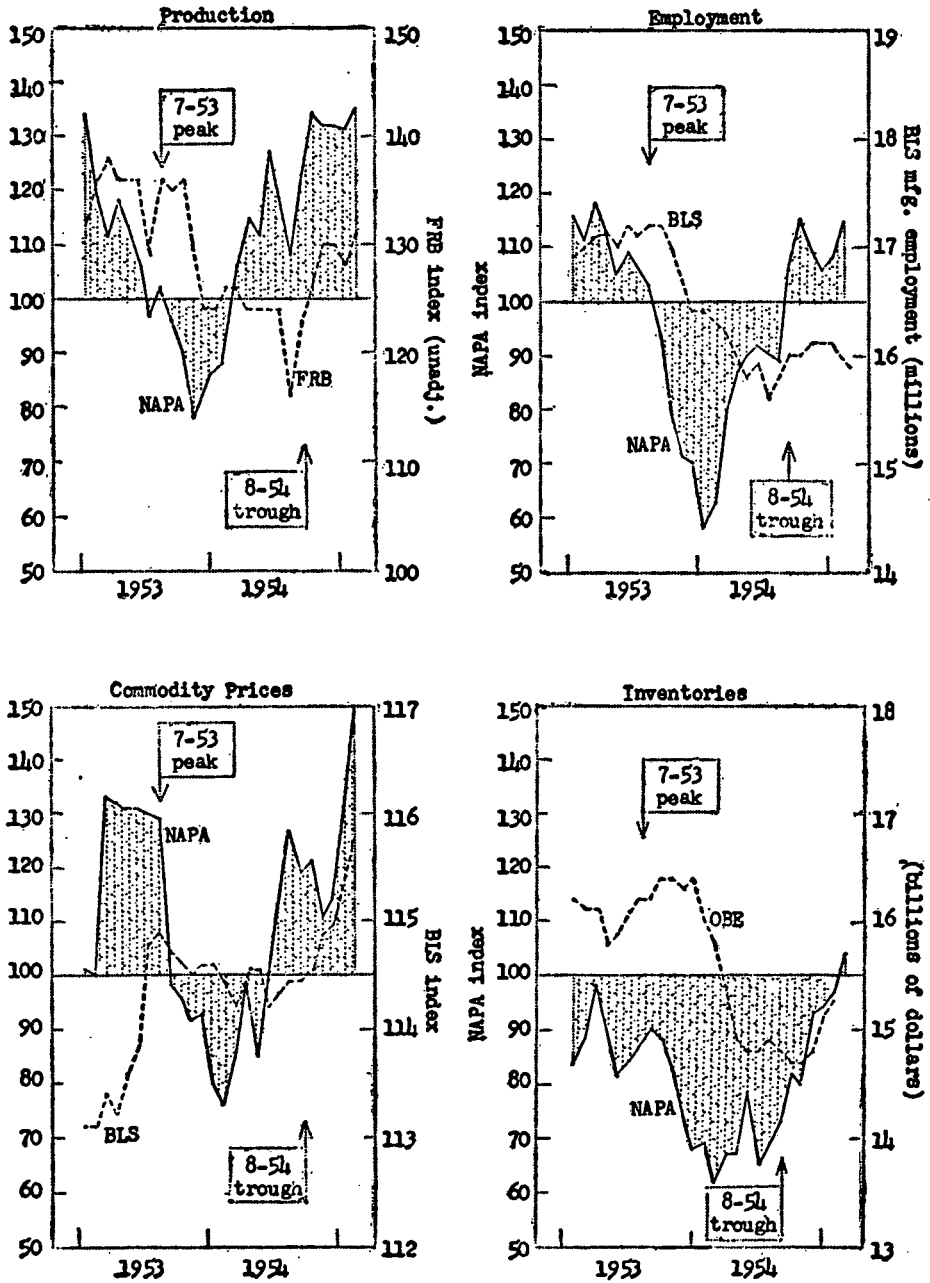


Chart 7

Comparison of NAPA Series with Selected Aggregates, 1953-1954



It represents, first, the closest approach to formalization of expectations data in this survey. Even so, it is not pure expectations data directly measuring businessmen's opinions of the future. Nevertheless, buying policy is, to a great extent, a direct measure of purchasing agents' opinions of future markets and, hence, of their expectations of probable future demand and prospective supply.

Second, the buying policy question is important because it is the hard core, the *raison d'être*, of the NAPA reports. As Dr. Luedicke told this Committee, "the practical purpose of the monthly survey is to help purchasing agents in the development of 'buying policy'."

Statistical evidence with which to evaluate this particular estimator completely is lacking at this point. Its value, at least theoretically, seems high enough to warrant further detailed investigation. It is pertinent to note, though, in closing that an "average" buying policy series based on NAPA data back to 1953 reveals a low point was struck in May 1954. The following month the NAPA inventory estimator hit its relative low point. This rough coincidence should be expected. In contrast, the production and new order estimators had begun to signal revival much earlier in 1954. Buying policy time was not reversed and was still narrowing until almost midyear. The data for 1953-55 lead to somewhat negative results but this conclusion is derived from too limited a time span to warrant any final judgment on the intrinsic value of this series.

RAILROAD SHIPPERS' FORECASTS

For the purposes of this report, the railroad shippers' forecasts have a number of distinctive and valuable features. (1) The period covered, 1927 to date, is one of the longest for which continuing expectations on a reasonably consistent basis can be had. (2) The forecasts are made in quantitative form, both in terms of the expected number of carloadings of each commodity in a given quarter and in terms of the percentage change in carloadings from the corresponding quarter a year earlier. (3) Data on actual outcomes against which to test the expectations are provided in the same series of reports. And, finally, (4) the shippers' surveys have already

been subjected to careful and extensive analyses.⁸⁵ The existence of a considerable critical literature on these forecasts permits the committee to concentrate on only the high spots of the findings.

Nature of the surveys. In terms of the definitions and concepts employed in this report, the shippers' forecasts are surveys of anticipations of individual shippers looking toward short-run changes in commodity shipments by the reporting firms. They are thus expectations about an operating variable from the point of view of the individual firm; but as published they can only be interpreted as expectations for separate regions, for separate commodities (or the associated industries), for various commodity groups, and for manufacturing or mining as a whole. They are, finally, opinion surveys conducted by the method of questionnaires predominantly, though in some regions and for some commodities direct interviews may be employed.

The forecasts originated in the severe shortages of freight cars that frequently occurred in the early 1920's. To facilitate the interchange of information about the needs for and supply of cars between shippers and representatives of the railroads, regional Shippers' Advisory Boards were set up throughout the country under auspices of the Car Service Division of the American Association of Railroads. There are thirteen such regional boards, comprised of shippers who account for the great bulk of railway freight traffic in the country; and formal liaison with the AAR is provided by paid field secretaries furnished by the AAR to each regional board. All the regional boards have set up commodity committees, each with a shipper as chairman, to deal with particular species of traffic. By 1927 each committee was making a formal estimate of the number of cars that would be needed for the loading of its kind of traffic in its region, and the estimates were considered sufficiently standardized to justify the issuance of national totals.

The forecasting procedure is founded on reports of individual shippers to the regional boards. Most commonly the reports are made directly to the field secretary, but in at least one region reports

⁸⁵ Robert Ferber, *The Railroad Shippers' Forecasts*, Urbana, University of Illinois, 1953. (For an abridged account by the same author, see "Measuring the Accuracy and Structure of Businessmen's Expectations," *Journal of the American Statistical Association*, XLVIII (September 1953), 385-413). Thor Hultgren, "Forecasts of Railway Traffic," *Short-Term Economic Forecasting*, pp. 363-380. Also Modigliani and Sauerlender, in *Short-Term Economic Forecasting*, pp. 261-361.

are solicited by the various commodity chairman. In the former case, the procedure is likely to be fairly formal and standardized: The secretary of the board mails out a questionnaire to each member asking for the number of cars the member expects to require for each class of commodity in the coming quarter and the actual number of cars shipped in each class in the corresponding quarter of the year before. Anticipated requirements and actual shipments of the respondents are then totaled for each commodity class, and the ratio of the two computed. This ratio, applied to the total number of cars actually shipped from the particular region in the corresponding quarter of the year before, yields the regional forecast for the given commodity class. These forecasts are subject to modification by the chairmen of the various commodity groups or at the quarterly meetings of the membership of the regional board, but they are seldom changed except in response to sudden contingencies that could not have been foreseen by the shippers at the time of forming their estimates.

When forecasts are compiled by the commodity chairmen directly, they may follow a formal procedure or solicit responses by telephone or personal interview. In either case, to avoid asking potential competitors for privileged information, they request only the expected percentage change in shipments from the corresponding quarter of the previous year. By more or less informal methods, these percentages are then averaged for each commodity class, and the resulting figure is applied to the entire region's shipments of that class in the corresponding quarter of the year before. Though the procedure would be expected to yield less satisfactory estimates than the more formal one adopted by the secretaries, the evidence does not seem to indicate that this is so.

The estimates for each commodity class in each region are forwarded by the secretaries to the Car Service Division, where they are assembled and published, without further editing, in a quarterly release called "National Forecast of the Regional Shippers Advisory Boards." Thus, near the beginning of each quarter, data are available for each of thirty-two (originally twenty-seven) classes of commodities on the actual carloadings in the corresponding quarter of the previous year, the estimated carloadings for the quarter, and the percentage increase or decrease of the latter over the former.

The information is given for the country as a whole and for each of the thirteen regions.

Representativeness of these data is necessarily somewhat uncertain. Actual carloadings, being based on complete coverage of the railroads' records, amount to a virtually complete census; but forecasted carloadings, being based on estimated percentage changes of a sample of shippers, are subject to sampling variability. Then, too, not all shippers are members of the Regional Shippers' Advisory Boards, and not all members respond to the request for estimated shipments; the sample is thus a self-selected, rather than a random, subset of the population of railroad shippers. The coverage of the surveys, however, is rather good. The response rates of members of the various commodity groups vary between 25 and 80 per cent. In terms of shipments, the coverage is even higher because special efforts are made to secure estimates from the larger shippers in a commodity group as well as from members of the commodity groups that are of greatest importance in a particular region. A reasonable estimate is that the percentage of shipments represented by the sampled firms is of the order of 50 per cent or more for most regions and commodity classes, and often reaches virtually complete coverage.

In sum, the objectivity of the survey process, together with the restraint exercised at all levels in editing the results, suggests that most of the published forecasts may be treated as aggregates of individual-firm estimates. Moreover, the long history and broad coverage of the surveys imply that the results are reasonably representative of those that would be secured from complete coverage of the population of railroad shippers.

Accuracy of the shippers' forecasts. All previous studies of the shippers' forecasts concur in finding them of slight predictive value. The appearance to the contrary in a raw time series of forecasts is ascribed to two considerations (1) the fact that there is a high degree of serial continuity in shipments from one quarter to the next, so that a given quarter's level is a fair prediction of the next quarter's level; (2) the fact that shippers generally have a good idea of the seasonal influences to which their sales are subject. Thus when one abstracts from seasonal variations and allows for the level of shipments attained in the previous quarter, the shippers appear to

have little net ability to forecast the quarter-to-quarter direction of change [Hultgren and Ferber]. Indeed, it is even arguable that, apart from seasonal movements, they tend to forecast the reverse of the actual quarter-to-quarter change [Ferber]. These remarkable findings are secured by essentially the same methods as were employed in the Illinois study of the Dun and Bradstreet data, and are matched by another finding also encountered in that study: namely, that expectations are subject to a systematic bias of underestimation of the magnitude of change. An allied finding is that turning points in expectations almost invariably lag behind turns in the actual level of shipments.

Impressive care has gone into the demonstration of these findings, but it seems necessary to repeat a warning that we advanced in the section on the Dun and Bradstreet surveys. Where a systematic tendency exists to underestimate the magnitude of a four-quarter change, failure to take account of this bias in assessing the value of the expectations may lead to over-pessimistic conclusions. To give a crude illustration of the principle, suppose that each shipper's forecast was correct as to direction but was numerically only three quarters of the actual change. Considered on a quarter-to-quarter basis, such forecasts would seem merely to predict a continuation of the previous quarter's level of shipments; yet a simple multiplicative adjustment of the four-quarter forecasts would convert them into perfect predictors of quarter-to-quarter change. We do not anticipate any such miraculous transformation of the verdict on the forecasting accuracy of the shippers' estimates. But we do feel that the verdict is open to question until an effort has been made to adjust for the systematic bias of the shippers' estimates by means of some regression of actual changes on the forecasted ones. Put in technical language, our impression is that it is still not clear that the failure to find the shippers' forecasts of direct predictive value is wholly independent of methodological considerations.

Structure of the forecasts. Accuracy, however, is only one aspect of the shippers' forecasts. Much of the most valuable findings relate to the structure of the forecasts; that is, to the apparent determinants of the shippers' expectations and to the relation of these determinants to past observables that might, in principle, be used to replace them. Quite remarkable results have been secured by Ferber by giving

systematic attention to a simple hypothesis on the structure of anticipations: namely, that they are wholly explainable by the recent behavior of the forecasted variable. It will not be possible to review the full scope of this analysis, but fortunately its essence is contained in a particularly simple form of the underlying hypothesis.

It will sharpen the discussion to use Ferber's algebraical formulation. Let E_t be the forecast of expected shipments in the forthcoming quarter, denoted by t . Let A_{t-1} be the actual shipments in the quarter just closed, and A_{t-5} the actual shipments in the corresponding quarter of the year before. Finally, denote by A_{t-4} the actual shipments a year earlier in the quarter corresponding to t . Ferber's basic hypothesis is that the expectations E_t yielded by the shippers' survey could be predicted from the relation

$$(1) E_t = a + b A_{t-4} + c A_{t-4} \left(\frac{A_{t-1} - A_{t-5}}{A_{t-5}} \right)$$

The special case $a=0$, $b=1$, $c=1$ is particularly interesting, because it can be written

$$(2) E_t = A_{t-4} \left(1 + \frac{A_{t-1} - A_{t-5}}{A_{t-5}} \right) = A_{t-4} \left(\frac{A_{t-1}}{A_{t-5}} \right),$$

which says that the change expected from quarter $t-4$ to the forthcoming quarter t is of the same relative size as that experienced over the four-quarter interval just completed. In other words, the recent trend of sales is expected to continue. Another interesting case is $a=0$, $b=1$, $c=0$, whence

$$(3) E_t = A_{t-4};$$

this says that no change in sales from the corresponding quarter a year ago is anticipated.

The results obtained from fitting relation (1) to shipments of all commodities other than farm products for 1927-41 are:

$$(4) E_t = .09 + .986 A_{t-4} + .43 A_{t-4} \left(\frac{A_{t-1} - A_{t-5}}{A_{t-5}} \right)$$

$$R^2 = .972$$

R^2 is the (multiple) coefficient of determination, and shows that the hypothesis represented by (1) fits the shippers' forecasts very

well. However, neither of the special cases (2) or (3) holds; and to interpret the case obtained, Ferber finds it convenient to change a from .09 to 0, b from .986 to 1, and c from .43 to .44 (to preserve the observed difference $b - c$). With these adjustments, an algebraically equivalent form of (4) is

$$E_t = A_{t-1} \left(\frac{A_{t-4}}{A_{t-5}} \right) - .56 (A_{t-1} - A_{t-5}) \left(\frac{A_{t-4}}{A_{t-5}} \right)$$

The first term on the right is the case (2) and represents a forecast that the recent trend of shipments will continue. The second term represents a downward adjustment of this forecast. If the coefficient of this term were $-.25$, it could be argued that the shippers tend to forecast merely a continuation of the level of shipments attained in the most recently completed quarter; but the fact that it is as low as $-.56$ suggests (to quote Ferber): "Anticipations, far from representing extrapolations of recent trend, appear to represent a sharp reversal of trend." In other words, if shipments have been rising, shippers in the aggregate forecast a decline, and conversely if shipments have been falling. The forecasts exhibit a "regression" from the level attained in quarter $t-1$ toward the level attained in quarter $t-4$.

There appears to be no reason to question this remarkable finding; but we would emphasize that its interpretation is far from clear. Ferber himself is careful to claim only that aggregate forecasts exhibit this regression phenomenon:

... it cannot be overemphasized that the entire analysis has been carried out in terms of aggregates and that we have no direct evidence as to the frequency or even the existence of the regression phenomenon among individual shippers' forecasts. Thus, this phenomenon as observed in this study might conceivably have resulted from extrapolation of the level of the corresponding quarter of the preceding year by a large group of the respondents and extrapolation of trend by another large group.

The suggestion in the second sentence can be directly investigated from Ferber's previous results. The "extrapolation of the level of the corresponding quarter of the previous year" is our foregoing case (3); the "extrapolation of trend" is our case (2). If, now, we suppose that a fraction W_1 of the firms employ the first method and a fraction W_2 the second, we have the hypothesis

$$(5) E_t = W_1 A_{t-4} + W_2 A_{t-4} \left(\frac{A_{t-1}}{A_{t-5}} \right)$$

But expanding the last term of (4) gives us

$$E_t = .09 + .56 A_{t-4} + .43 A_{t-4} \left(\frac{A_{t-1}}{A_{t-5}} \right)$$

whence $W_1 = .56$ and $W_2 = .43$, and we get the striking result that $W_1 + W_2 = .99$, or very nearly the figure 1.0 that hypothesis (5) would suggest.

We feel that this interpretation of Ferber's results may be of substantial importance. It suggests that in surveys of businessmen's expectations, there is typically a class of respondents who, either because their prospects are clouded or because they anticipate only very moderate changes, feel that their best forecast is "no change" from the corresponding quarter a year before. Other respondents (which in the shippers' surveys appear to comprise less than half the total) feel more confident of their prospects or anticipate substantial changes, and these make definite plus or minus forecasts. The existence of this "no change" group is enough to account for the bias of underestimation in businessmen's forecasts of change, and may contribute to an explanation of the lag with which expectations reflect turning points in business. Careful study of firms that report expectations of no change is therefore indicated, both to learn the circumstances under which such reports are made and to gain insight into the problem of adjusting expectations for their under-responsiveness to change.

Implications of the structural findings for forecasting. Ferber's work on the structure of shippers' expectations of course has forecasting implications, and these are rather discouraging. Certainly the work seems to support his and Hultgren's findings that the expectations have little net forecasting value. If expectations are determined by the past behavior of the variable to be forecasted, they constitute a redundant extra link in the chain of causation between the recent past and the future and should be supplanted by statistical lead-lag relations.

At the same time, there are reasons to be dissatisfied with such a negative conclusion. In comparison with other surveys, the railroad

shippers' forecasts have a long history of accepted usefulness, are taken seriously by both the railroads and the shippers, and have a remarkably full coverage of the most important shippers in each region and commodity group. Moreover, the traffic managers who respond to the surveys are in a position to know, and by the nature of their responsibilities must employ, the best thinking in their firms as to sales prospects in the near-term future. Finally, the surveys are subject to periodic review in regional and national meetings of the shippers with representatives of the railroads. The presumptions against a negative verdict on these surveys are perhaps stronger, therefore, than in the case of any other program we have considered.

We would point out, too, that the "proof" of Ferber's structural hypothesis should not be taken too literally. Apparently the recent past of shipments can be made to account for 97-98 per cent of the variation in aggregate expectations; but, as Ferber shows, the recent past will also explain 90 per cent of the variation of actual aggregate shipments. This fact implies that, if expectations were perfectly correct, the recent past would still account for 90 per cent of their variations. Since they are not perfectly correct, and since some firms can do little more than regard the recent past as the image of the future, the dependence of expectations on past shipments reaches 97-98 per cent; but the 2-3 per cent of variation that is not explained by the recent past leaves room for the possibility that, in special and sudden conjunctures, expectations may prove a uniquely useful guide to developments. Ferber finds some interesting evidence of this kind of uniqueness in the deviations of the expectations from the formula used to predict them, but he does not succeed in turning it to account in direct forecasting.

Thus, while the Committee is impressed with the insight and scholarly caution that have gone into the study of the railroad shippers' forecasts, we hope that this work will continue. On the one hand, we have suggested methodological reasons for believing that the work should be reviewed. On the other, we are struck with the number of ways, many of them suggested by Ferber, in which the data may be exploited further. *Particularly valuable would be studies at the level of the individual firm, both to learn if the "regressive tendency" found in the forecasts of aggregate shipments likewise prevails in the forecasts of individual shippers, and to gain insight into*

the process by which individual expectations are formed and revised. We venture to suggest that resources spent to this end would add not only to our knowledge of expectations but also to our understanding of the relation of aggregate series to the individual-firm experiences of which they are composed. Our support of this view, however, must be deferred to the section on the surveys of the IFO-Institute of Munich, West Germany.

FORTUNE SURVEYS

Fortune Magazine has pioneered in the use of survey techniques to measure and appraise businessmen's expectations. The following sections outline several phases of *Fortune's* current survey program that appear regularly in its monthly Business Roundup. It should be noted that *Fortune* has been steadily adding to its surveys in new areas, and that further consolidations and changes are planned. One instance is the possible consolidation of sales and inventory expectations collected in four of the *Fortune* surveys. Another is the collection of ex post as well as ex ante data for individual firms.

Business Expectations and Mood Survey

Purpose. The purpose of this survey is twofold: (1) to elicit executives' opinions on the outlook for their own businesses (i.e., their own enterprises, not their industry) and (2) to probe the executive "mood"; a "free response" question about favorable and unfavorable business factors (worries and strong points) provides a picture of the quality of prevailing business sentiment. This survey is taken twice annually, in the fall and in the spring. The usual months of publication are May and November; the questionnaires are generally answered six weeks to two months earlier.

Sample. The questionnaire shown below is standard. Whenever any current developments warrant, specific questions are added—in the fall of 1954, for example, as to the effect that Congressional elections would have on the executive's business.

This survey is taken by Time Inc. news bureaus and their widely located part-time correspondents ("stringers"). There are two reasons for using this technique. (1) The "mood" questions require personal interviews if response is to be encouraged, whereas it would not be possible to get small companies—e.g. in retailing—if the sur-

vey were conducted from *Fortune's* own office. (2) Stringers know the "representative" businesses of their areas. In part for this reason, a sort of randomized sample is preferable to one confined to large companies, even though the latter might increase the theoretical "coverage."

At last date, the following 21 cities were covered:

Atlanta	Los Angeles	Kansas City
Boston	San Francisco	St. Louis
Chicago	Seattle	Cleveland
Dallas	Birmingham	Pittsburgh
Denver	Bridgeport	Oklahoma City
Detroit	Louisville	Providence
Houston	Baltimore	Milwaukee

The May 1955 survey obtained 198 usable responses to Question 1, 196 to Question 2a, 174 to Question 2b, 183 to Question 3a, 160 to Question 3b of the following questionnaire:

For *Fortune* Business Roundup semiannual survey of business mood this spring would like to know what businessmen in your area are thinking about—three each from banking, retailing, hard goods industry, some other industry:

1. How is your business now? (Very good, good, fair, poor)
2. How do you expect your business to be in six months? (Up, down, the same, as compared with present) In year? (Up, down, the same, also compared with present)
3. What are your expectations for business in general in the next six months? In year? (Up, down, the same)
4. What do you consider the chief uncertainties and worries in business situation now?
5. What do you consider most favorable aspects in current business situation?
6. Important question for all except bankers: How large are your inventories now in relation to sales—High, Low, Medium? During past three months have your inventories been going up, down, or holding steady? To what do you attribute this movement—seasonal factors, price changes, sales, etc.? In next three months do you expect your inventories to go up, down, or hold steady? To what do you attribute this movement?

Note: In general appreciate discussion and quotes, but for questions 1, 2, and 6 prefer specific answers, as indicated. Appreciate also answers in order of questions above. Our direct mail inventory survey also going out this month. If firms you contact have not received our questionnaire please forward name, address and person to contact for future direct mail inventory survey if companies willing to participate.

Responses. The responses come in the form of wires from stringers (or completed questionnaires which in a few instances they have sent out). A short summary of the correspondent's own impressions prefaces the actual answers to each question by each respondent—both a specific answer and as many general comments as the stringer thinks it worthwhile to file. (For qualitative purposes, answers to the retailers survey—see below—are used to amplify the general business expectations survey; and this is being done increasingly for manufacturers through the insertion of a sales expectation question on the inventory survey, which likewise is summarized below.)

In the present form, the critical questions (2 and 3) provide a diffusion index of expectations. They ask whether business will be up, down, or the same in six months, and in a year. In the absence of a marked difference between 6- and 12-months diffusions, it is not possible to tell whether, if the preponderance of replies is "up" for both, this means a gradual uptrend for twelve months or a rise in six months followed by steady. (The reverse holds true for "down.") Particularly for this reason future surveys will ask for percentage answers, though it must be expected that only some respondents will answer in this form.

Tabulations of questions 1, 2, and 3 are made for the totals and for the following subgroups: bankers, retailers, soft goods manufacturers, and hard goods manufacturers. The tabulations of expectations as to business in general are not published or referred to in print, lest they be confused with expectations regarding specific businesses; but they also suggest "mood" and are used as background for analysis.

Questions 4 and 5 (favorable and unfavorable aspects) are tabulated for number of mentions of each specific factor, and relevant quotes from businessmen are assembled. Question 6 refers to inventories. The responses to this are also tabulated, but they are used to

fill out the quarterly inventory survey which twice a year falls on the same months as the general expectations survey.

History and results. This survey was first taken for the issue of October 1952, and has been taken every half-year since.

Table 7 provides a comparison of the predictions of the survey (own businesses only) with changes in GNP and FRB indexes (quarterly averages) for the period ahead covered by the forecasts:

TABLE 7
SURVEY PREDICTIONS COMPARED WITH CHANGES IN GROSS NATIONAL PRODUCT AND FEDERAL RESERVE PRODUCTION INDEXES

Date of survey publication	Survey prediction (percentage of total)			Percentage change calculated for quarters:			
				Including month survey was published		Previous to month survey was published	
	Up	Same	Down	GNP	FRB indexes	GNP	FRB indexes
Change in next 6 months							
1952—October.....	55	34	11	+ 3.3	+ 3.3	¹ + 4.9	¹ + 9.8
1953—May.....	15	65	20	- 2.5	- 5.4	+ 1.4	+ 0.7
November.....	14	51	35	- 0.6	- 3.9	- 2.3	- 8.1
1954—May.....	46	36	18	+ 2.7	+ 3.2	+ 0.1	- 0.8
October.....	46	48	6	+ 4.8	+ 7.0	+ 4.6	+ 9.2
1955—May.....	43	48	9	n.a.	n.a.	+ 4.4	+ 5.3
November.....	43	48	9	n.a.	n.a.	n.a.	n.a.
Change in next 12 months							
1952—October.....	48	30	22	+ 0.6	- 2.3	¹ + 6.3	¹ +10.6
1953—May.....	12	52	36	- 3.2	- 9.1	- 1.0	- 7.4
November.....	13	40	47	+ 2.0	- 0.8	- 2.2	- 9.1
1954—May.....	52	35	13	+ 7.6	+10.5	+ 4.7	+ 8.3
October.....	52	42	6	n.a.	n.a.	+ 9.3	+13.8
1955—May.....	46	43	11	n.a.	n.a.	n.a.	n.a.
November.....	47	38	15	n.a.	n.a.	n.a.	n.a.

n.a. Not available.

¹ Steel strike occurred during base period.

Retail Survey

Purpose. This survey is designed to provide the basis for a forecast of consumer spending. It covers retailers in the most volatile areas of spending: i.e., for cars, home goods, and apparel (also, gen-

eral merchandise firms, which retail apparel and home goods as well as other merchandise). Since changes in spending for foods and for services (Department of Commerce aggregate) are rarely ever drastic, the information from the survey can be combined with trend projections of food and services in order to yield projections of aggregate consumer spending.

So far, this survey has been taken in late summer 1954, late in the winter of 1954-55, and again in late summer of 1955. Present plans envisage that it will be continued on a semiannual basis—once in advance of spring sales and once for holiday business.

Sample. The following questionnaire was used for March, 1955, and produced satisfactory results.

(On questions asking for comparisons would appreciate percentage answers as well as impressions.)

1. How have your sales been since Christmas as compared to last year?
2. Do you expect Easter buying to be better or worse than last year's? By what per cent?
3. How do you expect your sales to be from April through June this year versus last year percentage-wise?
4. Which specific products in your line are selling best? Poorest? What price lines are moving best? Have customers been moving up and down price scale lately? Do you expect trends to continue?
5. What is the trend of prices you are paying for your merchandise? What is the trend of prices in your sales of merchandise (are you charging more or less for identical items than you did in the fall of last year or the last time you sold the merchandise)? Do you expect a change? If so, why, and in what direction?
6. Which group customers are buying the best—white collar, factory, farmers? What income bracket? How is this influencing your business?
7. How are your inventories in relation to sales? High, low, normal? Do you expect inventories to change? If so, is it due to your outlook on sales?
8. Are you buying earlier or later this year compared to last (specific dates would be helpful)? Are you placing large orders initially or relying on heavy re-orders later? Why? Price changes, present stocks, or what?

This survey is taken by the various *Time* bureaus and "stringers" (newspaper correspondents), to whom instructions are wired. It is taken in this way, rather than by mail, (a) in order to obtain quotes

from interviews and (b) in order to get a broad sampling of stores around the middle-size range (rather than just the largest stores) to provide the best trend picture. Some stringers reproduce the questionnaires and mail them out locally, though *Fortune* does not encourage this practice.

At the last date, March 1955, 21 cities were covered, as follows:

Seattle	Denver	Pittsburgh
San Francisco	Salt Lake City	Dallas
Los Angeles	Washington	Santa Fe
Indianapolis	Boston	Omaha
St. Louis	Cleveland	Atlanta
Richmond	Chicago	Charleston
New Orleans	Detroit	Memphis

Replies to question 1 were received from 165 merchants and varying smaller numbers to other questions.

Responses. The responses come in the form of wires (in some instances, completed questionnaires) from stringers. Some stringers furnish a short summary of their over-all qualitative impressions, and all supply a list of important quotes from merchants. (Retailers' answers to the general business expectations survey are also used to amplify the retailer survey.)

(1) Questions 1, 2, and 3 are tabulated to yield average per cent changes by kinds of stores, taking due note of (and weighting) regional variations.

(2) Portions of questions 4, 5 and 7 which can be tabulated as "up" or "down" or "high-low-normal" are tabulated as per cents of totals. All other information in the survey is at least added up, if tabulable, and if not, comments of the respondents are written down and then summed up qualitatively.

(3) Question 1 is a control question which ascertains whether the sample has had a recent sales experience roughly in accord with the general trend of sales in the economy for their lines.

(4) Responses to forecast questions, expressed as average per cent gains over a year ago, are tacked on to the appropriate categories of the personal consumption series of the Department of Commerce. (Furniture and housefurnishings are combined with semidurable

housefurnishings. Department stores sales, which do not fit any Commerce categories per se, are used to check the responses of home-furnishings and apparel retailers.) About \$50 billion of consumption expenditures is directly covered by the survey. About \$30 billion of spending on "other goods"—gas and oil and tobacco, other durables, and other nondurables—which is fairly stable, is not covered but can be projected from recent trends. (Remaining consumer outlays are accounted for by food, \$75 billion, and services, \$85 billion.)

History and results. For the survey taken in the late summer of 1954, the comparisons of retailers' forecasts with actual sales were as follows (projections were based on the second quarter of 1954 and were made for the fourth quarter of 1954):

Clothing forecast: a 4 per cent rise from \$19.8 billion to \$20.5 billion. Outcome: a rise of 1 per cent to \$20 billion.

Home goods forecast: a rise of almost 5.5 per cent from \$15.2 billion to \$16.0 billion. Outcome: a rise of 1 per cent to \$15.3 billion.

Autos: No precise comparison is possible because of the seasonal-adjustment problems in handling the data. However, the survey unquestionably indicated a fall in auto sales from the second quarter level. Actually, the Commerce figure rose 6 per cent from \$12.6 to \$13.4 billion. Auto dealers were no wiser than anyone else who was surprised at the strength of November-December auto sales in 1954.

Also, department store and apparel men were asked to predict their December sales. They forecast rises of 2.7 and 2.3 per cent, respectively, over the same month a year ago. Outcome: department stores up 3.2, apparel up 5 per cent (Commerce retail sales series). Home goods men forecast a 4 per cent increase; the outcome was 3.8 per cent.

For the survey taken in early 1955, the results were as follows (projections were based on estimates of fourth quarter 1954 Commerce consumption data and were made for the second quarter of 1955):

Clothing forecast: a rise of 6.6 per cent, from \$20.0 to \$21.3 billion. The outcome was a gain to \$20.5 billion.

Home goods forecast: a rise of 4.6 per cent from \$15.3 billion to \$16.0 billion. Outcome: second-quarter sales reached \$16.8 billion.

Autos forecast: a rise of 6.7 per cent, from \$13.4 to \$14.3 billion. Outcome: the second-quarter turned out to be \$16.6 billion. It is worthwhile noting that even though their forecast again apparently undershot the mark, the auto dealers *were* forecasting a *high* rate of spring car sales.

Farm Survey

Purpose. This annual survey is designed to forecast the trend of farm spending, principally for production items, but also for consumer goods. It is made once a year. It yields trends of buying for specific products, trend of farm income and savings, and farmer reaction to the specific topical "farm problem" of the year (e.g., changes in price support laws, production quotas, etc.).

This survey has so far been taken four times—published in the issues of April 1952, December 1952, June 1953, June 1954, and September 1955.

Sample. The following questionnaire was used in June 1954. The survey is taken by *Time* bureaus and stringers, to whom instructions are wired.

Farm Survey Questionnaire—June, 1954

Fortune's June Business Roundup will survey farmers' present and prospective buying. Want to get regional picture through: 1) equipment, truck, mail order and similar companies serving farm markets, e.g. (NOTE TO WIRE ROOM SEE SPECIAL ADD "A" FOR CITY AND COMPANIES INVOLVED). 2) Federal Reserve or country bankers, major wholesalers, farm suppliers or other sources your area who can provide "grass roots" approach in (NOTE TO WIRE ROOM SEE SPECIAL ADD "B" FOR AREAS INVOLVED).

We want comparison farmers' buying last year and two, three preceding years. How are sales running currently? Up or down from year ago? Any recent changes caused by movements in prices in last few months? What's prospect for buying for rest of year? Aside from farm income trends, is farmer saving less or going into debt more or what? We'd naturally like to know trend in specific products, e.g., cars, trucks, tractors, electrical equipment, consumer goods, oil or even cotton-pickers or silo unloaders. Have new products taken up any slack brought on by saturation of demand for old standbys?

Generally, we'd like to know whether there's been noticeable change in farmers' production or buying plans as a result of the business adjustment or, in the other direction, the news from Indo-China? Second, what are farmers

thinking now about relative merits of price supports (flexible and rigid), production quotas, Secretary Benson? Are they planning production or buying readjustments as result? Please feel free to farm portions of query as you think advisable.

Special Add "A"

Chicago: Sears, Montgomery Ward, Spiegel, International Harvester, Oliver, Deere and Company, Caterpillar Tractor

Detroit: auto companies, Dearborn Motors (Birmingham), Harry Ferguson & Co. Continental Motors

Milwaukee: Allis Chalmers, J. I. Case (Racine), Massey-Harris (Racine)

Omaha: American Implement Co.

San Francisco: Earthmaster Farm Equipment Corp. (Burbank) City, Bendix-Pacific Agricultural Hydrolics (North Hollywood)

Dallas and Atlanta: any in your area like International Harvester, GM., Sears.

Special Add "B"

Chicago—Ohio, Indiana, Illinois, Iowa

Detroit—

Milwaukee—Michigan, Wisconsin, Minnesota

Omaha—Dakotas, Nebraska, Kansas, Oklahoma

San Francisco—West Coast

Dallas—Southwest

Atlanta—Southeast

Responses. Responses are in the form of reports by stringers, quotes from interviewees, data from interviewees or other local sources. This survey is primarily qualitative in nature. Even where data are acquired, it is usually spotty and piecemeal and not suitable for aggregation. Consequently, nothing resembling a real "tabulation" is made. Instead, an extensive memo summarizing the gist of the wires is prepared.

This survey has been primarily used to guide a farm write-up (and provide specific illustrations or quotes). The qualitative data from the survey were roughly translated into statistical form by tacking the changes in farm buying indicated by the survey onto available Department of Agriculture historical data on farm outlays. Sometimes a chart is prepared from the resulting series, sometimes the material is just used in text. In short, there is no regular body of "expectation statistics" to compare with actual data.

Homebuilding Survey

Purpose. This is an annual spring survey to arrive at a projection of new housing starts and otherwise obtain a "grass-roots" appraisal of the homebuilding market problems and trends. (A recheck survey of builders plans as reported in the spring was run in the fall of 1953 and the summer of this year. This survey may be placed on a semiannual basis.) The survey is taken by *Time* Bureaus and stringers, to whom instructions are wired. The questionnaires are filled out by the builders and returned to stringers who then send their batch of questionnaires to *Fortune* with covering memos describing more qualitative aspects and summarizing the results of the questionnaires for their cities. A specimen questionnaire follows.

Questionnaire for Homebuilding Survey—1955

1. Do you plan to build more or less units this year than last? _____
 Number in 1954 _____ Number in 1955 _____
 Approximate percentage increase? _____ or decrease? _____
2. If possible, please break out the figures by half-years:
 First half of 1954 _____ First half of 1955 _____
 Second half of 1954 _____ Second half of 1955 _____
3. As you now see it, what do you expect to do in 1956?
 Build _____ % more units than in 1955; or _____ % fewer.
4. Will your 1955 building costs be up or down from 1954, and by how much?
 _____ Why? _____
5. Will changes in building costs bring your prices up _____ % or down _____ %
 Are you moving into either higher-priced units _____ or lower-priced _____?
 Figures to explain this? _____
6. Is it taking any longer now than a year ago to dispose of units built?
 _____ months in 1954 vs. _____ months now.
 Which price ranges are most difficult to sell? _____
7. Are average interest rates on mortgages in your area up or down? _____
 From _____ % a year ago to _____ % now.
8. Is the supply of mortgage funds tighter _____ or easier _____
 as compared with a year ago? How is this affecting your operations?
9. General comments? (Bring up subjects like: trend to houses with more bedrooms; whether more or fewer purchasers than a few years ago are already home owners rather than apartment dwellers; "Trade-in-market," etc.)

Sample. Questionnaires are sent to stringers in 35 or more cities.⁸⁶ The cities are chosen to represent areas of all economic conditions and geographic locations. The stringers are instructed to obtain answers from at least three builders in each of three size groupings of roughly comparable weight: less than 10 homes a year, 10 to 100 homes a year, and over 100 homes. They are specifically instructed to avoid homebuilding associations and to go right to the individual builder. Three to four hundred answers are usually obtained.

Responses. The actual questionnaires are used in quantitative projections of homebuilding for the year. The following figures are calculated for each size group within each city: (1) the percentage increase in total starts planned, (2) the average percentage increase, and (3) both of these measures for the group, with extreme cases eliminated. This is done to study the variance (and so, the degree of reliability of the returns) as a guide to the two calculations under (3). Then an average of the two is computed. After such values for each of the three size groups have been calculated, an average value is similarly calculated for the city as a whole. These four values are then used with those for the other cities in that area.⁸⁷ Averages are calculated (a) by size groups for the area and (b) for the cities taken in total. Final per cent changes for the areas are then obtained from both approaches. These "typical values" for the areas are used to derive an average increase for the nation as a whole, by use of weights for the areas, calculated from the BLS studies on the geographical distribution of nonfarm housing starts. The final percentage increase which results is then applied to the

⁸⁶ Cities surveyed for homebuilding questionnaire in 1955 were:

Boston	Birmingham	St. Louis	Kansas City
Hartford	Baltimore	Cleveland	Dallas
Albany	Memphis	Pittsburgh	Salt Lake City
Bridgeport	Tampa	Milwaukee	Denver
Providence	Louisville	Cincinnati	San Francisco
Newark	New Orleans	Wichita	Los Angeles
Buffalo	Chicago	Oklahoma City	Portland
Philadelphia	Detroit	Omaha	Seattle
Atlanta	Indianapolis	Des Moines	San Diego
Richmond			

⁸⁷ The areas are as follows: Northeast (Commerce's classification of New England and Mid-Atlantic); Southeast (South Atlantic and East-South-Central); Great Lakes (East-North-Central); Farm States (West-North-Central, West-South-Central, and Mountain); Pacific Coast (same as Commerce).

number of housing starts of the 1- to 4-unit size in the previous year. To this projection is added the number of starts independently anticipated for multi-family starts and for public starts. This, then, gives the total figures projected for the year as a whole.

Answers for the next following year are more limited but to the extent possible, the same procedure is used. For half years (where the number of responses is also limited) the percentage changes over the half years of the preceding calendar year, furnish semi-annual projections which are then "locked in"—i.e., adjusted to—the total year's projection.

Results. In May 1951 when the survey was initiated, housing starts were predicted at 1,125,000 compared to the 1951 actual total of 1,091,000. This compared also with the 1,396,000 in 1950 and with well above the 850,000 figure widely discussed for 1951. In April 1952 the survey indicated 1,150,000 starts for the year and the actual 1952 number was 1,127,000. In April 1953 the survey indicated 1,200,000 starts with little change from the seasonally adjusted rate reported in the fourth quarter of 1952. However, the survey was taken before the 1953 tight money policy had really been felt in the mortgage market. For the year as a whole only 1,104,000 units were started with the big cutbacks in the seasonally adjusted rates taking place in the third quarter (when starts normally are at a seasonal peak). In October 1953 *Fortune* published the results of a partial recheck of builders who reported a cutback from spring plans which they attributed to tight money. As money policy was eased, the rate started up again, and in the April 1954 survey the builders expected to hit 1,250,000 for the year. The actual 1954 total was 1,220,200, but by the end of the year the rate was above 1,400,000. In the latest (April, 1955) survey the builders foresaw 1,450,000 starts for the year, with no particular trend during the year and little change anticipated for 1956. However, there was some concern expressed over possible future tightness of the mortgage market. In a late July recheck survey (published in September *Fortune*) builders reported initial cutbacks from these 1956 plans owing largely to a tightening of mortgage money.

Inventory Survey

Purpose. The purpose of this survey is to discover how much inventory business plans to accumulate or liquidate over the coming year. An attempt is also made to get at the reasons for inventory policy. For example, *Fortune* asks companies how they regard the present level of their inventories (relative to sales). This survey is taken quarterly and the questionnaires are answered six weeks to two months prior to the *Fortune* issue in which the survey results are published. The usual months of publication are February, May, August, and November.

Sample. Questionnaires are sent directly to the individual firms and the answers are returned directly to *Fortune*, though original contact is often established with some one person in the company via a Time Inc. stringer in that area. If some key companies or industries are not represented in the responses in sufficient detail, they are contacted by telephone or wire for answers to the questionnaires. Survey coverage has been steadily expanded over the two-year life of the program. For the August 1955 issue, questionnaires were sent to 240 manufacturing companies and 20 retailers, and answers were received from 141 (55 per cent) via direct mail. The questionnaire, with supplementary questions, was wired to stringers in 10 cities, and their replies brought the total up to 200, of which 107 supplied quantitative projections. The breakdown of the 200 firms by industry groups is as follows:

	Number of replies
<i>Durables goods industries</i>	103
Primary metals	18
Fabricated metals	17
Machinery (excl. elec.)	22
Electrical machinery	13
Transportation equip.	6
Stone, clay and glass	11
Instruments, etc.	8
Furniture	4
Lumber	4
<i>Nondurables goods industries</i>	56

	Number of replies
Rubber	8
Chemicals	7
Textiles	12
Paper	9
Leather	8
Apparel	8
Miscellaneous	4
Retailers	41

The original list was begun as a subgroup of the Federal Trade Commission list of 1,000 largest manufacturing corporations. This sample has been expanded by use of Thomas' Register and the names of co-operating firms received from stringers in the semiannual business mood survey. In attempting to improve the samples, the emphasis leans first on improving particular industry groups and, secondly, on broadening geographic coverage.

For qualitative answers (having to do with sales anticipations and the present state of inventory), the sample is enlarged by use of key questions on the retailer expectations and general business expectations surveys. The survey is thereby enlarged by about 100 manufacturers and 100 retailers. The larger sample is particularly important for retail trade firms, of which there are only 20 in the direct mail survey. So far, it has not been possible to obtain from these "stringer" surveys the detailed inventory figures needed for quantitative projections, particularly in the case of retailers, who evidently do little projecting. The sales expectations of business from the "mood" survey have been used loosely, in the past, as qualitative background for discussion of inventory policy. The innovation of requesting specific sales expectations from manufacturers has been introduced into the inventory survey for publication in the August 1955 issue of *Fortune*.

There follows a copy of our direct mail survey and of pertinent questions from the retailer and general business surveys.

Inventory Survey Questionnaire

Name of company

1. How large are your present inventories (total) in relation to current sales? High; medium; low.
2. In the past three months have your inventories been going up, down, or holding steady? (per cent)
 - 2a. Please give reasons for above answers—e.g., change in sales or price, anticipated price changes, material shortages, seasonal factors, etc.
3. In the next three months do you expect your inventories to be up, down, or holding steady? (per cent)
 - 3a. Please give reasons for above answers—e.g., change in sales or price, anticipated price changes, possible material shortages, seasonal factors, etc.
4. Six months from now do you expect your sales to be up, down, or the same? (per cent)
 - 4a. A year from now do you expect your sales to be up, down, or the same? (per cent)
5. Quarterly (or semiannual) dollar inventory figures which will be used for weighting sample and held confidential, for 1954, 1955 (projected), and 1956 (projected).

The general expectations and retailer expectations surveys include questions 1 through 3a of the above inventory questionnaire.

Responses. One question in the above questionnaire is a request for inventory figures for the previous two years, by quarters, as well as for the period of projection (four quarters ahead of the current quarter). These actual and planned figures are recorded by major industrial groupings, corresponding to those for which the Department of Commerce reports inventory figures. These industry totals are then added to arrive at two weighted totals, for nondurable goods manufacturing and for durable goods manufacturing. The weights are determined primarily by the relative importance of the industry groups in total inventories for the latest quarter, and, secondarily, by the quality of the sample in the industry. These seasonally unadjusted data are then corrected by using the implied seasonal index derived from the Commerce figures. The resulting inventory figures for the preceding two years are then checked against the actuals (that is, in terms of their movements) as reported by Commerce. This is done to see if the two series are roughly comparable,

and so that the projected movements may be regarded as unbiased; this check has proved largely successful. The changes in inventory over the projection period are then used to project the movements in the two total industry groups.

In the total inventory projections used in the text of the various Business Roundups, allowance has been made for retail and wholesale inventories on the basis of (1) qualitative information obtained in the survey, (2) the detailed inventory sales ratios in Commerce data, and (3) Roundup's own projection of sales. The discussion below, of the actual projections from the survey, is restricted to a report on manufacturing alone.

Results. The inventory survey was begun in May 1953 as a set of questions supplemental to the business mood survey. At this time and in the following inventory survey three months later, the questions were restricted to qualitative information. The survey of November 1953 introduced the quantitative question about actual and projected levels of inventories. And the *Fortune* Roundup text began to include the projections made for the year ahead by both durables and nondurables manufacturers. Hard goods producers indicated plans to cut inventories by 7 per cent through the third quarter of 1954 while soft goods producers planned to hold their stocks steady.

By February 1954 *Fortune* had begun pinpointing the inventory plans by half-years. "More than half the cutbacks in both durables and nondurables industries should be completed by midyear." Hard-goods manufacturers still intended to reduce their stocks by 7 per cent during 1954, but the soft goods makers now were planning cuts of 4 per cent during the year.

In the next three months, inventory cutting went a little faster than planned, but the new survey showed that the planned cuts would still be smaller in the second half than in the first: In May 1953, *Fortune's* Roundup remarked "There will be a tapering off in the rate of runoff after midyear and stock cutting will be of very minor proportions by the year-end." By then, durable goods producers had sharpened their cutbacks to a 10 per cent reduction for the year as a whole and soft goods producers were planning a 5 per cent cut.

All this was confirmed by the August 1954 survey, which also indicated that business intended to slow their liquidation steadily and then resume some inventory rebuilding by the second quarter of 1955.

In November 1954, manufacturers maintained the same plans through mid-1955 as they had three months earlier, i.e., for very slight reductions in the winter, slight increases in the spring of 1955.

By February 1955 the survey was reporting their plans for all of 1955. Soft goods producers then planned to increase their inventories by \$600 million (3 per cent) in the first half of the year and then hold them steady in the second half. Hard goods producers foresaw no change during the year.

In the May 1955 survey, both groups had revised their plans upward. Soft goods companies expected to increase their inventories by \$600 million in the first half and an additional \$200 million in the second half. Hard goods producers planned to increase their inventories by \$500 million, or more than 2 per cent, with the increases spread throughout the year.

In August 1955, manufacturers were planning a steady buildup from mid-1955 to mid-1956 at a rate of \$1.2 billion, about evenly divided between durables and nondurables manufacturers.

Past projections have stood up pretty well, in comparison with the movements of Commerce's seasonally adjusted figures on actual manufacturers' inventory, shown in Table 8.

TABLE 8
MANUFACTURERS' INVENTORIES

(In millions of dollars)

End of month	Durable goods manufacturers		Nondurable goods manufacturers		Inventory change-all manufacturers
	Volume	Change in inventories from preceding date	Volume	Change in inventories from preceding date	
1953—June.....	26,147	19,591
September.....	26,547	+ 400	19,719	+128	+ 528
December.....	26,338	- 109	19,604	-115	- 224
1954—March.....	25,577	-761	19,418	-186	- 947
June.....	24,617	-960	19,568	+150	- 810
September.....	23,709	-908	19,199	-369	-1,277
December.....	24,023	+314	19,242	+ 43	+ 357
1955—March.....	24,112	+ 89	19,220	- 22	+ 67
June.....	24,457	+345	19,322	+102	+ 437
September.....	25,127	+670	19,519	+197	+ 867

For example, inventory cutting was sharper in the first than the second half of 1954, and was largely confined to durable goods companies. Moreover, accumulation resumed early in 1955. The survey information is still better used for forming such general judgments of trends than for reliance on specific quarterly forecasts.

Capital Goods Survey

Purpose. This survey is taken to ascertain the trend of capital goods production over the coming four quarters. There is also some attempt to find out some of the reasons why the various producers expect the trends they do. The survey has been taken approximately semiannually since October 1951. It was based on machinery producers alone until the survey published in June 1955, which was expanded to include capital goods producers of all kinds, including industrial builders. Questionnaires are mailed directly to cooperating firms and returned by them; stringers are used to increase the number of cooperating companies.

Sample. The sample was derived originally from the Federal Trade Commission reports on 1,000 largest manufacturing corporations. From time to time companies have been added to the various subgroups of machinery to fill out the sample in these product areas. All in all, *Fortune* now sends out questionnaires to 240 companies and received answers from 102 companies for its June 1955 survey. The distribution of responding firms among the various subindustries, and the percentage of industry sales covered, are as follows:

Industry group	Number of questionnaires answered	Industry sales covered (In per cent)
General machinery	24	35
Office equipment	9	40
Electrical machinery	12	25
Metal working & machine tools...	13	20
Fabricated metals	7	20
Construction, mining machinery..	8	20
Engines, turbines	4	—
Special industry machinery.....	11	10
Trucks	11	10
Industrial construction	3	—

The following is a copy of the questionnaire used in the capital goods survey:

Questionnaire on Production of Capital Goods

This questionnaire is concerned with orders and production of capital goods for private companies. It does not cover either consumer goods or government contracts.

- (1) What is the current trend of your business with private companies? (Please express in percentage change from either December 1954 to April 1955, or from November 1954 to March 1955)

Percentage change in:

Sales%
 New Orders%
 Unfilled Orders%

- (2) Taking your production in the 1st quarter as 100—what do you expect will be the quarterly trend in production during the coming year?

Quarterly rate for:

2nd Quarter 1955.....
 3rd Quarter 1955.....
 4th Quarter 1955.....
 1st Quarter 1956.....
 2nd Quarter 1956.....

- (3) Is this estimate based on your current orders and backlogs or is it what you expect will be the trend in new orders in 1955? Check one:

Business in hand
 Expected business.....

- (4) What do you expect your exports will be this year compared to 1954?

Up%
 The Same%
 Down%

Please indicate for statistical purposes of weighting (figures will be held confidential):

Major Industries Supplied
 Main Products
 Annual Sales
 Name of Company

Responses. Questionnaires are sent directly to the producers for direct mail response, and key companies from whom replies are not

received are contacted by telephone or wire as tabulation of the mail responses proceeds. The answers to the questionnaires are tabulated by industry groups. The indexes recorded in answer to question 3 are then averaged by these subindustry groups allowing the larger companies to dominate but not to obliterate the movement in the other companies (i.e., an average of the weighted and unweighted means is used). These average indexes for subgroups are then used to derive weighted indexes of electrical and of nonelectrical machinery production, which in turn are similarly weighted to obtain total machinery production. In the newest survey (June 1955), the indexes of production are expanded to cover all producers' durable equipment (i.e., trucks, fabricated metal products, etc.).

Results. *Fortune's* survey of machinery producers began in October 1951. At first the results were quoted in general terms, becoming more specific as the size and quality of the sample, and the technique of analysis, improved. In October 1951 the "Fortune survey of business plans shows that smaller companies around the country are beginning to pull in their horns . . . Right now, of course, most makers of capital goods are concerned with materials rather than orders but there are some indications that the government imposed cutbacks are in fact bringing supply down into line with demand."

In the survey of May 1952, "For the year as a whole, indications were that the decline in production of machinery for private orders may be no more than 10 per cent between now and mid-1953." In September 1952, a special survey to assess the impact of the steel strike on capital goods production and expenditures was attempted. This survey indicated that output and expenditures would drop off in the third and fourth quarters as a result of the steel strike and then would pick up sharply to a peak in the second quarter of 1953 before easing off once more during the last half of 1953.

In March 1953, "The semiannual survey of machinery companies indicates high and steady production during 1953." This and the bulge in new orders "may be the first evidence of some upward revision in corporate plans for capital outlays. Last autumn a Commerce Department Survey (as well as a *Fortune* Survey) had disclosed that corporate capital expenditures planned for 1953 were somewhat smaller than those for 1952."

By September 1953, "a 6 per cent decline in machinery production

by mid-1954 seems probable, according to reports from firms participating in *Fortune's* semiannual Survey. Now it appears that there may be a minor decline in output (2 per cent) by the end of this year, and a more pronounced slowdown in the first half of 1954."

In March of 1954, "producers expect a 6 per cent decline from the fourth quarter of 1953 to the fourth quarter of 1954. Moreover, current projections suggest that the decline is already slowing down and that output may level out by the year-end."

By July 1954 the outlook for a downward trend had been reversed. "On balance the machine makers forecast a partly seasonal 2 per cent rise in production from the third to the fourth quarter of 1954, and a 1 per cent rise in each of the first two quarters of 1955."

Due to the series of *Fortune* articles on capital goods in the last half of 1954, Roundup took no survey of machinery makers. However, included in the survey of long-term capital spending plans was a question about 1955 as compared to 1954. On this basis in December 1954, Roundup estimated that "by the end of 1955 business outlays for capital goods will be nearly \$1 billion above the current annual rate of \$34.5 billion."

In June 1955, the expanded survey indicated quarterly increases exceeding 2 per cent in the second half, and nearly 1 per cent in the first half of 1956, for output of producers' durable equipment.

Below are actual figures for producers' durable equipment outlays for the period of the machinery survey, as compared with producers' projections. (The FRB index of machinery output includes both defense and consumer goods work by machinery companies whereas *Fortune's* questionnaire is specifically limited to civilian goods output of machinery firms. Hence it is not the best benchmark for comparison.)

May 1952 survey:

Projection: "down no more than 10 per cent by mid-'53"

Actual: Not comparable, owing to following steel strike.

September 1952 survey (annual rate, in \$ billion):

	1952			1953			
	2nd Q.	3rd Q.	4th Q.	1st Q.	2nd Q.	3rd Q.	4th Q.
Projection:	25.1	23.5	22.7	24.6	25.9	24.7	23.5
Actual PDE:	25.1	22.5	23.3	24.5	25.0	25.1	24.2

March 1953 survey:

Projection: "high and steady production during 1953."

	1st Q.	2nd Q.	3rd Q.	4th Q.
Actual PDE (annual rate, in \$ billion):	24.5	25.0	25.1	24.2

September 1953 survey:

Projection: "2 per cent decline by end of year; 4 per cent more by mid-'54."

Actual PDE: 3 per cent decline by the end of the year; 7 per cent more by mid-'54.

March 1954 survey:

Projection: "6 per cent decline from 4th quarter '53 to 4th quarter '54,"

Actual PDE: 10 per cent decline.

June 1954 survey:

Projection: 3 per cent rise from 3rd quarter '54 to 2nd quarter '55.

Actual PDE: 3 per cent rise.

June 1955 survey (annual rate, in \$ billion):

	1955				1956	
	1st Q.	2nd Q.	3rd Q.	4th Q.	1st Q.	2nd Q.
Projection:	21.0	22.3	22.8	23.3	23.5	23.7
Actual PDE:	21.0	23.0	24.2			

MANUFACTURERS' SALES EXPECTATIONS: DEPARTMENT OF COMMERCE

Since 1949 an annual survey of sales anticipations has been made in connection with the Department of Commerce-Securities and Exchange Commission survey of plant and equipment anticipations.⁸⁸ This sales anticipations survey has been viewed as distinctly secondary to the plant and equipment survey. It was originally introduced to throw light on the basis on which plant and equipment programs were scheduled. Our interest in this report places the emphasis the opposite way, primarily on sales anticipations.

The sales anticipation figures have generally pointed in the right direction. For instance, declines were anticipated both in 1949 and in 1954, although the anticipated declines were substantially less than occurred. In years of increasing activity, rising sales have been anticipated, but again less than actually occurred. Thus the antici-

⁸⁸ Sales expectations data were first collected for 1948 in the survey conducted early in that year. The April 1948 *Survey of Current Business* gave a qualitative statement for manufacturing. The first formal presentation was in the April 1949 *Survey of Current Business*.

patory data pointed in the right direction but fell short of actual changes in sales.

There has been a distinct tendency for actual plant and equipment expenditures to deviate from anticipated levels in the same direction that actual sales deviate from anticipated sales. Thus, in 1954, "iron and steel, nonferrous metals, electrical and other machinery, chemicals, petroleum and rubber had either larger sales declines or smaller sales increases than expected, and also invested less than anticipated. Similarly the industries with higher than projected sales, such as stone and paper, invested more than planned."³⁹ Thus there appears to have been a close relation between sales anticipations and under- or over-estimate in plant and equipment anticipations.

Nevertheless, the Department of Commerce has, over the years, emphasized that sales anticipations rest on a less secure foundation than plant and equipment anticipations. Plant and equipment expenditures are visualized as being principally planned, while it is a known fact that the future course of sales is to a large extent outside the control of individual companies. It is believed that sales anticipations do provide some indication of management's evaluation of current economic conditions, but fear is expressed that, in some cases, the sales forecasts may actually reflect forecasts which were given the company by some outside consultant or agency, and thus that they may fail to reflect the company's own view of the sales forecast.

Because of lack of primary interest in the survey of sales anticipations, no response follow-up has been made beyond the initial, voluntary reporting of the cooperating companies. A substantial number of companies reporting on plant and equipment anticipations do not report sales anticipations. Hence, the coverage for sales anticipations is much less, and perhaps the sample obtained is less representative, than for the plant and equipment anticipations.

Because of the potentialities of studying the relationship between sales and plant and equipment anticipations, we believe that more care should be exercised to bring the sales anticipations figures up to the standard of the plant and equipment anticipations in this survey. By use of the joint information, it is possible that, in time, inferences can be developed on relations between the way the two

³⁹ *Survey of Current Business*, March 1955, p. 8.

types of anticipations are developed, the influence one has on the other, and the extent to which plans are more important in the plant and equipment anticipations than in the sales anticipations. Furthermore, it is possible that sales anticipations may be found to represent an important basis on which plant and equipment plans are laid. *We recommend that the problem of improving sales anticipations figures receive high priority.*

As emphasized in Chapter II, the predictive value of sales expectations is enhanced if employed in combination with other economic variables. This fact makes the sales expectations survey here considered particularly important because of its potentially wide coverage. Furthermore, the close relation between sales, on the one hand, and production and employment, on the other, gives this survey added importance. Conceivably it could throw light on the reasons for variations in working hours by permitting the checking of sales expectations against sales which actually develop. For instance, unexpected increases in sales may result in rising hours of work, rather than larger employment.

CORPORATE DECLARATIONS OF EXPECTED TAX: NEW LAW

The Internal Revenue Code of 1954 continued to change the due date for instalments under the corporation income tax. Table 9 is included here to aid the reader in seeing what the changes in due dates have been and what the projected changes are under the new law. If the fiscal year of the corporation is not the calendar year, the months at which the due dates fall are changed accordingly to begin with the ninth month of the fiscal year of the corporation.

It is estimated that about 20,000 corporations or slightly less than 5 per cent of the total number paying corporation income taxes would be required to start paying income taxes by the ninth month of their fiscal year in accordance with these provisions. About 85 per cent of the total corporation income taxes would be accounted for.⁴⁰ A substantial number of the nearly 5 per cent of the corporations affected would find themselves under no particular compulsion to estimate their income before the end of the fiscal year, for the penalty does not apply if the payment made is "equal to a tax

⁴⁰ These estimates are taken from *Internal Revenue Code of 1954, Report of the Committee on Finance, United States Senate, to Accompany H. R. 8300, June 18, 1954, Washington, U. S. Government Printing Office, 1954, p. 139.*

TABLE 9

PAYMENT SCHEDULE FOR CORPORATION INCOME TAX UNDER PRIOR LAW (1949-54) AND UNDER 1954 CODE (1955-59)¹

[Per cent of tax liability due in each instalment; calendar-year corporations]

Income year	Income year		Following year				Total
	September	December	March	June	September	December	
1949.....			25	25	25	25	100
1950.....			30	30	20	20	100
1951.....			35	35	15	15	100
1952.....			40	40	10	10	100
1953.....			45	45	5	5	100
1954.....			50	50	0	0	100
1955 ²	5	5	45	45			100
1956 ²	10	10	40	40			100
1957 ²	15	15	35	35			100
1958 ²	20	20	30	30			100
1959 ²	25	25	25	25			100

¹ Reproduced from *Summary of the New Provisions of the Internal Revenue Code of 1954, As Agreed to by the Conferees*, February 1955, Washington, U. S. Government Printing Office, 1955, p. 126.

² Applicable to tax liability in excess of \$100,000.

computed at current rates on the basis of previous year's facts, reduced by \$100,000 and any allowable credits against the tax."⁴¹ Furthermore, no penalty applies if computation is made on an annualized basis "either for the months immediately preceding the month of the instalment due date, or for a period ending 2 months before that month."⁴² The penalty amounts to 6 per cent of the under-payment (figured by subtracting \$100,000 and 30 per cent of the remainder from the tax shown on the final return), and a few corporations may find the penalty the most satisfactory available method of financing a marginal amount of working capital.

It is reasonable to believe, however, that the new law will encourage the majority of large corporations to forecast their income. A large number of corporations now purchase short-term Government securities before the tax is due as a method of making provision out of current income for the tax. There may be considerable reluctance to let the provisions noted in the preceding paragraph guide in making provisions for tax payments for fear that suspicions might be aroused. The larger corporations are required to file a

⁴¹ *Summary of the New Provisions of the Internal Revenue Code of 1954, As Agreed to by the Conferees*, February 1955, Washington, U. S. Government Printing Office, 1955, p. 126.

⁴² *Ibid.*, p. 127.

declaration of estimated yearly tax by the ninth month of the fiscal year, similar to the declarations required of individuals earlier in the year.

Therefore, it may be hoped that early corporate income tax payments will reflect anticipated corporate income three months before the end of the fiscal year, at least to a limited degree. This would mean that, for the more than two-thirds of the corporations which report on a calendar-year basis, there is some hope that income tax payments in September will reflect advance estimates of the year's income. We can do little more than wait to see the extent to which this result actually is achieved. However, even if the interim corporate income tax payments fail to forecast income with any effectiveness, there still remains the possibility that the machinery establishing early interim payments may direct more attention to forecasting corporate income.

PLANNED GOVERNMENT EXPENDITURES, STATE AND LOCAL:
CEA EXPERIMENT⁴³

The Council of Economic Advisers and the Housing and Home Finance Agency requested the Bureau of the Census to survey State and local government plans as of October 1, 1954. Data were requested from 4,068 governmental units. Returns were received from 3,822 governmental units or nearly 95 per cent of those surveyed. The 4,068 units are only 3.5 per cent of the total in the country, but they accounted for 82.1 per cent of the expenditure for construction by State and local governments in 1953. The survey concentrated on developing information regarding what has been called in earlier studies a "shelf of public works." The respondents were asked to exclude all maintenance work, all projects where construction was already under way, and all projects where work was scheduled to start before June 30, 1955.⁴⁴ A substantial, but unknown, part of the work to be done during the following year was thus excluded. In addition, there is no way to read from the survey results probable levels of construction at any particular time,

⁴³ See "Survey of Construction Plans of State and Local Governments," U. S. Department of Commerce, Bureau of the Census, release dated Apr. 4, 1955.

⁴⁴ Also, presumably to avoid duplication in reported figures, the respondents were asked to exclude any projects for which Federal aid had been approved or definitely scheduled and any projects for which another governmental unit was to be the primary sponsor or contracting authority.

for questions were not asked with regard to the time construction might be undertaken. The forms asked for totals of a given category and not for information on individual projects.

Information was obtained on projects classified by 9 types of construction, by project size, and by plan status. On plan status, projects were classified as to those ready-to-go, planned (could be brought to ready-to-go status in 6 months), and programmed (could be brought to ready-to-go status in 6 to 18 months). The sample return showed \$1.8 billion ready-to-go, \$5.8 billion planned, and \$17.8 billion programmed. The sum of the ready-to-go and planned was somewhat smaller but of about the same order of magnitude as actual expenditure for construction in the same governmental units in 1953.

The survey pointed up the apparent fact that there is wide variation in the extent to which particular units of governments have done definite planning and programming of future projects beyond those now in process or scheduled for early starting. Almost half of the reporting governmental units indicated that they had no planned projects within the scope of the survey. The questionnaire did not ask for 1953 expenditures and we have no tabulation to show the relative importance in actual expenditures of those units in which no relevant plans were made. *It is to be hoped that such tabulations will be made, for they are important in evaluating the extent to which investment planning is practiced at the State and local levels of government.*

In some cases it was necessary to canvass separately the individual agencies and departments of some governmental units. Inability to get information from a central source in the governmental unit is a handicap in developing surveys of this sort, but apparently it did not become unduly onerous.

We must emphasize that this survey was not pointed at the kind of anticipations regarding the near future with which we are particularly concerned. As noted above, it gave no information as to planned expenditures for any particular time, and it omitted an indeterminate part of expenditures planned for the near future. It did demonstrate, however, the feasibility of getting anticipation information from State and local governments.

FOREIGN EXPERIENCE WITH DIRECT EXPECTATIONS

The Committee has not regarded a full-scale examination of foreign experience with expectations surveys as part of its assignment. However one program of this type—that of the Ifo-Institute for Economic Research in Munich—seems particularly worthy of attention because it yields evidence on certain questions that have not been as successfully investigated on the basis of domestic surveys. Chief among these questions are (1) the accuracy of individual-firm expectations, (2) the determinants of business plans and anticipations, and (3) the problems of aggregating individual responses.

The surveying of enterprise expectations on the Continent seems to have originated with the Ifo-Institute at the beginning of 1950. The program is thus junior to that of Dun and Bradstreet, which it most resembles; but it has attracted considerable attention among economists and statisticians and has been widely copied by research organizations in other countries. Thus at the close of 1954, eight countries in addition to the United States and Germany were conducting surveys in the field of industry and trade which yield information on business expectations. As of this date, the IFO method (outlined below) was being applied in the following countries: Japan, Austria, Union of South Africa, The Netherlands, and Belgium. Except for South Africa where quarterly surveys are taken, reports are made monthly and the findings are published in tables and colored charts of distinctive design, without text, to give a quick summary impression of the proportion of firms expecting a rise, no change, or a fall in selected business variables. Information is obtained through direct questioning of industrialists and members of various trades. Some countries try to cover all industries, some only individual ones (Netherlands: shoe industry; Belgium: textiles). Most surveys try to give information for the country as a whole, but in Japan only the Tokyo region is covered.

Three other countries apply somewhat modified methods. (1) France, through the Institut National de la Statistique et des Études Économique, conducts a comprehensive semiannual survey of industry and trade (lately agriculture and construction, as well as tourist trade, have been added). The results are shown in tables, charts, and descriptive text. The survey is distinguished by the

use of a system of descriptive symbols to qualify and subdivide various findings. (2) Luxemburg applies the method of France. (3) Italy does not question individual industrialists, but a survey is made by various chambers of commerce, industry, and agriculture in some 90 different regions. The combined results are published in tables and text.

Plans for application of the Ifo method to the ceramics and glass industries are being made by the Bureau of Industrial Statistics in Calcutta, India. Also the Institut für Wirtschaftsforschung of the Technische Hochschule, Zurich, Switzerland, is doing preliminary work to conduct a survey according to the Ifo method. There is thus developing an international body of data on businessmen's expectations, much of it compiled on a common plan, which should prove of substantial value in the empirical study of forward-looking aspects of business decision making.

Description of the survey process. A very brief account of the Ifo-Institute procedures must suffice. Interested readers will find much fuller accounts in the papers of Oskar Anderson, H. Theil, and others listed in the bibliography to this report.

At present the Munich Institute sends monthly questionnaires to about 5,000 firms throughout West Germany. The questions are directed to leading executives in the firms, and have reference to the actual and expected directions of change in specified economic variables that are involved in the decision-making activities of the firm. The procedure is thus very like that of Dun and Bradstreet in the United States, but it has two important differences and one substantial advantage. The first difference is that the Munich surveys involve a shorter forecast (two months instead of two quarters); the second is that the forecasts represent a comparison with the situation prevailing at the time of the survey, rather than in the corresponding period a year earlier. The second difference is not universal, however; for variables like turnover and purchases in the trade branches, where seasonal fluctuations are large, the Dun and Bradstreet method of seeking the change from the same month of the previous year is employed. The advantage noted for the Munich procedure is that successive reports by the same firm can be had in considerable numbers, thus permitting tests of individual-firm forecasting success.

The published form of the results also differs from that used by Dun and Bradstreet. That is, the outcomes are presented as "weighted percentages": each answer is weighted according to the size of the respondent firm as measured by number of employees (manufacturing) or turnover (trade), and the weighted answers are aggregated to show the relative importance in each industry or trade classification of firms reporting rises, no change, or falls in a particular variable. Hence the Munich "business test" outcomes for each variable are represented by a triple of numbers which show the weighted per cent of firms reporting (or expecting) an increase, no change, or a fall. The sum of these numbers is, of course, unity.

Findings of research. An active scientific interest in the Munich surveys has produced a number of interesting conclusions.

(1) The Munich test data appear to have positive value in forecasting changes in aggregate variables such as sales, employment, and prices, as represented by official index numbers. By and large, the correlation of business test indexes with actual aggregate changes in industrial and trade variables is of the order of 0.90. For industrial variables, these correlations may reflect, in part, the ability to predict seasonal variations.

(2) However, the extent of movement of firms into and out of the rising and falling categories—what in this country we have come to call the extent of "diffusion"—is quite generally under-anticipated. Evidently business expectations are expressed with considerable insensitivity to minor foreseen changes, which are reported instead as no change.

(3) Expectations also show a slight lag behind the actual changes they purport to anticipate, though not so great as to destroy all forecasting value. Two-month forecasts prove more accurate when interpreted as one-month forecasts than when confronted with actual two-month changes.

(4) The above conclusions, all based on studies of the Munich test data in their aggregated form, are supported by follow-up studies of the forecasting success of individual firms. Indeed, in textile manufacturing and trade, it was found that the direction of change forecasted by the firm was far less often contradicted by events

than was the predicted direction of aggregate change based on the summary "business test" series. This result, at first sight paradoxical, is apparently due to as yet unsolved problems in the aggregation of qualitative data on business expectations to yield measures of quantitative change. Procedures so far have been experimental and fairly primitive; but the evidence of substantial accuracy in the forecasts of individual firms suggests the promise of, as well as the need for, careful investigation of the aggregation problem. For this work follow-up data for individual firms are essential.

(5) The Munich data also yield interesting results on the formation of expectations. Thus in the leather and shoe industry, where the data permit distinguishing three successive stages of the trade, the data support a quite elementary theory of price expectations: Expected buying prices are based on (a) the direction of change of actual buying prices since the last month and (b) the direction of change of actual selling prices of "earlier" stages in the same period. In other words, the traders entertain expectations which presuppose the existence of considerable inertia in the direction of change of their buying prices. Another finding for this industry attests to the potential value of the Munich data for analyzing the decision-making process. Preliminary reflection had suggested the hypothesis that actual and expected selling prices were determined by actual and expected buying prices, respectively, for the same month. Analysis showed, however, that traders did not always react to increased buying prices by raising their selling prices, either in the sphere of expectations or in that of actual behavior; but such a complete reaction did take place when buying prices declined or remained the same.

This brief account cannot do justice to the high quality of research devoted to the Munich surveys, but it suffices for our purpose, which is to draw attention to the features of the Ifo method which make such research possible. These are:

- (a) An integrated structure of surveys covering the interrelationships among industries as well as among causally related variables within industries, with samples large enough to permit the needed breakdowns.

- (b) Co-ordination of concepts and coverage with official time series of business activity.
- (c) Substantial overlap of successive samples to permit follow-up studies of the forecasting success of individual firms, the characteristics of successful and unsuccessful firms, and so forth.

IV. INVENTORY EXPECTATIONS: THEIR SIGNIFICANCE AND MEASUREMENT

Introduction. Much of the current interest displayed in inventories arises not so much from the part that they play in facilitating production, vital though it be, as from the instability that they sometimes impart to the operations of the economy. In consequence, the basic aim of this chapter is to foster an improved understanding of the role played by inventory plans in the operations of both the economy and the firm. More specifically, however, the chapter concerns itself with investigating the role that data on inventory plans may play in understanding business fluctuations.

Role of inventories in the economy.⁴⁵ As a background to understanding the influence of inventories on business fluctuations, it is well to have in mind the magnitude and composition of inventories. Manufacturing and trade inventories have accounted for some 75 to 80 per cent of total business inventories; agricultural inventories have made up most of the remainder. The book value of manufacturing and trade inventories as of June 30, 1955, was about \$78 billion, equivalent to perhaps 50 per cent of the annual national product originating in these industries. Well over half of the book value was accounted for by manufacturing enterprises, and the balance was divided between retail and wholesale establishments in a 2 to 1 ratio. These proportions have not changed greatly over the past 10 to 15 years.

Inventory plans. Because changes in inventories contribute a substantial and highly variable part of the national product, their measurement is an essential part of the national income and product measures. When, however, information on inventories is to be

⁴⁵ Several pages of this report are based upon, or are extracted from, "The Strategic Role of Inventories," a publication of The Business Executives' Research Group of the Wharton School of Finance and Commerce of the University of Pennsylvania. One of the members of the Committee was research coordinator of the Business Executives' Research Group.

used as data foreshadowing economic change, the more pertinent measure may well be individual anticipations of inventory holdings rather than historically and statistically inferred holdings.

One way of developing such a measure is to obtain information on anticipated inventory changes directly from business firms. Such data might then be incorporated in general forecasting techniques or models to give them more precision as tools. Projection of fixed capital expenditures on this basis has been widely employed in recent years, with more than a tolerable degree of success. It is believed that information concerning inventories can easily be gathered in the same manner as, or in conjunction with, fixed capital surveys.

The logic underlying this suggestion is persuasive; the assumptions, however, require careful consideration. It may be foolish to waste time and effort trying to calculate what people might do if one can find out what they plan to do simply by asking them. But, it is sometimes a dangerous practice to assume that people know what they intend to do or that, if knowing, they would be able to do it.

Further, insofar as the collection, classification and analysis of data involve the opportunity cost of data not collected, classified or analyzed, substitutions or additions to the flow of statistical intelligence should take place only if the statistics provided are the most efficient available. The efficiency of the data, moreover, depends not alone on their contribution to forecasting the economic activity measured, but also on their capacity to provide insight that will lead to a better understanding of the nature, characteristics and significance of that activity. In short, that effort is most worthwhile that maximizes our ability to comprehend the complexity of our economy as well as our ability to predict the movement of one aggregated activity of that economy.

Role of inventory plans in forecasting. To merit serious consideration for inclusion in a forecasting procedure or model the data to be collected should possess the characteristics of being an early and accurate harbinger of things to come. In economic forecasting in general our interests are usually focused upon: (a) the timing of a change in direction, (b) the duration and magnitude of that change, and (c) the degree of generality or specificity of the

change with respect to the significant and discernible components of some aggregate economic activity.

The application of these criteria to the proposed data on inventory plans presents some difficulty. The determination of accuracy and timing should begin with a study of the past performance of the measures treated as a time series. This series should be analyzed in terms of its reliability in predicting and timing the movements indicated above in the time series in question over a series of variant cyclical patterns. Conclusive evidence would demand that the series have a reasonable theoretical expectation of continuing in the future in much the same pattern it had exhibited in the past. Acceptance necessitates that the measure be used to forecast successfully that which it is supposed to forecast for a reasonable period of time.

In its current experimental stage, the body of data available for consideration at this time has no such promising or full history. Several experimental efforts have been, or are being, made towards assessing the role of inventory plans or anticipations in predicting the level of inventories. The results of only a few have been published to date, and this dearth of recorded observation severely limits this chapter. But, in seeking to enlist support for and to stimulate interest in the consideration of this form of investigation, and to suggest its potentiality in forecasting, the following two studies have been selected for review and evaluation. The quarterly *Fortune Magazine Survey of Inventory Plans* is described, however, in Chapter III.

Wharton School of Finance and Commerce Study. A case study, in considerable depth, on this new approach was carried out in connection with the study of inventory problems by the Business Executives' Research Group under the joint sponsorship of the Wharton School of Finance and Commerce, University of Pennsylvania, and the Committee for Economic Development. Nine monthly meetings on this subject were held during 1953-54. Methods of forecasting changes in inventories were considered, and an attempt to break new ground was made by testing the ability of firms to predict or project correctly short-run movements in their own inventories.⁴⁶

⁴⁶ The project was broader than inventory plans in that the role of inventories in the economy and inventory control systems were also studied.

Each participating firm was asked to fill out a series of four questionnaires (sample questionnaires appear on succeeding pages), one at the end of each calendar quarter beginning with December 31, 1953. At each date firms were asked to furnish information with respect to actual level of inventories as of that date, expected level as of three months forward, reasons for the expected change, and (in all except the first series) reasons for any difference between the actual level of inventories as of the given date, and the level estimated for that date in the previous questionnaire.

Of some 25 firms in the group, 22 returned sufficiently complete information for comparisons between anticipated and actual inventory changes in the first and second quarters of 1954. Eleven expected their inventories to decline in the first quarter of 1954; four anticipated that their inventories would remain the same; and seven expected them to rise. Two of the four firms that forecast no inventory change actually maintained level inventories. Of the 18 firms that did expect some change, all but one correctly anticipated the direction of the change.

The results of the second quarter of 1954 were similar. Twelve firms thought at the beginning of the period that their closing inventories would be smaller; 2 expected inventories to remain the same; and 8 anticipated larger stocks. Once again, all but one of the firms that expected some change were right about the direction of the change. These results, while very encouraging, are not as spectacular as they seem because strong seasonal elements for some of the firms enabled them to predict the direction of changes with a high degree of certainty.⁴⁷

Role of Inventories—Initial Questionnaire

1. Do you have inventory budgets? Yes..... No.....

Note: These are dollar figures for company or plant, not physical volume data for commodities.

2. If the answer to 1 is yes, for what period or periods ahead?
-

⁴⁷ Data for the third and fourth quarters of 1954 were obtained even though the project came to an end in June of 1954. As might be expected, in the absence of controls the data reported were not in sufficiently good condition to be tabulated.

3. How is your inventory budget put together (i.e., by whom, when, in what detail, and on the basis of what types of information and assumptions)?
4. How frequently is your inventory budget reviewed?
.....
5. What use is made of these inventory budgets and to what extent is it used as a basis of inventory control?
.....
6. How long have you had inventory budgets?
7. Would it be feasible for us to obtain such data for back periods?
Yes..... No.....
8. If answer to 7 is yes, can we obtain corresponding data on actual inventories for comparative purpose? Yes..... No.....
9. If answers to 7 and 8 are yes, can we trace reasons for important discrepancies between budgeted and actual inventories (e.g. differences between sales forecast and sales realized, problems in acquisition of raw materials or in production, price movements, etc.)?
.....
10. Can we arrange to collect inventory budget data and actual inventories for future periods (perhaps on a quarterly basis)? Yes.....
No.....
Note: Data for individual companies will be treated as strictly confidential.
11. If answer to 10 is yes, can we arrange to check reasons for important discrepancies between budgeted and actual inventories in these future periods? Yes..... No.....
12. If you do *not* have inventory budgets, would we be able to obtain for future periods (perhaps on a quarterly basis) information on whether you plan to increase, maintain or decrease your inventories and the reasons therefore (e.g., present inventories regarded as too low for current volume of sales, sales or prices expected to increase, etc.)? Yes.....
No.....
13. If answer to 12 is yes, can we arrange to check whether inventories are changed in accordance with these plans and if not why? Yes.....
No.....

14. Can we arrange to obtain data on net amount of new money that you expect to raise through borrowing (including bank loans, bonds, mortgages, etc.) or stock issues over the next quarter and year? Yes.....
 No.....
 Comment

Questionnaire on Anticipated Trend in Inventories as of
 June 30, 1954

1. What is the dollar value of your inventories as of June 30, 1954 (or nearest available date)?

2. Do you plan to increase, maintain or decrease inventories over the next three months?
 Increase..... Maintain..... Decrease.....
3. If you plan to increase or decrease your inventories,
 (a) Do you expect the change to be substantial? Yes..... No.....
 (b) Can you indicate the approximate magnitude of the expected change either as a % or in absolute terms?
 Expected % change from 6/30/54 to 9/30/54.....
 or
 Expected dollar value of inventories as of 9/30/54.....
 (c) What are the major reasons for the expected change? (Please indicate the extent to which seasonal vs. nonseasonal influences are reflected:)

4. If your actual inventories for June 30, 1954 (as reported in 1 above) differ significantly from your estimate for June 30 as of three months earlier, please indicate the major reasons for the discrepancy between the two figures.

Most firms that expected inventory increases and also a few that expected decreases attributed the change to seasonal factors affecting either sales of finished goods or the availability of raw materials.⁴⁸

⁴⁸In this exploratory study, seasonally adjusted data were not requested. In general, the project clearly established that most large firms have inventory budgets in terms of dollar values although, as in the petroleum industry, inventories are generally expressed as physical volume data.

Firms that planned to reduce inventories often gave as the reason an actual or anticipated reduction in sales.

The size of the predicted change and the degree of error in forecasting varied widely in this small sample of firms. Most of the firms anticipated changes of 10 per cent or less, with some tendency toward a cluster around 5 per cent for both the firms planning inventory investment and those contemplating inventory disinvestment. The number of firms which underestimated the extent of the change and the number which overestimated it were about equal.

Excluding one firm with inventories equal to twice those of all the other firms together, the inventory anticipations of the participating firms amounted to a reduction of nearly 7 per cent in their combined stocks during the first quarter of 1954; their actual combined inventories declined by somewhat over 10 per cent. The large firm that was excluded forecast its inventory position very accurately; it anticipated no change in inventories, and inventories actually changed by only a fraction of 1 per cent. If this firm had been included, therefore, a much higher degree of accuracy in inventory forecasting would have been obtained; aggregate expected inventory reduction would have come to nearly 3 per cent of combined stocks and actual reduction to just about 3 per cent.

For the second quarter there was an anticipated rise in aggregate inventories (excluding the large firm previously referred to) of 2 per cent and an actual increase of about 6 per cent. (In this period too, the accuracy of the forecast is increased by the inclusion of the large firm.)

Studies of the relationship between anticipated and actual plant and equipment expenditures have indicated that larger firms project their fixed investment more accurately than smaller ones. This suggests the possibility that a similar situation may exist in predicting inventory changes. The sample was much too small to test this hypothesis, but there was some slight though irregular tendency for forecasting errors to decrease as the firms increased in size.

Another interesting point relates to the difference between durable goods producers and others. In the first quarter of 1954, durable goods manufacturers predicted the percentage change in their inventories much more accurately than did nondurable goods

manufacturers or commercial establishments. In the second quarter, however, they were only slightly more successful than the others. More experience is needed to determine whether there is any significant difference in the ability of durable goods firms and others to predict inventory changes accurately.

Some of the more sizeable errors were attributable to changes in inventory policy adopted between the time that the forecast was made and the date to which it applied. In one or two instances, for example, the supply situation for raw materials eased, and firms, assured of ready supplies, reduced the size of their safety allowances. Again, there were cases in which firms were induced by lower prices to engage in heavier inventory purchasing than they had planned. Finally, unusual circumstances, such as a strike, occasionally brought about an inventory level that was far different from the anticipated one.

This limited experiment, hampered as it is because of its relatively small size and possible nonrepresentativeness, is strikingly powerful for its size. Considerable skepticism would be required to deny that its results support the modest generalization of its sponsors: "the results, so far, particularly in predicting the direction of movements, suggest that it may lead to a significant improvement over present methods of forecasting inventory changes on the basis of recent movements or historical relationships."

Dun and Bradstreet Survey. The selection of the Dun and Bradstreet Survey of Businessmen's Expectations as the second illustration compensates in part for the statistical shortcomings of the first. In these surveys, carried out by direct interview, the respondents are asked about the outcome in the quarter just ended compared with the same quarter a year earlier, and about their expectations for the forward period roughly two quarters ahead compared with the same quarter a year before. These inquiries relate to sales, net profits, new orders, number of employees, and level of selling price as well as level of inventories. Only the anticipated direction of change is asked for.

A Dun and Bradstreet report consists of two sets of percentage distributions, one showing for each business factor and industry the distribution of firms which experienced a rise, no change, or a fall with respect to the period just ended; the other, the distribution

of firms which anticipate a rise, no change, or a fall with respect to a designated period in the future.

Concentrating on the accuracy of anticipatory data in forecasting the direction of change only, Millard Hastay, of the National Bureau of Economic Research, has analyzed these distributions in an effort to test their significance in diffusion index construction.⁴⁹ While his interest only partially parallels that of this report, certain of his conclusions relate to the accuracy of inventory plans in forecasting inventory action. A summary of these conclusions follows:

(a) The first series of conclusions is based on an analysis of time series composed of both expectation data and actual data. Plotting each pair of series so that they are comparable on a time basis he notes that they are not comparable on a sample basis. Thus he anticipates errors of sampling as well as in forecasting. While no correction for this error appears expedient, an observable and systematic pattern of movement in the series warrants the following conclusions:

- (i) A marked tendency appears to exist for expectations to lag the changes that develop in two-quarter forecasts.
- (ii) As a one-quarter forecast, expectations show a marked improvement over their role in the two-quarter forecast.
- (iii) On the basis of simple correlation he finds that one could not predict events two quarters ahead from events today as well as from a contemporaneously determined index of expectations. This holds true, he notes, for the one-quarter forecast as well.

(b) The second set of conclusions is based upon more refined correlation techniques designed to ascertain the net contribution that expectations make to forecasting actual diffusion. The results of his multiple regression study here are promising.

- (i) Considered as a two-quarter forecast, the expectations are in every case more closely associated with actual events than are the contemporaneously reported indices of actual events.
- (ii) The same conclusion is valid for expectations as a one-quarter forecast in comparison to the actual experiences only one quarter in advance of the forecast period.
- (iii) When a forecasting model is built upon the contemporaneous expectations and events, the partial correlation of expectations and realized events after allowance is made for events at the time the

⁴⁹ See *Proceedings of the Business and Economic Statistics Section, American Statistical Association*, (covering the Montreal meeting of September 1954), Washington, 1955, pp. 93-123.

expectations were formed is in all cases of inventory planning greater than .82.

(c) The final set of conclusions is based upon an analysis that compares both expectations and actual diffusion indices with the aggregate changes of inventories in selected Department of Commerce series. Noting that extraneous sources contribute substantial error to this effort, he tentatively advances the following statements:

- (i) "We are prepared to find that expectations lag somewhat behind the experience they allegedly forecast, and such lags are apparent for all business factors but inventories." Nothing that this fact may be technically induced because of variations in reporting procedures he concludes that, "But on the face of it, the diffusion of expectations provides an excellent two-quarter forecast of changes in end-of-quarter inventories."
- (ii) ". . . only for manufacturers' inventories and retailers prices do we get correlations of a size that augurs well for satisfactory predictions. The remaining correlations provide a pattern that reinforces the inference made above, that the Dun and Bradstreet data contribute 'significantly' to forecasting aggregate change, but their size makes it plain that such data cannot bear the full burden of a successful forecasting scheme."

Summary. Admittedly the evidence disclosed by these surveys is as yet inconclusive in demonstrating that anticipatory inventory data should be substituted for or added to existing procedures of forecasting. In summary we can note only three indications of the promise we implied such measures might contain:

(a) Both for individual cases and in the aggregate, anticipations predict the direction of action with a significant degree of accuracy. The significance of this accuracy is dampened by the influence of seasonal changes in the case of the individual plan. (Seasonal adjustment was built into the questionnaire that developed the aggregate data.)

(b) In the aggregate, anticipation data predict turning points with questionable accuracy. The need for further investigation of this point is undoubtedly encouraged by the promising success of the diffusion index of inventory plans in predicting the turning points of aggregate inventory investment.

(c) In the aggregate, anticipation data reinforce status data significantly in forecasting.

While few in number, these indications when viewed in relationship to the dearth of material available for investigation appear

as more than sufficient justification for an increased interest in developing and carrying out a more comprehensive and more carefully designed experiment on the part that such plans might play in forecasting.

Prior to making any such specific recommendation, however, a more successful demonstration of the possible efficiency of this anticipatory type of statistic seems in order.

Potentiality of anticipatory surveys in developing understanding.

In a sense surveys on anticipations give to statistics a "new look," a forward look that has a great significance for the future of economic analysis. For truly, the method by which data are collected, when once adopted, controls the future direction of the investigator's interest. An illustration of this can be seen in the case of inventories when viewed in their role as facilitators of production and sales.

While, to all who consider it, this role is fully comprehended, the lack of a verifiable conceptualization of that role has resulted in the substitution of a concept which, while expedient, conceals more than it reveals.

As facilitators, inventories have been viewed in general as shock absorbers that impart internal continuity and stability of operations in the face of discontinuous and variable manifestations of supply and demand. Now, by relating their magnitude to the rate of continuity of both production and sales, in an operational and functional sense their significance has been minimized for analysis. They have become dependent variables whose value can be, it is thought, inferred from estimates of sales and/or production. This point of view, as has been noted, possesses the merit of being expedient. It does measure something. Analysis of the firm is now aided by the assumption of an automatic facilitator. One less unknown must now be dealt with. There is one less bit of data that must be discovered. Evidence is replaced by inference.

Consider now the broader view. Inventories as facilitators are considered in their relationship to the totality of problems involved in running a business. They are now considered as but one variable of the multi-variable construct of the firm's total planning scheme. Inventories must now be considered in their functional role in the physical activities of production and selling and in relation to their

impact on the cost-profit calculus of the firm through planning periods of variable time spans.

Cognizance of this complexity, while it may vary among the population of firms, will stimulate managers to work in the direction of reducing this problem area. Further, we can expect that they will reduce it to proportions that are amenable to relatively automatic decisions embodied in policy and controlled by accounting records and budgets. Yet while both views lead to the automatic determination of inventories there is one significant difference for analysis.

In the latter case the automatic role was assigned by decision and is thus subject to correction and revision after review. In the former case any change that might take place must be inferred from a "logical" or "historical" basis. Assuming that the inference is based on history, any such deviation from the projected course must in the short run be considered in the nature of a random movement, an "error" on the part of the firm. Only when the firm continues to "err" in this fashion for a considerable period of time would there be any historical basis for correction. Knowledge must always follow the fact in inference of this type because interest is always directed toward what was, not why it is. Further, with inference linked to the past as it is, the sins of the past dominate the future action of the firm. By implication, therefore, the firm can never "learn" how to deal with the future.

When inventory changes are looked upon as the result of decision there is no such restrictive implication as to the ability of the firm to cope with the future. Perhaps such changes as are planned reflect the past sins in a corrective sense that implies learning through experience and perhaps not. It is to provide answers to such questions that we urge the use of anticipatory surveys on inventory plans.

It is important to remember that an understanding of the role of inventories in the economy cannot preclude an understanding of the role of inventories in the firm. The how, why and when of inventories is somehow locked in the firm's planning procedures. The key that will open the lock and release this desired information will be ground out in the refinement of anticipatory surveys. Evidence, not inference, is the expedient measure in the long run.

Recommendations. On the basis of the implied efficiency of the data on inventory plans both in forecasting and in the development of a broader understanding of the operations of the economy, the following recommendation is made:

That a survey of exploratory character, constructed upon an adequate sample basis, be carried out over a sufficient period of time to determine whether data on inventory plans should be incorporated as a regular study by an appropriate government agency. (The Committee understands that the U. S. Department of Commerce currently has undertaken exploratory steps in this program.)

Questions as to the content of the survey, the nature of the sample and the duration of the time period must of course be answered by the conductors of the survey. As a final contribution to this effort the following suggestions are made:

(1) Coverage should include inventories of all types. Thus data on raw materials, goods in process and finished goods inventories should be obtained.

(2) Coverage should include as many business classifications as are meaningful. Thus data on inventories held by firms at all levels of production should be collected. Further, data on government inventories such as those held by the C.C.C. would belong in this study.

(3) While centered upon anticipated changes in the rate of inventory investment, coverage should be extended where it is deemed meaningful to include data on the nature of the planning procedure, on the types and use of control devices, and the relationship of inventory planning to production and merchandising planning on the one hand and to cost and profit planning on the other. It would also be well to know, where inventories are not in "balance," the approximate period necessary to move back to adjustment.

(4) Because of the possible distorting influence that price and market conditions can impose upon customary behavior, data on the influence on planning and plan adjustment evoked by these forces should also be included.

(5) Recognizing that systematic bias might prevail in such planning efforts at different levels, and for different types of firms, efforts should be made to test for it in the exploratory period.

(6) Noting that in such statistical tools as the diffusion index it is the number of firms, not necessarily the importance of such firms, that determines its value, it would be worthwhile to attempt to discover various weighting schemes that may have analytical value in varying uses:

V. INFERENCEAL MEASURES OF BUSINESS EXPECTATIONS

This chapter considers the problem of measuring general business expectations by use of available economic measurements. Such measurements may be called indirect in that they are not derived from answers obtained by direct questions on expectations, as in the surveys described in Chapters III and IV. They may also be called inferential in that the results are derived or inferred from measures which frankly were not developed for the primary purpose of measuring business expectations. The measures employed reflect forward-looking or prospective action, and they are thus distinguished from direct measures which are derived from expressed opinions on expectations.

There are various reasons for studying indirect or inferential measures. (1) Many persons use such measures as representative of general business expectations. For this reason alone an evaluation is needed of what can be done along this line. (2) Because of the limitation of our knowledge of direct business expectations, it is desirable to check them against independent measures. For instance, there is a possibility that direct measures represent little more than reflections of observable data. If this is true, the observable data might show the expectations just as well. (3) There is a definite possibility that surveys do not give us a faithful picture of business expectations. The individual answering the survey may not be a key official, and therefore may not reflect guiding influences in the business. The businessman may provide indifferent or careless replies or he may be less able to explain the expectational basis for his actions than he is to make decisions and to act. (4) So far, direct surveys of business expectations have given us little insight into the process by which expectations are developed. Although we are able to offer only meager promise in this respect through the study of inferential measures, there is the latent possibility that something of the process could be revealed if measurements could be derived from action taken.

Processes reflecting shifts in business anticipations. We turn to the problem of finding measures which reflect prospective or anticipated business action. At first blush, the possibilities appear almost endless and generally unpromising. To a degree any economic measure reflects business action, and by some chain of

reasoning we could argue that any measure relates to anticipated action. Any measure of goods production, for instance, represents business decisions to take action, and either involves customers' decisions about future use or producers' decisions about sales prospects. Electric power production is sometimes said to reflect business anticipations in that it measures activity fairly well and may represent requirements involved in providing production for future sale. Again, the rate of production of a firm during winter months often is indicative of expected sales during the summer. For instance, the build-up of inventories at breweries or at building supply plants reflects expected summer demand. The shipping of ore on the Great Lakes is indicative of anticipated demand in the steel industry.⁵⁰ We shall note later that production measures taken together with inventory movements are extremely useful in interpreting new order data. Trains of thought similar to those which might incline us to consider production data as reflective of business expectations would lead to the inclusion of virtually all economic measures, for all measures are reflective of business action in one way or another and generally bear some relation to future expectations.

If, therefore, we hope to accomplish anything short of an exhaustive analysis of all economic measures, we must find a way to limit our attention to those measures which appear most promising. It is best to disregard measures directly reflective of current business action rather than of prospective action. However, no objective procedure is available for segregating those measures which reflect prospective action. The best that we can do is to examine those measures impressively recommended as indicators reflective of prospective action. Such a procedure, of course, opens us to the contingent criticism that we have overlooked important possibilities. Although we have used due care, exhaustive studies have not been made and we cannot be positive that no impressively recommended measure has been overlooked. An even more likely contingency is that there are measures or potential measures of prospective action that analysts generally have failed to perceive. Since the purpose of this report is to be exploratory, our efforts will not be fruitless even though we may fail to be appropriately exhaustive. If we elicit

⁵⁰ See, further, Appendix B.

additional suggestions regarding worthwhile measures of prospective business action, a relatively complete list of inferential measures may ultimately become available.

We have thus ruled out all direct measures of production and activity and have limited our attention to measures reflective of prospective business action. In this way, for instance, extension of consumer credit was ruled out. Purchases on consumer credit may reflect prospective action of consumers, but do not directly reflect prospective action of business.

Our search for impressively recommended measures of prospective business action has yielded a list which coincides in large part with Geoffrey Moore's selected list of leading indicators. This coincidence is not accidental, but it tends to check our results, for Moore's method was founded upon exhaustive empirical investigation rather than upon recommendations of others as to indicators of prospective activity. Furthermore, he was interested only in factual information regarding consistency of leads of series which may be said to have some logical general economic significance. There was here no direct effort to find measures which were argued to reflect prospective action, and yet we have found it desirable to include his complete list. The explanation is that thinking on prospective action is always somewhat empirical, and a major factor involved in recommending such measures has been a statistical record showing a predominance of leads. Our list also includes some measures which are not found in Moore's list, but Moore's omission of these series is readily explained.

The measures which we include in conformance with Moore's list are: business births, business deaths, common stock prices, new orders, length of the workweek, and sensitive price indexes. Moore's labels differ somewhat because he is concerned with specific series rather than with a process as such. He has three new order series, including two building contract series; hence the above six processes cover his eight series.

In addition to the processes represented by Moore's eight series we include consideration of the following: spread between high- and low-grade bonds, unfilled orders, forward investment commitments, other contracts, budgeted expenditures, other price indexes, employee accessions and money turnover. Moore did not include

measurements from these areas in his list of leading indicators either because no published series of the type was available at least for a substantial period or because series of the type available did not show leads consistent enough to be included. Since our purpose is to consider indicators of prospective business action whether or not they consistently reveal leading movements, our list is not necessarily limited to those series which have been found empirically to show consistent leads.

We are aware of the fact that none of the available measures of the processes considered provides an unequivocal reflection of anticipated business action. In many cases truly satisfactory series are not available to measure the process in question. In no case is it possible to provide information describing how decisions on anticipated business action are reached. The measures suggested merely are assumed to reflect anticipated business action in a greater or lesser degree. They thus lack fundamental econometric qualities, for measurements of the decision-making process are not made available and the meaning of the measurements obtained is not entirely clear. The purpose of the following paragraphs is to point up the type of prospective action indicated in each case and to note as well the complicating factors which tend to confuse the picture. Primary emphasis is thus placed on drawing conclusions regarding the extent to which these measures may throw light on our problem, for we are primarily interested in assessing what can be done in measuring and using anticipations.

Business births. Founding a new business obviously reflects sales prospects anticipated by the founders. An increase in the number of business births, therefore, would appear to reflect expansionary decisions about the future for the economy taken as a whole. It represents a net, rather than a gross, effect for the new companies can be expected to take some business away from established companies.

We assume that the conditions which lead to the forming of new businesses generally produce an optimistic outlook among old businesses. If, on the contrary, business births represent anticipations of only those forming new companies they cannot be said to be generally representative of anticipations.

The competitive effect produced by the formation of new companies may be largely unanticipated. Many new companies repre-

sent the discovery of a new niche in the total market situation, so that it may not be immediately apparent to existing companies that business will be taken away. Many of the new companies are too small to be rated as substantial competitive factors.

The idea that a change in business births represents a change in expansionary business anticipations appears reasonable. Its effectiveness in measuring such anticipations is another matter. Available data representing the formation of new businesses move with considerable irregularity. Although some irregularity may be expected in the aggregate movement of anticipated business action, it is unlikely that the irregularity in anticipations is as great as that found in available series of data. Aside from technical statistical deficiencies, the series no doubt reflect other influences as well as anticipated action. All sorts of financial, economic, technological, and legal problems must be ironed out. While these may tend to be offsetting in the timing of the total number of businesses formed in the economy, we have no reason to believe this offset is entirely effective. Anticipated action is delayed to a greater or less extent while practical problems are worked out.

Companies formed on the basis of special developments, to provide distinctly new types of service, may involve conditions which are so special that they do not well represent anticipated business action in the rest of the economy. Variation in the number of such companies formed could produce considerable irregularity unrelated to the general movement of anticipated business action.

No simple method is available for segregating irregularity in business births unrelated to general business anticipations. Cross-classifications would appear to provide the most hopeful procedure.⁵¹ Classification by size, industry and type of organization would appear to offer some promise, but too short a series is available by these classifications to reach definite conclusions. Such classifications warrant further study, and detailed study of the cases in cells of the cross-classification table which reveal discordant movements should throw light on the reasons for irregular variation.

The major available series indicative of business births are the Department of Commerce series on New Businesses and the Dun

⁵¹ See Betty C. Churchill, "Business Population by Legal Form of Organization," *Survey of Current Business*, April 1955.

and Bradstreet series on New Business Incorporations. The revision of the Department of Commerce series presented in January 1954 appears to provide data as statistically adequate as can be obtained at the present but, from the point of view of representing anticipations, it is unfortunate that the data were reduced to a semiannual basis. *It is recommended that reports be restored to a quarterly basis, and that they be made available more promptly than provided by present practices.* The Dun and Bradstreet monthly series on New Business Incorporations represents the number of stock corporations issued charters under the general business corporation laws of the various States. Since the series includes not only completely new businesses which are incorporated, but also changes in existing businesses from the noncorporate to the corporate form of organization and the transfer of an existing corporation to a new State, its meaning is somewhat less clear than the Department of Commerce data. *A careful comparison between the Department of Commerce and Dun and Bradstreet data is needed.* The differences may provide additional clues to the irregularity shown by the series.⁵²

Moore's table of selected leading indicators shows Dun and Bradstreet's series on New Business Incorporations to have led by an average of 2.5 months at 20 reference peaks and by 3.5 months at 20 reference troughs.⁵³ Leads occurred at 12 of the 20 peaks and at 15 of the 20 troughs.

Business deaths. Reasoning similar to that producing the conclusion that business births represent market conditions which lead businessmen to make expansionary decisions indicates the conclusion that business deaths represent market conditions which lead to contractionary decisions. In the case of business deaths the evaluation of future action is made less by the failing business than by creditors. The action taken represents an evaluation depicting unfavorable prospects for the failing businesses. The pessimistic action taken may be thought to reflect market forces impinging on the economy as a whole. In accordance with this reasoning, forces

⁵² The Committee is informed that such a study has been made by Viktor Zarnowitz of the National Bureau of Economic Research. The study shows that the principal source of discrepancy between the two series is the formation of new noncorporate firms, included in the Department of Commerce series but not in the Dun and Bradstreet series.

⁵³ Geoffrey H. Moore, *Statistical Indicators of Cyclical Revivals and Recessions, Occasional Paper 31*, New York, National Bureau of Economic Research, 1950, p. 64.

leading to business deaths reflect anticipated unfavorable market action.

Business deaths tend to generate unfavorable business conditions for they result in forced liquidation and a reduction in credit outstanding. This is an effect of business deaths, however, rather than a representation of anticipated unfavorable action. It is of course probable that many businessmen expect business failures to produce unfavorable competitive conditions, if they see that forced liquidations will occur. On the other hand, business deaths may depict the competition many businessmen have to face. If business deaths are to be considered representative of anticipated business action, the argument must rest principally on the assumption that forces leading to business deaths are depicted.

Series measuring business deaths move with great irregularity. As was argued in the case of business births, it is unlikely that changes in unfavorable business anticipations move so irregularly. Aside from technical statistical deficiencies, the series no doubt reflect other influences as well as anticipated action. The forces leading to failures may not lead to immediate closing of the company involved. The extent of the delays involved may be somewhat irregular. Furthermore, the figures on business deaths represent voluntary as well as involuntary closings.¹ Voluntary closings may at times represent personal decisions and are less likely to reflect unfavorable business anticipations. Therefore, voluntary closings probably do not move with the general rises and falls in business deaths, and thus introduce an element unrelated to the business cycle.

From the point of view of representing anticipated contractionary action, it would be desirable to segregate involuntary closings. We are not sufficiently familiar with the data involved to evaluate the feasibility of developing series which include only involuntary closings. Perhaps the more important reason for irregularity of movement is involved in delays arising in effecting closings. One promising technique suggested by G. H. Moore of the National Bureau of Economic Research for surveying the potential failures before a court proceeding or the business actually discontinues would be to study shifts in credit ratings as reported by Dun and Bradstreet and similar rating organizations.

As in the case of business births, we suggest that the best promise for isolating the effects of irregular forces unconnected with the general movement of anticipated contractionary action would be to cross-classify the deaths by size, industry, type of organization, and age of firm. Detailed study of cases in cells of the cross-classified table which reveal the major discordant movements would be a promising start in learning the reasons for irregular variation.

The important available series on business deaths are the Dun and Bradstreet series on Industrial and Commercial Failures and the Department of Commerce series on Discontinued Businesses. Several industry breakdowns are available in each, and the Dun and Bradstreet series are shown by number as well as by dollar liability involved. The Dun and Bradstreet series are available monthly, while the Department of Commerce data now are available only on a semiannual basis. *It is recommended that the Department of Commerce data be put back on a quarterly basis, and that an effort be made to provide the information more promptly.*

The Department of Commerce series on discontinued businesses includes closures of all kinds without regard to the reason for going out of business; however, a firm which is maintained as a business entity but which undergoes a change in ownership or a change in legal form of organization is classified as a business transfer and not as a discontinuance. A failure included in the Dun and Bradstreet series is defined as "a concern that is involved in a court proceeding or a voluntary action that is likely to end in loss to creditors." All industrial and commercial enterprises which are petitioned into the Federal Bankruptcy Courts are included in the failure records, as well as concerns forced out of business through such actions in State courts as foreclosure, execution and attachments with insufficient assets to cover all claims; and also voluntary discontinuances with known losses to creditors, where obtainable. The Dun and Bradstreet series do not include businesses engaged in personal service, nor financial companies, amusement enterprises, railroads, holding companies, real estate and insurance brokers, shipping agents, tourist companies and similar classifications not ordinarily considered to fall in the industrial and commercial category. While the Department of Commerce and Dun and Bradstreet series thus

are not entirely comparable, *it is recommended that a careful comparison be made to determine the comparability of movements shown.*

Moore's table on leading indicators shows Dun's liabilities of industrial and commercial business failures to have displayed an average lead of 10.5 months at 14 reference peaks and 7.5 months at 16 reference troughs.⁵⁴ Leads occurred at 11 of the 14 peaks and at 14 of the 16 troughs.

Common stock prices. Representing major equities, common stock prices are sensitive to business anticipations. It is to be noted that they do not necessarily represent the price the business management itself would pay, but presumably in most cases, except for temporary speculative aberrations, they represent what informed investors are willing to pay for the business's prospects. A common stock price index has considerable appeal, for it represents an aggregation of detailed anticipations of many separate individuals on future prospects.

It is well known, of course, that common stock price indexes display great irregularity of movement. This substantially complicates their use as a measure of anticipated business action. The most important irregularity represents short-period speculative fluctuation. Such fluctuation is an essential characteristic of a market of this sort. No satisfactory mechanical device for isolating it is available. About the best suggestion is the use of a moving average, but this procedure necessarily delays the availability of the data and places the turning points at later dates than shown by the actual index.⁵⁵

Perhaps less important under most conditions is the influence of commodity price prospects and interest rate prospects. Stock prices tend to rise when commodity prices go up and at times to react unfavorably to a rise in the interest rate. If the interest rate and commodity price movements conformed to the usual business cycle pattern, stock prices would not be unduly disturbed. However, the drop in stock prices in 1946 after it was discovered that commodity-price rises might be somewhat limited (although unrelated to the

⁵⁴ Moore, *Statistical Indicators of Cyclical Revivals and Recessions, Occasional Paper 31*, p. 64.

⁵⁵ A trailing moving average is sometimes employed to offset the first of these disadvantages.

movement of business activity) illustrates the complicated character of stock-price anticipations. There appears to be little prospect of isolating the effect of anticipations regarding commodity prices and interest rates from those regarding business activity.

Changes in the liquid savings position may also exert an independent influence on common stock prices. While abnormally large liquid savings may increase the level of stock prices after a time, the timing of the influence appears to be unpredictable. There appears to be no practicable method of isolating this complicating factor.

There are many available common stock indexes. The Dow-Jones Index of Industrial Common Stock Prices has attraction because of its wide use. The Standard and Poor's Corporation Combined Index of 480 Stocks is useful because of its wider coverage and more effective method of computation. The New York Stock Exchange Index of Market Value of All Listed Shares has value because of its still fuller coverage. Many other indexes are employed, but these three represent the principal advantages available. If a study of the performance of stock prices as a measure of business anticipations were to be made, *the movement of these three indexes or similar ones should be compared so that conclusions arising solely from the technical character of the indexes might be avoided insofar as possible.*

Moore's table on leading indicators shows the Dow-Jones Index of Industrial Common Stock Prices to have displayed an average lead of 6.0 months at 11 reference peaks and 7.2 months at 11 reference troughs.⁵⁶ Leads occurred at 8 out of the 11 peaks as well as troughs.

Bond price differentials. The spread between low- and high-grade bonds has often been used to measure business confidence. The argument depends on the different kinds of influences affecting more speculative as compared to sounder bond issues. The sounder issues principally reflect interest rates, while the more speculative issues reflect the risk factor influencing common stock prices.

This differential in bond prices represents an evaluation of the risk premium over the nearly "pure" interest rate. It shows the anticipation related to more speculative securities compared to the

⁵⁶ Moore, *Statistical Indicators of Cyclical Revivals and Recessions, Occasional Paper 31*, p. 64.

well established. Thus, it may be held to represent the differential prospects of the type of activity most likely to add to the total level of activity.

It is possible that low-grade bonds are a less universal reflection of business anticipations than common stock prices, in that less general public attention is given to them, but the case is not clear. Smaller businesses apparently are frequently financed in the second-grade bond market, and this may mean that a large group of smaller enterprisers are significantly influenced by the movement of low-grade bonds.

The price of low-grade bonds may be less influenced by short-period speculative movements than stock prices, although we have no clear evidence on this. Since interest rates affect low- and high-grade bonds about equally, changes in interest rate prospects should not produce an important complicating influence. Changes in commodity price prospects, however, will affect low-grade much more than high-grade bonds, and therefore large movements in commodity prices may introduce an important complicating factor. (If the price of low-grade bonds is heavily weighted by railroads, commodity prices, of course, would exercise no such influence.) Reclassification, or the need for reclassification, of bonds may introduce some irregularity. Bonds shift in soundness and if not reclassified the measure of differentials may lose much of its meaning. Reclassification will introduce a certain degree of discontinuity. The difficulty may be intensified if classifying agencies are influenced by the cyclical movement, with the shift in classification correlated with that movement. No easy solution is available for eliminating the irregularity produced by these complicating factors.

There is no currently published series on the differential between low- and high-grade bonds, and, to our knowledge, no carefully developed historical record has been made publicly available. *Because of the high regard several astute analysts, including Leonard Ayres, have had for this measure, it is recommended that a historical series be developed.* This might either be in the form of a ratio of low to high grade bonds or, possibly less usefully, an amount difference. Possibly the difference between Moody's Aaa and Baa might be employed.

Cursory evidence indicates that low-grade bonds react more quickly to sharp market influences than common stocks, and therefore they may show a greater lead. If the complicating factors are less important, the lead may be more consistent. Because the influence of interest rates is largely eliminated, bond price differentials may display less irregularity than an index of low-grade bond prices. Empirical evidence, however, is badly needed to check such conclusions.

Moore's failure to include bond price differentials in his table of selected leading indicators may be due entirely to the lack of empirical data. Of course, whether leads actually warrant inclusion awaits empirical investigation.

New orders; unfilled orders. As a general proposition it can be said that the rate of ordering rises and falls with business anticipations. The decision maker is the firm placing the order, so that attention will first be directed to its reaction; however, further below we shall note that the firm receiving the order often restricts the action of the firm placing orders by setting order limitations under certain conditions and by establishing rules on cancellation privileges. In some cases, the firms receiving orders effectively influence ordering by changing administered prices.

It would appear that ordering based on explicit estimates of future needs may be the exception rather than the rule. Probably, the official in charge of ordering is most interested in minimizing errors. The most conservative procedure would be to order on the basis of recent rates of operation. Some correction no doubt would be made if rates of operation were steadily increasing for it would be seen that the inventory position was being run down and might approach dangerously low levels. This correction no doubt would be applied irregularly, and thus it might partly explain the irregularity of movement of the new order series. If the rate of operations were steadily decreasing, attention would be called to the dangerous increases occurring in inventories, and ordering no doubt would come to depend largely on the desired inventory position rather than on the current rate of operations.

Ordering in many cases, of course, is more explicitly related to a desired inventory position. In some cases, the level of inventory on hand rather than current operations may be the principal guide.

The difference in behavior pattern compared to using current operations as the guide with changing inventories employed as a tempering influence is not clear.

The level of inventories can be given still greater importance in the ordering schedule if an explicit and reasonably satisfactory forecast of operating rates is developed. Since it would appear such procedures are employed by only a small percentage of total business, they can scarcely be considered typical.

There are various complicating factors which keep ordering from depending entirely on explicit business anticipations, even though the anticipation may be based on as rough and crude procedures as judged generally to be the case. First, there are mechanical problems involved in ordering, such as quantity discounts and ordering cycles. These factors delay ordering until a given date or a given order level has been reached. Such factors may well produce irregularity in the ordering by individual companies, but aggregation to the total industry level probably would smooth out most of the resulting irregularities.

Of greater importance in relation to total industry movements are the inflationary situation, fear of shortages, and the influence of infrequent price changes. A conservative attitude of the American businessman with regard to inventory control would appear to have been in effect since the early 'twenties. In general, orders may have been placed for the purpose of producing inventory profits only to a very limited extent. Fear of shortages, a frequent accompaniment of inflationary movements, would appear to be a much more important factor. This may lead to a skyrocketing of orders, widely out of line with expected sales volume. To avoid the appearance of exceeding requirements and to avoid placing excessive dependence on one supplier, order duplication is frequently practiced at such times.

Infrequent price changes, in the case of administered prices, may well produce an irregularity in ordering, in spite of the fact that speculative inventory accumulation is fundamentally ruled out. In case of most administered prices, reliance can be placed on maintenance of the new prices for a substantial time, and thus orders can be abnormally increased before the price increases go into effect, without running the risk ordinarily involved in speculative inventory accumulation.

Whether or not ordering is founded on as primitive an evaluation of the outlook as our analysis suggests usually to be the case, ordering represents one of the major decisions to which anticipations should lead. The declarations indicated in anticipation surveys are relatively unimportant if they have not or will not lead to decisions in placing orders. The timing of business anticipations, nevertheless, will be better indicated by surveys than by new-orders data. For, the rise in new orders may actually represent provision of needs for a longer period into the future rather than expectation of higher levels of activity in the near future. Similarly, net new orders, i.e., gross new orders minus cancellations, which is the only form in which new order data are now available, may obscure anticipations for the near future. The cancellations may not refer to near future needs while orders currently placed are likely to do so in a recessionary period. Another difficulty, principally limited to prosperous times, relates to the refusal of companies in some industries to accept orders for delivery for more than a few months in advance. After such companies are booked to full capacity for the established period for which orders for delivery are accepted, the order books are closed. For some time thereafter new orders may reach a very low level in the industries concerned even though anticipations may remain high.

Firms may decide to place orders because of business anticipations of expected activity, but they may also place orders to an excessive extent because shortages are feared, or at times because of the speculative building up of inventories, and they may fail to place orders in contraction until inventories have been substantially reduced. There does not appear to be any simple way by which these influences could be eliminated so that the remaining movement of new orders would represent business anticipation of activity changes. However, the complicating factors are largely limited to certain times, while at other times new orders may be expected to represent business anticipations somewhat better.

Additional difficulties derive from restrictive action of the firms receiving orders. Such firms may, in some industries, change administered prices, and thereby influence the placing of orders. They may close order books at certain times, and thus temporarily strip new order data of all meaning for the time being. They may exert

considerable influence on the level of unfilled orders by the order cancellation rules they establish.⁵⁷ The influence of these factors is understood even less than those complicating the decisions of firms placing orders. Studies of the influence of these factors are badly needed.

In many of the nondurable goods industries where no new order data are available, anticipations somewhat similar to those shown by new orders may be developed by a comparison between operating rates, current sales and inventory changes. If improved sales prospects are anticipated inventories may be increased, and under opposite conditions they may be decreased. Allowance must of course be made for typical seasonal changes made in inventories in the industries considered.

New orders better represent individual-company and industry business anticipations than other series discussed in this chapter, for the data represent decisions made in individual business organizations. Some doubt may be expressed as to their representation for total industry. They principally represent manufacturing of durable products. Aggregation for total manufacturing involves adding in sales for many of the nondurable goods industries. This leads to the question of whether or not the meaning of new orders varies substantially between industries. In the industries where new orders and sales are assumed to be identical, will not times be found when there is a considerable lapse between placing and filling orders? Again, are there differences in cancellation privileges between industries so that the same market conditions would produce more orders in the one industry than in the other? All industries do not follow the same practice in closing order books after plants are booked to full capacity for a limited period, and for this reason total new orders for all industry may not be very representative under highly prosperous conditions.

Unfilled orders would appear to be inferior to new orders in indicating business anticipations. Much of the unfilled order total relates to previous rather than to current conditions, although it is true that large orders previously placed may restrict the placing of additional orders. Businessmen, however, not infrequently are guided

⁵⁷ Since Department of Commerce new order data are derived from sales and unfilled orders, new order series in the *Industry Survey* are equally affected.

more by the backlog on the books than by orders currently received. But if the data are to represent current business anticipations, action currently taken in placing orders would appear to be more representative. Of course, very low current orders resulting from filled order books would be very unrepresentative.

Important order data are currently reported in the Department of Commerce *Industry Survey*. These figures relate principally to durable manufactured goods industries, although data are reported for 5 nondurables industries.⁵⁸ From the point of view of representing business anticipations, we hope that it may be possible to study the influence of some of the factors noted above on the movement of the new orders series. *Notably, we need to know whether cancellations and order limitation exert important influences.* Since new orders data are mechanically derived from sales and unfilled orders, progress in studying the influence of cancellations on new orders has been slow. Study of the influence of order limitation would involve segregating orders for those industries or companies which follow the practice of not accepting orders after order books are filled.

In the *Industry Survey*, the monthly data on new orders are derived by adding monthly sales estimates to changes in unfilled orders. A rather similar procedure is employed by the Federal Reserve Board in deriving new orders of department stores; receipts of goods are added to reported changes in outstanding orders. The Federal Reserve Board Series on New Orders and Outstanding Orders of department stores is published in terms of the dollar amount developed in the reporting sample. The principal reason for not showing the figures blown up to the universe level apparently relates to the deficiencies of the sample—notably, reports on outstanding orders are not received from national department store chains. More analytical information is needed on the department store Outstanding Orders and on New Order series. A careful evaluation of the adequacy of the sample is needed. Seasonal factors make timing interpretation very difficult; an analysis of the seasonal movements on whatever feasible basis would be helpful. Information is needed on any technical factors which complicate

⁵⁸ Textile-mill products, leather and products, paper and allied products, printing and publishing, and petroleum and coal products.

the changing picture of anticipated demand the new orders figures show.

Construction contracts awarded, as reported by the F. W. Dodge Corporation, represent another valuable type of order data. These are reported in some detail in terms of number, floor area and valuation of projects. The irregularity shown by these series arises to a substantial degree because projects mature somewhat erratically to the contract stage. Apparently there is no effective way to include projects where contracts are held up by minor technical factors. The data include contracts for 37 States east of the Rocky Mountains. Rapid growth on the western coast makes inclusion of the omitted States increasingly desirable. Another technical matter arises from the fact that force-account work is included only when executed with materials earmarked for specific projects at the time of purchase. It would be desirable to know something about the exclusion which results from this treatment of force-account work. It would be helpful to contrast the timing of the various major contracts awarded series, both as to type and unit of reporting, to develop an authoritative picture of the differences in timing displayed.

While it is to be noted that construction contracts awarded do not develop quite the same technical problems as manufacturing durable goods industries, the problems are similar, and it was because of this that the inclusion was made here. Like excessive ordering of goods when shortages are feared, construction projects are planned for longer lead times under highly prosperous conditions. Probably a speeding up occurs in the placing of contracts when price rises are foreseen for the near future. The drying up of construction contracts in severe contractions is similar to the drying up of orders for goods, and the continued construction activity is similar to the higher rate of sales of goods, relative to new orders, which occurs at a comparable time. There is less similarity relative to speculative building up of inventories, but the contrast in this case gets into the comparison of expectations in connection with shorter-run activity and expectations relative to capital formation, which we find necessary to bypass in the present report.

Three of Moore's 8 selected leading indicators are new order series: Department of Commerce new orders for 5 durable goods industries, residential building contracts on a floor space unit, and

commercial and industrial contracts on a floor space unit.⁵⁹ Counting each of the durable goods industries separately, average leads at 25 industry reference peaks were 6.9 months and at 30 industry reference troughs were 4.7 months. Leads occurred at 21 of the 25 peaks and at 24 of the 30 troughs.

For F. W. Dodge residential building contracts, measured on a floor space basis, an average lead of 6.2 months is shown for 5 reference peaks and of 4.5 months for 6 reference troughs. Leads occurred at 4 of the 5 peaks and at 5 of the 6 troughs. For the F. W. Dodge commercial and industrial contracts on a floor space basis, an average lead of 5.2 months is shown for 5 reference peaks and of 1.7 months for 6 reference troughs. Leads occurred at 4 of the 5 peaks and at 4 of the 6 troughs.

Since the evidence on leads pertains largely to durable goods industries, some careful work is needed to determine whether similar leads occur in the nondurable areas. The importance of such a project relates to the fact that the nature of durable goods industries tends to make for an early movement in all processes connected with them and to the fact that forward ordering is less prevalent in nondurable goods industries. *A careful comparison should be made of the movement of new orders in durable goods manufacturing industries and of construction contracts awarded with the movement of new orders in those nondurable manufacturing industries which report new orders and of new orders by department stores.* As an experiment, it might be helpful to try to develop a series showing some of the characteristics of new-order data in some of the nondurable goods manufacturing industries which do not report new orders, by adding inventory minus normal seasonal inventory to sales. (Because of the difficulties, we doubt that any immediately useful information would be forthcoming.)

Forward investment commitments. Forward investment commitments represent orders for investment funds which have been booked and presumably are timed with or precede investment plans. Thus an intriguing area of anticipatory data is represented. It is very possible that satisfactorily developed information on such commitments might show longer leads and be as reliable as plant and

⁵⁹ Moore, *Statistical Indicators of Cyclical Revivals and Recessions*, Occasional Paper 31.

equipment anticipations. The field is very new, however, and development of the data are in an experimental stage.

Two types of commitments should be distinguished. Very recently unpublished information on investment commitments of life insurance companies has become available. For a longer period data have been published on funds obtained from security issues.

Investment commitments of life insurance companies have been compiled by the Life Insurance Association of America. These data remain unpublished but are furnished to all government agencies which have a legitimate interest in them. They show new commitments made during the month, total commitments outstanding at the end of the month, commitments taken down during the month, and the commitments expected to be taken down within the next 6 months. The data are broken down according to major types of commitments, including State, provincial and local securities, public utility bonds, railroad bonds, business and industrial bonds, business and industrial mortgages, mortgages on real property for lease or rental, farm mortgages, and nonfarm residential mortgages broken down into FHA insured, VA guaranteed, and conventional. Nonfarm residential mortgages represent somewhat less than half of the total.

New commitments during the month move most sensitively, but with great irregularity. The commitments outstanding at the end of the month represent a type of backlog, and, taken together with figures on commitments expected to be taken down within 6 months, represent an important forecast of near-future investment activity.

The use of investment commitments as anticipatory data partly relates to the extent to which plans for construction and equipment expenditures are represented. As noted above, it is very possible that such information will perform as well as or better than measures of direct anticipations of construction and equipment expenditures. Because of weaknesses of the present commitments data, outlined more fully below, such a performance cannot be expected in the near future. The problem of construction and equipment expenditures lies largely outside the area of our assignment and therefore we do not press the comparison at this time.

There are other types of anticipatory questions to which these data relate. Commitments may be held to reflect the mood of decision makers; it may be held that the level of anticipations reflects general business anticipations. Certainly, commitments are made more freely when an improving level of sales is expected, but needs for the types of capital to which investment commitments relate depend on many other factors—the supply situation, level of present investment stocks and others—so that it is not clear that investment commitments clearly represent general business anticipations.

Investment commitment data may throw some light on demand and supply forces in the money market. The Life Insurance Association of America compares the current ratio of investment commitments to cash flow. As the commitments rise in relation to the cash flow of the insurance companies an increase in demand for money in relation to supply is indicated. The result may be rather roundabout as a measure of anticipations, but it should be helpful in anticipating changes in interest rates and changes in money market conditions.

New investment commitments represent the initial end of the capital formation process. An important indication of momentum over the business cycle would be provided if data also were available on the amount of capital completion as a contrast. This is true because large expenditure on investment compared to investment completed is highly inflationary while small expenditure on investment compared to investment completed is highly deflationary. Current construction reports are supposed to represent capital put in place and reported equipment expenditure must approximately represent delivered equipment, so that the movement of new investment commitments might be contrasted with durable capital expenditure to indicate the type of inflationary force here noted. *We recommend that explorations be made to see if new investment commitments can be employed as measures of the starting rate of capital formation to contrast with a completion rate otherwise derived.* The result should be highly useful in judging the momentum of a contraction or expansion, although it may not provide a measurement of anticipations as such.

The Life Insurance Association of America report on Forward Investment Commitments of Life Insurance Companies is compiled

by its research staff. The report has been made since 1951. It is compiled monthly. Originally the commitment figures represented about 85 per cent of life insurance assets and now they represent about two-thirds of the assets. Life insurance companies are estimated to account for slightly over 22 per cent of mortgage commitments. Probably life insurance companies represent the most sensitive segment of mortgage commitments.

We know of no investment data other than those compiled by the Life Insurance Association which are currently reported at the present time. The National Association of Mutual Savings Banks compiled information on savings banks mortgage loans and commitments in 1951.⁶⁰ Reports were received from 464 mutual savings banks. The request emphasized "out of State" lending of these banks, so that the tabulation was not complete regarding commitments of the banks within their own States. Nevertheless, just short of a billion dollars was reported in commitments compared with a total of nearly 6 billion in mortgage loans outstanding. In view of the indicated importance of investment commitment figures, *we strongly urge that mutual saving banks and savings and loan associations be encouraged to provide current reports on mortgage loan commitments.*

As a contrast, we may cite Canadian experience in developing another type of data. Series are developed for Houses Started, Completed, and Under Construction.⁶¹ The Under-Construction figures differ from anything available in the United States and might be considered another approach to the kind of problems on which mortgage loan commitment figures may lend aid. From 1947 to early 1953 an Index of the Value of Construction Work on Books but Not Yet Completed was made available by the Dominion Bureau of Statistics, but has been discontinued.⁶² This Index might also be held to represent an attempt to get at the kind of problems on which investment commitment figures can throw light. However, the commitment figures should provide earlier information and may be easier to develop.

⁶⁰ See *Bulletin G 25*, Apr. 25, 1951, National Association of Mutual Savings Banks, 60 East 42nd Street, New York 17, N. Y.

⁶¹ See *Housing in Canada*, Central Mortgage and Housing Corporation, Economic Research Department, Ottawa, issued quarterly.

⁶² The most recent report entitled "Appraisal of Construction Prospects," was issued by the Dominion Bureau of Statistics, Apr. 1, 1953 (at the time it was marked "Confidential.")

If data on commitments were available from life insurance companies, mutual savings banks, and savings and loan associations, the sensitive areas of housing and real estate mortgages would be covered, but only a slight representation of general securities, flowing from the life insurance companies, would be included. To cover other areas of fund commitments the best we can do is resort to data on security issues.⁶³ The most important information on new security issues is provided by the *Commercial and Financial Chronicle* and by the Securities and Exchange Commission. While there are several differences in coverage, in methods of estimating dollar amount of issues, and in classification, the various types of security issues are well covered by both series. Mention may be made of reports on State and municipal security issues by *The Daily Bond Buyer*, principally because of coverage of short-term loans to State and municipal governments, which are omitted in the *Commercial and Financial Chronicle* series.⁶⁴

Security issues represent fund commitments generally in other areas much as do loan commitments. There are, of course, some differences. Probably the loan commitments generally relate to new money while refunding issues are included in the series on security financing. The security issues relate to offerings which are at a stage in financing approximately comparable to that of loan commitments. Some small part of the security issues remain unsold, principally covered by nonunderwritten issues of small companies. It is estimated by the investment research staff of the Life Insurance Association of America that the rate of attrition on mortgage loans is about 10 per cent, possibly somewhat greater than the usual percentage of unsold security issues.

We recommend that an effort be made to develop an aggregate series on loan commitments plus security issues, with major sub-

⁶³ Several leads were followed to study market conditions relating to security issues. Although claims have been made that the Securities and Exchange Commission constructs price indices for new security issues and measures the volume of sticky new issues, we were assured that no such information is now available. Shields and Company report on the changing price of new security issues, but do not summarize in index form. Some work is getting under way on security issues cancelled and postponed, but the efforts do not appear to have matured far enough to make an effective evaluation at the present time.

⁶⁴ The *Daily Bond Buyer* series is an included classification in the Securities and Exchange Commission series beginning with 1952. The technicalities of these series can be studied from descriptions obtainable from the issuing agencies. A good summary and contrast between the series will be found in *Business Statistics: 1953 Biennial Edition*, Washington, U. S. Government Printing Office, 1953, pp. 235, 236.

classifications, from data now being collected, together with additional information above recommended on loan commitments. Care should be taken to study seasonal movements of the various parts of the aggregate looking toward providing seasonally corrected data since some parts of the proposed aggregate are apparently influenced by seasonal movements. We believe that such a series would have important potentialities in producing the types of indications suggested above.

Moore obviously did not include loan commitment data because they were unavailable at the time of his study. Similarly Securities and Exchange Commission data are available only since 1934. Although the *Commercial and Financial Chronicle* data are available from 1919, it is possible that incompleteness and various statistical deficiencies may have reduced timing effectiveness in early years. In any case, we should obtain information on the timing pattern of integrated loan commitments plus security issues. It was found by the research staff of the Life Insurance Association that new commitments showed a long lead in relation to the upturn in 1954.

Other contracts; budgeted expenditures. Various other types of future contracts represent logically desirable types of inferential data, for they represent formulated plans of action. However, we do not know of any particularly useful series of this sort which in practice has appeared to possess promising potentialities.

Also, budgeted expenditures appear logically to be a promising area. In this connection a distinction must be made between types of budgets under consideration. Operating (variable or flexible) budget data may not be particularly useful, for the purpose is often one of coordination in accordance with past relationships and no attempt may be made to employ expected figures on sales, etc. The capital or fixed budget is a different matter. It represents an effort to adjust to expected levels of sales, but, since it relates to capital expenditures, it may not always be too much concerned with near-future sales. *Nevertheless, the logical attraction of budgets as inferential data is so great that we recommend that a survey be conducted to determine the type of inferential information which could be obtained by a compilation of budget figures.*

Moore did not include data on budgets or miscellaneous contracts in his table of selected leading indicators because no important series of this sort were available.

Sensitive price indexes; other prices. Prices may represent the information on which business men place the most reliance in formulating anticipations. This may be true in spite of the fact that they well recognize that "administered" prices, on some types of manufactured products, have only limited value in reflecting current business conditions. Prices set in bid and ask markets are taken to represent demand. Order data probably are the other most important type of information employed by businessmen in deciding what the demand situation is. The businessman's visualization of demand by use of these series may almost completely determine his anticipations.

Price data not only reflect business anticipations but they also play an important role in the formulation of anticipations. In administered-price markets, price changes, when made, reflect anticipated changes in demand. Purchases and sales in bid and ask markets reflect the expectations of buyers and sellers.

There are, however, many price changes which the businessman would not consider positively correlated with demand anticipations. "Administered prices" frequently move with cost changes, and movements in these prices are not necessarily looked on as indicative of future demand. In the bid and ask markets price changes are sometimes the result of changes in supply conditions, and such changes would not be considered indicative of prospective demand. Since it is difficult, if not impossible, to segregate such price changes from other price changes, there is considerable uncertainty regarding the value of price changes in reflecting business anticipations.

In this discussion we are considering price changes as a reflection of anticipated future demand, and not as a reflection of future prices, as involved in the concept of elasticity of price expectations. If business anticipations are taken to represent expectations of future prices, rather than expectations of future activity, the elasticity of price expectations would be the germane concept.

The most important measure of prices from the point of view of anticipatory data is what has been called a "sensitive price index." At the present time, it is best represented by the Bureau of Labor

Statistics Index of Spot Market Prices (formerly called the Basic Commodity Price Index). Commodities only in highly competitive and very wide markets are components of the Index. Moore included this Index in his list of selected leading indicators.⁶⁵ He found an average lead of 2.6 months at 11 reference peaks and 3.2 months at 11 reference troughs. Leads occurred at 7 of the 11 peaks and at 8 of the 11 troughs. We suggest that a better lead might have been found if the price changes included had more consistently represented only changes in demand. *We suggest the desirability of studying the changes in the 22 individual commodities now represented in the Index to determine the extent to which changes principally due to supply factors could be isolated and the extent to which the removal of these changes would improve leads in the Index.*

The prices of used durables are somewhat analogous to series included in sensitive price indexes. Markets for used durable commodities are highly competitive. The sale of such commodities is critical in clearing the markets in the specific industries to which they are related. The prices of used cars and of old houses have attained particular prominence in this respect. Used car prices are frequently held to gauge the prospects for sale of new cars. A price series is developed by *Automobile Age* from prices recorded in car auction markets. Data are available for only a short period and we are not familiar with any study made of their reliability. In view of the attention which has been given to this series in the automobile industry, we recommend that careful study be given to the timing and reliability of the series.

Price series on other used durables are less well developed. In the case of old houses, no markets like car auctions are available from which an index may be readily developed. Furthermore, disposal of such houses apparently is less urgent than it is in used-car markets. Of particular relevance in this connection is the fact that a frequent accompaniment of declining old-house prices is a slowing down in the rate of transfers. Prices of other used durables, such as of machine tools, may be worthy of consideration, but experience is too limited to warrant broad generalizations. For the present the

⁶⁵ Moore, *Statistical Indicators of Cyclical Revivals and Recessions, Occasional Paper 31.*

best attack would appear to center attention on used-car prices as the most promising case.

Future prices paid on organized commodity exchanges have frequently been suggested as anticipatory data. A logical position can be made for this suggestion because highly competitive markets are involved and the future prices represent the combined effect of markets set by professional dealers. Holbrook Working and others, however, have found that future prices of some commodities forecast prices very poorly. Part of the difficulty, no doubt, is a speculative fluctuation which is exaggerated in such markets; thus underlying movements are difficult to see because of the resulting irregularities. More important, however, may be the fact that many dealings in commodity futures intentionally involve no effort to anticipate future prices, but rather merely represent hedging operations. If a major part of the decisions involved actually do not represent even a minimum attempt to judge future prices, future prices might very well be of less anticipatory value than spot prices. The Dow-Jones Company reports an Index of Commodity Futures, based on the 5-month futures of 12 commodities: cotton, wheat, sugar, corn, coffee, rubber, wool tops, cocoa, oats, cottonseed oil, hides and rye. It might be advisable to study the timing movement of each of these commodities and of the combined index as a check against the kind of conclusions here noted.

Broad wholesale price indexes seem to have little anticipatory value, while the Consumers' Price Index tends to lag behind broad wholesale price indexes and to move even more sluggishly.

Length of workweek. A major method by which production is adjusted to quick changes in demand is by shifts in the length of the workweek. If production declines, an employer is reluctant to lay men off inasmuch as he is unable to make a clear projection of demand. He finds it desirable to make some adjustment to the decline in demand which he sees taking place, and the least costly adjustment to an uncertain future is a reduction in working hours. If production rises rapidly he can make a quick adjustment by adding to hours of work. By this scheme labor relations are less likely to be disturbed and the costs of dropping from and adding to the labor force are substantially reduced.

In other words, it seems plausible that a nonseasonal divergence

from standard hours reflects a divergence of manhours used from those planned when staffing decisions were made. When working hours drop there is an inference that current output is below scheduled output. When working hours increase the inference is that production schedules are being revised upward.

Moore included the Bureau of Labor Statistics Average Hours Worked Per Week in Manufacturing in his selected list of leading indicators.⁶⁶ He found an average lead of 3.8 months at 4 reference peaks and 2.6 months at 5 reference troughs. Leads occurred at 3 of the 4 peaks and at 3 of the 5 troughs. Moore's table carries the data only to 1938, and more recently this indicator has established a more impressive record of timing. It has therefore attracted much attention. Actually, the good empirical record plays a large part, although the rationalization stated above is sound.

Employee accessions. The National Bureau of Economic Research has found recently that the statistical record of the Bureau of Labor Statistics Accession Rate in Manufacturing Establishments is about as good as a leading indicator as the Length of the Workweek series. This result is less readily argued as an adaptive adjustment to an uncertain future. If one accepts the predominant weight which the post World War II record may have played in the development of this favorable judgment, it may be more understandable. The business atmosphere has been generally expansionary and quite optimistic. Few mistakes have been made in major companies by adding too many new employees. Under these circumstances, adding employees may have come to appear as a conservative adjustment, and slackening of demand frequently has only slowed down the accession rate. As soon as possible in the recession period companies may have attempted to take advantage of the easier labor market to raise the quality of employees. *It is important that a careful check be made of the influence of the postwar period in the tentative good rating being given to the accession rate as a leading indicator*⁶⁷

It may be noted that, at times, accession rates may aid in the interpretation of the length of the workweek. If businessmen should

⁶⁶ Moore, *Statistical Indicators of Cyclical Revivals and Recessions, Occasional Paper 31*, p. 64.

⁶⁷ An important contribution to this task by Geoffrey H. Moore appears in the *Monthly Labor Review*, March 1955.

sense the likelihood of a downturn, they might be expected to check accessions and let the last phases of the upswing be covered by abnormal hours. If the tightness of the labor market is controlling, such a judgment could not be clearly developed, however.

Money turnover. A change in the rate at which funds are spent no doubt is a first reaction to changes which occur in demand. On the basis of this thinking, money turnover would appear to provide useful anticipatory data.

There are, however, major difficulties. Business spending cannot be effectively segregated from consumer spending, although consumer spending moves with more inertia, and therefore quick reactions in business spending may be difficult to portray in actual money turnover data. At times, changes in business spending may be less a reaction to changed anticipations than to the shifting requirements of spending programs long since initiated or to the completion of such programs. Deposit turnover will reflect all sorts of payments, intermediate as well as final, and the complicated timing of these various types of payments may substantially disturb the rate of money turnover. For instance, a change in the extent to which component parts are bought from other suppliers will exert an important effect. Even if business anticipations are well reflected in the money turnover of business funds, doubt may be expressed regarding the pattern; there may be an inconstant lag of business spending after decisions to spend.

The problems indicated in the above paragraph are so complicated that we do not feel it desirable to try to segregate the anticipatory influence at the present time. *At most, some attempt might be made to depict more clearly the timing of deposit turnover figures as shown by available data.* Claims are frequently made that a substantial and effective lead is found, and it would be desirable to refute or confirm such claims. If the claims are confirmed by empirical studies, it might be wise to reopen the question regarding the causal factors at work.

Moore includes deposit turnover in his master list of 75 leading indicators, and presumably this indicates he found satisfactory empirical evidence of good leads in the data.⁶⁸

⁶⁸ Moore, *Monthly Labor Review*, March 1955, p. 93.

Contrast of various inferential measures of business anticipations. Considering the many possibilities listed above, conclusions with regard to the most promising ones are very desirable. The first decision to make involves limiting the processes to be considered to the ones which are thought to be worth careful development. We have indicated our broad position on this point in each of the above discussions.

As the discussions indicate, it is our position that, in nearly every case, the promise which can be stated depends on the outturn of recommended preliminary developments. Any recommended list is contingent on the showing found after preliminary stages of investigation. We might say, however, that with present information, we look with particular favor on forward investment commitments, business births, business deaths, and length of the work-week. Special attention certainly should be given to new-order and unfilled-order data because of the inherent advantages such data possess, but, because of complicating factors, our recommendation must be qualified at the present time. We believe that sensitive price series and used-durable goods prices should also be noted for special investigation. Summarizations of this sort, however, are quite inadequate, and reference must be made to the fuller statements to obtain a clear picture of our position.

Having agreed on a list of indicators thought to be worthy of further study, a careful comparison might be made of the timing of each of the measures at the turning points in general business conditions for a considerable period into the past. From an analysis of the differences in timing at various turning points some further insight may be developed on the utility of the various measures.

Decisions regarding the validity of the measures cannot be left entirely to developed timing experience and rationalizations suggested by the empirical data. Fundamental decisions must be made on acceptance or rejection of the measures as indicators of anticipated business action. Crude generalizations on effectiveness as measures of anticipated action are made above. If much use is to be made of inferential business anticipations contrasts relative to these generalizations will need to be elaborated. We doubt that such a step can be justified until more has been done along the line of developing the empirical history.

Contrast of inferential and direct measures of business anticipations. The development of information on the processes by which anticipations are formed is the key to the development of procedures for contrasting direct and inferential measures of business anticipations. If we had more information on these processes it would be much easier to draw conclusions regarding the kind of action to which anticipations are tied. With a better understanding of the way actions flow from anticipations, series reflecting various types of action would become much more meaningful as anticipatory data.

The advantage of direct measures is that there is less doubt regarding their relation to business anticipations. As noted at the beginning of this chapter, direct measures may be provided carelessly, by uninformed persons, and possibly somewhat inarticulately. By improvement of the survey these difficulties can be largely corrected. Until we know more about the processes by which anticipations are formed, however, there is always the possibility that the direct surveys may actually do little more than reflect observable data.

Most of the inferential measures represent aggregate effects, while the actions of individual businessmen cannot be represented as effectively in inferential measures as in direct measures of anticipations. The chief exception occurs in order data, because the total in this case is the compilation of individual orders. In such measures as stock or commodity prices there is of course little possibility of tracing individual business decisions. The ability to segregate individual decisions probably will represent an important leverage in developing the processes by which anticipations are formed.

In drawing judgments regarding the relative advantages of inferential and direct measures of business anticipations the extent to which reliable leads have been provided is certain to be given great weight. While effective performance undeniably is the ultimate objective, chance factors may play a large part during a short span of history, not only in a statistical sense but also in relation to shifts in the character of guiding forces from one time to another. For instance, some measures perform better in relatively depressed periods while others perform better in relatively prosperous periods.

This situation should throw additional light on the critical importance of the processes by which anticipations are formed. The attunement of measures to these processes is the most critical question.

VI. HOW BUSINESS EXPECTATIONS ARE FORMED

In this chapter we consider how "expectations" are formed, and their influence on production plans or schedules, on inventory policy, on capital budgets, and finally on actual production and output. One is immediately impressed by the complexity of the subject. At each link in the chain of causality between "expectations" at one end and output or use at the other, there is tremendous multiplicity and diversity in the factors which exert an influence on the result.

In view of this complexity it is not surprising that there exists no systematic quantitative information on the relationship between inferential measures of expectations and expectations themselves. The fact that direct measures of expectations are in their infancy makes this inevitable. Until expectations can be measured directly it is difficult to say much that is precise and reliable about what an inferential measure of expectations really implies about expectations directly held. It is perhaps more surprising—if only because inferential measures have been used so long by so many forecasters—to note how little of a precise nature is known, beyond the exploration of leads and lags, about the relation between inferential expectation series and the actual course of events.

That little is known about the accuracy of direct measures of expectations is due, in part, to the fact that they have become available only recently. As one of the witnesses before the Committee wisely observed, decision-making is a complex social process and the very methods of discovering businessmen's expectations are in an exploratory stage.

The initial postwar investigations of the accuracy of expectations and forecasts were discouraging. They seemed to suggest that there was little connection between what businessmen expected and what happened at the critical turns of business. The most recent studies are somewhat more encouraging in that they suggest that direct measures of expectations do have inherent forecasting value and may be capable of giving us at least some advance warning of impending economic change. We should not forget, however,

that a first attack on a complex subject has only just begun. Direct measures of expectations are still few in number, and not all of these have been intensively analyzed.

* * *

Expectations play a variety of roles and are subject to a variety of institutional forces, aside from those economic ones which play upon them or those others to which they pertain. So far as expectations of an individual firm are concerned, they are influenced by type of industry or activity, size of firm, the place of the firm in the industry, and its organizational structure. Where "expectations" merge into or become "forecasts," they will be influenced by the type of operation being forecasted, the purpose of the forecast, the skill of the forecaster, his place and influence in his firm, and the adequacy or inadequacy of his forecasting method.

If there are a multiplicity of ways in which the role of expectations can vary from one industry to another, so too can expectations vary from firm to firm within an industry. Of the many possibilities, there are two which deserve special comment. The first is size of firm and the second is the organizational structure of the firm itself. Both of these, in industry at least, have important bearings on how expectations are formed.

In the small firm the formulation of expectations may be identical with the process by which ordinary individuals of varying character and abilities form their "judgments" concerning business affairs. In some cases pure "hunch" may prevail; in others, judgment, skill, experience and study may be applied to a flow of relevant factual information.

At the other extreme, in large industrial corporations for example, the process of forming expectations may be very complicated, involving quite literally hundreds of people many of whom are specialists of widely varying experience, training and interest. The process itself will depend to a considerable extent on the organization of the firm and its policies with respect to the centralization or decentralization of initiative and control. In a large firm practising decentralized control, for example, the "expectations" of the firm may be based upon and primarily determined by forecasts which are made largely at the local level with a minimum of

coordinating action, review or adjustment by a centralized staff and "top management."

It appears to be a common procedure among large business firms to initiate market forecasts twelve to eighteen months in advance by providing lower echelons with a letter or memorandum outlining in very general terms what assumptions are to be used in developing the forecast. Such assumptions will usually pertain to the expected state of the economy as a whole, the industry, and perhaps to the firm's own policies, in the field of marketing for example.

These assumptions are likely to be very general. Lower echelons are often allowed a great deal of freedom to depart from them if the local situation appears to warrant. Since the methods of economic forecasting are far from standardized, even without varying assumptions it is possible to obtain a good deal of variation in the final forecasts. All these factors permit a great deal of flexibility and variation in the final results and a great deal of variation in the size of forecasting errors from one part of the organization to another. Where forecasts are initiated by salesmen as is often the case, consolidated, reconciled and adjusted by local sales managers, reviewed and readjusted by district or area offices, and finally integrated and modified by a central staff, it becomes uncertain just whose "expectations" are represented in the final result. Actually, of course, the final result is a composite of many views.

Where salesmen and sales managers are responsible for forecasts, the role of the forecast itself may become somewhat blurred. There may be a tendency to be "conservatively" low in order that sales goals may not be too high. On the other hand there may be tendency to bias forecasts upward in order that the sales force may be "kept on its toes." Whether these tendencies exist and what influence they may have are likely to depend on the policies of the higher echelons, "top management," with respect to their subordinates and on the degree of trust and respect between different levels.

Where a forecast ceases to be a pure forecast and merges into a "goal," the distinction between the two may become blurred. A forecast may be constructed primarily as a forecast but the border decisions on assumptions, approximations, and estimates may be

influenced by the role the forecast is believed to play. In retrospect, the importance of these border decisions may be very vague even in the mind of the forecaster.

In a large business firm what corresponds to an "expectation" may be a forecast which is the product of many persons operating within an institutional pattern and an organizational structure. It does not follow that a forecast is an "expectation" in a meaningful sense. Witnesses informed the Committee that some industries prepare four or five different "forecasts" covering intervals of time ranging from a few months to as much as 25 years. "Forecasts" covering 5, 10, 15, 20 or 25 years may be useful primarily as background material, providing at most a general framework for long-range thinking and planning. The extent to which such "forecasts" are "expectations" depends on whose "expectations" one is considering, how much faith is placed in the accuracy of the "forecast" and the role assigned to it in planning and policy. In one situation such a "forecast" may play a role in a complicated organizational structure analogous to an "expectation" in the mind of a small businessman. In another it may play no such role at all. Indeed the same forecast may do both at different times or in different circumstances.

While it appears to be a common practice of large industrial concerns to base short-run forecasts or even forecasts up to four or five years on estimates, opinions and forecasts at or near the "grass roots" level, such a procedure is not a necessary one. It would be possible to centralize even the short-run forecasting function just as the preparation of long-run forecasts or "outlooks" covering up to 20 or 25 years ahead are usually centralized now. Between the extremes of simple consolidation of "grass roots" forecasts and full centralization of responsibility in the higher echelons there is a wide range of possible variation in practice. Higher echelons may have the duty of modifying slightly or greatly, or both in varying circumstances, the forecasts of lower echelons. When the forecast of a large company is finally completed through organized activity which may be fairly intricate, it may be nearly impossible to say precisely whose "expectation" it is. It is the product of a machine of which various experts, specialists and administrators are the moving parts.

The analogue of this process in the small firm or individual proprietorship may at times be nothing more than the intuitive formulation of a more or less studied and well-founded judgment. Decisions may be based on such intuitive expectations concerning the future of individual products, the firm, the industry and the national economy. Or they may be based upon these and a consideration of many other factors including future supplies and costs of raw materials, the local labor market, the tactics and objectives of labor unions, and the probable future behavior of competitors.

In the large firm, with world-wide interests, an economic forecast will cover the future of several national economies, the future of the industry as a whole and in individual countries, the future of the firm in general and in particular areas, and the future prospects of the demand and supply of each type of product, raw material, labor skill and capital facility. In varying degrees of detail or consolidation it may pass through the hands of one or more reviewing bodies until it reaches a "top management" executive committee or board of directors. There, if not before, it will become one of many contributions to the influences which will determine one or more final decisions, "final" only in a relative sense if policy is flexible. Among the considerations, other than narrowly "economic" ones, which may influence the final outcome might be the desires of stockholders, the psychology of customer relations, employee morale, the policies of labor unions, public relations, political developments and prospects in individual countries as they affect the firm and its future, the safety of the firms' investments, and even considerations of military strategy.

All these will meet in the minds of a group of men who differ in personality, background, experience and ability. The various facets of their minds will have an influence on how they jointly assess the information that comes before them from day to day. If they listen to their economists and to their industry, product, area and technical specialists, as no doubt they will, it by no means follows that they will restrict their attention to what comes to them from these sources. Their final judgment will be the composite result of all these influences. Final decisions will be the result of group action and will be unlikely to reflect accurately the "expectations" of any single individual. The interest of the group

will be concentrated primarily upon final results. It is doubtful if any individual member can say with a high degree of precision exactly which considerations were finally determining and which were incidental to the outcome even though there will be general agreement within the group on principles and the broad facts.

The difficulty of defining relevant "expectations" in these circumstances and the nature of this group-decision-process place formidable obstacles before the research worker who desires to develop an historical record of expectations for comparison with actual events. The work goes slowly of necessity and it is easy to underestimate its difficulties. There will be a need for much trial and error, much testing and experimentation, before we shall know very much that is precise and accurate about which "expectation" series are useful and which useless, which can be utilized profitably in logical or mathematical constructs, and which can be relied on for policy making and which cannot.

From this point of view the problems associated with "expectations statistics" are merely a part of the broader problem of discovering and developing good forecasting methods. The difficulties associated with the latter appear to be of the same general character as those associated with the former. And progress in the field of forecasting methodology has been unsystematic and discouragingly slow.

While progress has been slow, this fact should not be a cause for despair. There has been progress, especially in the postwar years, and there is every reason to think that the persistent efforts of scholarly minds will enable that progress to continue. Equally, there is reason for hoping that persistent research will contribute materially to our understanding of the economy and our ability to foresee the economic future in the long run. When one considers the importance of economic forecasting to the development of national policies, it seems obvious that every promising opportunity of this sort should be intensively exploited.

VII. OPEN QUESTIONS AND AGENDA FOR THE STUDY OF EXPECTATIONS

The problem of expectations is wide open for research. Already we know much more about them than was known a few years

ago: our Committee is impressed by the quantity, quality and serviceability of the expectational statistics and basic studies our survey has found. But our knowledge remains fragmentary. Both our statistics and our theorizing are reduced in usefulness by a woeful lack of background information.

Our suggestions for adapting existing research enterprises to yield more revealing evidence will be presented in our concluding chapter of recommendations. In the present chapter, we will consider the more systematic use of evidence now publicly available, the need of field studies to guide interpretation and uncover new sources of evidence, and some of the problems of developing a more useful expectational theory.

Analyses needed. A number of useful before-and-after studies have been made of operating-plan data already available. The shippers' forecasts have been analyzed by the Illinois group and at the National Bureau of Economic Research, and so have various Dun and Bradstreet series on expectations. An extension of the study of Dun and Bradstreet data by the National Bureau of Economic Research is included in this report.

These studies, however, have only scratched the surface of the data which can be obtained without any additional field research. Among the promising bodies of data for further analysis are:

- (1) Production expectations by machinery producers, for four quarters ahead, used by *Fortune* as a basis for plant-and-equipment-installation forecasts. These figures should be very revealing if analyzed from another point of view—as operating intentions of the producers.
- (2) Oil-production "allowables" in Texas and other states reflect inferential expectations for oil sales.
- (3) Ward's Automotive Reports: production schedules for cars (weekly, monthly and sometimes quarterly).
- (4) Builders' forecasts of their own home-building activity by half-years—another series successfully assembled and used by *Fortune* to forecast capital-goods activity, which could profitably be reanalyzed as operating plans of the producers.
- (5) The shippers' forecasts, which need reanalysis. Analyses so far have been chiefly of interwar data; but such indicators as the iron-ore study in Appendix B below suggest that postwar plan-

ning has become much more coherent. Besides studying the forecasts as prognoses of freight-cars needed, economists could profitably examine its components as indicators for various industries (as the Illinois group has done with shippers' forecasts for cement), and consider reweighting the components into a forecast of industrial production.

A number of such studies can be fruitfully undertaken by single researchers or by research teams without extensive facilities—in contrast to the field-research jobs sketched below, which call for powerful group efforts.

Operating-plan complex. Both in our report and in the research enterprises that yield our expectational statistics, expectations are dealt with piecemeal. Investigators do have a healthy tendency to get several items of information from each informant. But the tabulation of this information does not enable us to relate these items.⁶⁹ And at best, they cover only a few aspects of business planning.

It might be more fruitful to put a good share of available research resources into studies of the whole operating-plan complex—the interrelations of expected sales, output, price, cash receipts, inventories, orders, employment, procurement, cash disbursements, cash balances and borrowing—at individual firms. Such studies could give us a reliable impression of how coherent forward planning of operations is in various sectors of the economic system, and which elements of the operating-plan complex are likely to have the most symptomatic importance.

From fragmentary knowledge, we can say with confidence that forward planning is fairly widespread, and increasingly well-coordinated within individual firms. The coherence found in Hastay's analysis of Dun and Bradstreet reports is encouraging; for these reports represent on the whole the planning of middle-size business, and indications are that forward planning is even more

⁶⁹ Cf. the difficulty of relating McGraw-Hill's data on sales forecasts and investment forecasts, examined in Chap. II. The evidence of the April 1955 Survey on intentions of manufacturers of machinery is also pertinent. On the average, these manufacturers planned to expand capacity by 6 per cent during 1955, through operating at only 72 per cent of capacity (as against a preferred rate of 88 per cent), and expecting only a 5 per cent rise in sales. Was this planned expansion concentrated among a few firms that were highly optimistic on sales? Or was it spread over many firms that were expanding in the face of less rosy sales prospects? Implications for business motives would be very different in the two cases; but we cannot tell which we are looking at!

characteristic of large than of middle-sized firms. But it takes more than fragmentary knowledge to guide the interpretation of the data we have—let alone really efficient planning of research to get data that will bear more weight.

Some pilot-project work is being done in this field. The Survey Research Center at the University of Michigan, for example, is doing some field work on business decision-making. (We still have not had a full report of the 1949-53 study at the University of Illinois.) But most field research has focussed on investment plans, and the operating complex is still not well understood.

Production planning. One promising approach to the operating-plan complex is to focus on production planning. The fact that input must precede output—being the source of forward planning—means that we may take the firm's plans for output as the center of analysis. In companies with firm advance planning, we can expect to find output of the company's chief products scheduled for weeks or months ahead; in some industries we can also expect to find the horizon of output-planning very short.

Taking the firm's production schedules as focus, sales forecasts, order and inventory targets fall into place as determinants of production plans. Employment and procurement take place as means of carrying out production schedules.

This approach calls for before-and-after studies of production plans at a number of individual firms. In such research it is of key importance to match outcomes against plans, and to reinterview executives for clues to reasons for any failure to match. Where output has come reasonably close to schedule, before-and-after study can give clues to the coherence of plans: did experience bear out estimates of input-requirements for the planned output? If not, why not? Where output has diverged from schedule, before-and-after study can cast light on the reasoning and impulses that lie behind production decisions.

For such a study of motives, neither a mere inquiry before the event about plans nor a mere inquiry after the event about results can approach the evidential values of before-and-after inquiry. Normal human beings—either in sketching their future plans or in describing their past actions—have an understandable tendency to pretty up the picture. "Good reasons rather than real reasons"

are offered in either case. But when past behavior is checked against previous plans, we have to be more objective. (This is one great merit of the use of budgets as a means of self-discipline.) Consequently a before-and-after inquiry offers a good chance of unearthing "real reasons."

A properly designed study focussed in this way might put us in striking distance of a new systematic body of statistics on scheduled production. In some industries, such an inquiry might find that production was too heterogeneous to permit any meaningful summary of intentions on production. For some industries, almost certainly, the planning horizon will be found so short that the period covered by production plans would already be past before figures could be collated. But for other industries, we can be sure that if we knew enough to make well-directed inquiries that could be reduced to a routine (using data in a form companies could readily supply) the resulting figures would have substantial forecasting value—both direct and indirect.⁷⁰

The potential value of such evidence is indicated by the widespread attention given to straw-in-the-wind evidence of this sort. The optimistic production estimates for 1955 put out by the president of General Motors at the opening of the year, for example—and the upward revision of those estimates a few weeks later—were generally viewed as key indications of 1955 prospects. The highly-valued *Fortune* forecasts of equipment installations and house construction, as was noted above, are already applications of this type of evidence. More and more systematic evidence of the same type is almost certain to prove valuable.

Cash-flows planning. An alternative focus of attention would be the firm's plans for its cash position. (In management terms, this approach would look at business planning from the perspective of the controller rather than of the production manager.) Lack of foresight in the cash dimension can cripple a firm badly. There are abundant indications that many firms have fairly definite forecasts of cash flows looking some months ahead.

While our Committee has not considered this approach as closely as the production-planning approach, it appears to have many attractions. Statistically, it might lead to a planning-in-advance

⁷⁰ On the distinction between the two kinds of forecasting value, see Chap. II.

counterpart of the quarterly working-capital statement for corporations of the Securities and Exchange Commission. As a field operation it also has advantages. Dollar flows and stocks (unlike flows and stocks of tons, manhours and the like) are quantities which lend themselves to being added up and reduced to ratios, so that prospects of finding intercomparable figures are fairly bright.

In addition, a combined study of cash-flows planning and production-planning in the same firms is likely to cast light on the way businessmen allow for uncertainty. Since the controller's office tends to be the citadel of conservatism within the firm, it has incentives to scale down optimistic estimates of sales and of price developments that may be in use in other departments. If such a scaling-down proves to be widespread—and particularly if its magnitude varies with business conditions—we may be enabled to quantify our notions about the business response to uncertainty.

Process of forecasting and decision. Economics is handicapped at present by its inadequate knowledge about the process by which firms reach forecasts and decisions. To illustrate the extent of our ignorance, consider a few questions which could be given factual knowledge if we were better provided with field-study results:

To what extent are forecasts of sales, etc., pieced together from estimates made by salesmen? What corrections are made for the salesman's probable bias?⁷¹ To what extent are forecasts bought from outside "services" or formulated by staff economists inside the company or based on hunches of key executives?

To what extent are plans embodied in documents? How far do these plans represent a consensus of those responsible for different aspects of operations, and how far an imposition of judgments by top men in the company? To what extent do plans represent hopes and aspirations, rather than sober estimates of the attainable? Is "slippage" regarded as normal, and provided for on the financial side of business planning, or are planners genuinely surprised by it?

What sort of provision is made for the systematic review of forecasts and plans? How serious must the divergence be before decisions intended as final are reopened? When forecasts and plans go awry,

⁷¹ Testimony before our Committee from one important company was that salesmen had a good record in forecasting actual use of the company's product by customers, but often failed woefully to gauge their inventory policy.

is responsibility clearly focussed? Has the company any systematic way of sorting out adverse external developments from mistakes of planning? To what extent do business forecasters and decision-makers (like some of their opposite numbers in politics) feel bound to have been right whatever happens?⁷² To what extent do they remake their image of their past intentions to cover up mistakes? And how far do they let this process upset the objectivity of further forecasts?

Another special point of interest is the interplay between those who make forecasts and decisions within a firm and a broader group of decision-makers in the firm's environment. To a growing degree, this interplay becomes conscious: witness the effort of trade unions in 1955 to influence the frame of reference of business decisions by demanding contracts for a "guaranteed annual wage." The government, furthermore, is more and more trying to influence the course of affairs by shaping expectations. An interesting test of the malleability of frames of reference is thus in process, and needs to be observed. Incidentally, the changes in process may tend to lengthen the typical period of forward commitment in business decisions, and thus lengthen the planning horizon and increase the probable value of expectational evidence.

Adaptive versus fixed-budget models. For diagnosis and forecasting, the economist cannot do without "models"—that is, simplified analogues of the forces he believes are at work. The best model to use is not always the same: it depends both on the problem at hand and on the way business incentives are channeled.

For some purposes, we set up models which picture business decisions as made by rule of thumb, or as being mechanical "reactions" to external events. The applicability of these very handy and simple models could be better gauged if we knew more about the decentralization of business decisions. To take a prominent example, we know that the reordering of items for stock is often simply a clerical operation, based on standing rules for reordering.

⁷² An interesting symptom of the tendency in politics to shy off from asking how plans have worked out is the way the columns are arranged in government budgets. The Budget of the United States compares results for the last complete year, probable results for the year just ending, and plans for the ensuing year (while the British budget compares plans for the year just ending, probable results for the year just ending, and plans for the ensuing year). Do business budgets ordinarily leave previous estimates in comfortable obscurity, or set them forth conveniently for review?

when stock reaches a stated level. Such an operation is readily represented by a mechanical-response model. But how can we tell how widespread such setups are—and above all, under what conditions the standing rules get revised?

For other purposes, the most satisfactory models are fixed-budget models which picture business decisions in terms of setting up schedules for operations up to a stated "horizon," in response to explicit market anticipations. Here again, too little knowledge of facts limits our ability to decide when such models are a good fit to our problems. What is a sensible "horizon" to assume for various sorts of decisions? In what cases can uncertainty allowances be fairly expressed by the long-used but suspect concept of "uncertainty discounts"? In what cases can they be fairly expressed by the newly fashionable notions of "focus gain" and "focus loss"?⁷³

For still other purposes, the most revealing models are those framed in terms of "adaptive behavior." Under such models, many decisions are treated (like the reorder decisions just cited) as routinized. But the key decisions are visualized as the selection of strategies for dealing with uncertain developments. Under such a strategy, when selected, a subordinate may get two bundles of instructions A and B. He will be told: "If events stay within bounds a, follow instruction A; if events stay within bounds b, follow instruction B; if events get outside both sets of bounds, report to headquarters at once for further instructions." Logically, such models are not so remote from fixed-budget models as one might think, since framing an adaptive model calls for weighing the likelihood of various outcomes, while framing a fixed-budget model calls for rules to decide when revision is necessary. But the processes of analysis are different enough to make it urgent to be able to recognize good problems for the use of each, and to know which comes closer to the way businessmen think in an industry under study.

Models and facts. At bottom, our selection and interpretation of expectational evidence rests on thinking about such theoretical "models" of forward-looking business policy. On the other hand,

⁷³ These concepts originate with G.L.S. Shackle in England. Broadly, the idea is that in valuing any one of a set of alternative policies, the decision-maker visualizes the most profitable and least probable outcomes that he would view as nonsurprising, and then he chooses among alternatives by choosing among pairs of such limiting values.

there is no way to theorize sensibly without facts: we need to design models in the light of actual business motives and organization patterns, with an eye to the way surprises come home to forecasters and decision-makers.

In short, we need better theoretical models of forecasting and decision to guide the collection of facts about expectations; and we need more and better-systematized facts to guide the improvement of our models. To make progress in both directions, we need field work on the actual forecasting and planning activities of a sample of actual firms—including confrontation of forecasts and plans with later experience.

VIII. FINDINGS AND RECOMMENDATIONS OF THE COMMITTEE

FINDINGS

(1) Expectational statistics, though still in an early stage of development, seem in the light of our and other recent studies to have appreciable direct forecasting value in several sectors of the economy, and still greater value as elements in forecasting formulas.

(2) Existing private and governmental research enterprises have already made impressive progress in the collection of direct business expectations. Their contributions could be significantly improved by minor changes in procedure. Chief among these would be a recognition of the scientific value of their data, and of the public as well as professional interest in full disclosure of survey concepts, techniques, and coverage.

(3) Progress both in collecting and analyzing direct expectational data is hampered by lack of systematic knowledge about the processes of forecasting, decision-making and review in business. Limited knowledge about this decision-making process also hampers the use of inferential data on expectations.

(4) The paucity of direct measures has led us to examine various inferential measures of business expectations. The most promising measures of this type are to be found among series that register forward-looking business action. Of such measures examined by the Committee, many have value as "leading" series, but their usefulness as indicators of the expectations held by businessmen is blurred by the aggregate character of such statistics and other

complicating factors. The potential usefulness of inferential measures would be substantially improved if they were assembled and appraised against an expectational background.

RECOMMENDATIONS

1. Truing up of existing direct expectations series

(a) Present survey organizations should make a serious effort to include a substantial element of before-and-after data from identical firms. This recommendation is directed in the first instance to compilers of expectations data, but collectors of historical data (e.g., inventories) should also consider the possibility of collecting expectations. Where current sampling routines do not yield a substantial overlap of identical firms, consideration should be given to special call-back samples.

(b) Current samples should be more fully stratified by industry and size, and sample sizes increased to the extent necessary to permit such breakdowns. Supplementary sampling should be undertaken when necessary to fill in the upper size strata of the business population. Experiments in the recombination of such breakdowns with appropriate weights to approximate the business population at large should be undertaken.

(c) Compilers should recognize the need for more complete quantification of expectations data on a time-series basis. Experimentation with techniques of seasonal adjustment is also desirable, with the aim of eliminating back-comparisons with the corresponding time period a year earlier.

(d) The present serious wastage of useful information should be avoided. Descriptions of survey procedures should be complete and kept up to date. Cross-tabulations of data should be compiled and made available on request, if not necessarily published, on the before-and-after experiences of individual firms, the co-variation of causally related items such as sales-inventory expectations, and comparisons of expectations with current levels of related variables.

2. Fuller analysis of existing bodies of data on direct expectations here and abroad

(a) An illustrative list of possible studies is presented in Chapter VII, and other specific suggestions are offered in Chapters III and

IV. These prospective areas of additional research appear to have the further advantage of requiring only modest resources to bring them to completion, thereby increasing their attractiveness to educational and other institutions with limited research budgets.

(b) A special survey conducted by the Committee suggests the presence of untapped possibilities in data regularly compiled by trade associations (Appendix D). Of 437 trade associations that provide economic or statistical services for their members, three-fifths reported that they regularly assemble and disseminate information on the future prospects of the economy as a whole, of their own industry or trade, or of both. Of these, 100 professed to supply direct measures of expectations for their own industry or trade, and 38 to supply such measures for general business. The existence of pay-dirt in this area deserves fuller investigation than the Committee was able to give it.

3. Truing up and fuller analysis of inferential measures of expectations

(a) A thorough study, covering as long a time span as possible, should be made of the timing history, particularly at cyclical turning points, of the several inferential measures of business expectations reviewed in this report.

(b) More refined classification of data should be attempted as the most promising method of segregating complicating factors in data on business births, business deaths, and new orders.

(c) The 22 individual commodity prices represented in the Bureau of Labor Statistics Index of Spot Market Prices might profitably be restudied to determine the extent to which the effect of supply factors could be eliminated and leads improved.

(d) The following possibilities for the development of new inferential series should be investigated:

- (i) Forward investment commitments (based, perhaps, on expansion of the series already set up for life insurance companies);
- (ii) Bond-price differentials;
- (iii) Exploratory study for some nondurable goods industry not currently reporting new orders with the aim of de-

veloping an index that could play the role of new orders in analysis.

4. Efforts at the development of new direct-expectations data and the creation of an explicitly expectational economics

(a) Possible new approaches to direct expectations include:

- (i) Plans of individual firms from the comptroller point of view (cash flows planning), in contrast to the point of view of production and inventory plans;
- (ii) Regional expectations statistics such as those compiled by several of the Federal Reserve Banks;
- (iii) Systematic development of a body of data on production schedules.

(b) Co-ordinate basic research is necessary on the techniques of business forecasting and decision-making; this research should be undertaken by balanced teams representing such mutually re-enforcing disciplines as economics, business practices, psychology, and sampling and interview techniques.

(c) The theory of expectations developed over the past quarter century should be thoroughly reworked. In recommending simultaneous work on all three fronts—data, business practice, and theory—we are impressed with the fact that a high pay-off on any one is likely to be heavily dependent on concurrent progress in the other two and cannot be guaranteed independently of such progress.

5. Ways and means for an integrated program of basic research

(a) Serious consideration should be given to the organization of a continuing private group interested in all branches of expectational economics (similar perhaps to the Conference on Research in Income and Wealth), with collaboration of experts on field surveys, group decisions, etc.

(b) Funds for such research might well be provided from private sources, but public interest may also warrant government support, particularly for the truing up of existing private series.

(c) Among other objects, a research organization of the sort proposed should seek to place resident observers or "interns" in the various survey organizations now compiling expectations data, here and abroad, and to the extent feasible, in business enterprises as well.

APPENDIX A

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APPENDIX B

A TEST OF THE FIRMNESS OF PRODUCTION SCHEDULES
IN THE STEEL INDUSTRY, 1946-55¹

Anticipations and intentions can occasionally be reconstituted after the fact by statistical analysis. One of the most promising fields for such a reconstruction is the production planning of the steel industry.² The reason lies in the closing of the Great Lakes to ore shipments for about five months each winter. It follows that if the steel industry knows its ore requirements several months ahead, those requirements will be reflected in the stockpiling of ore at the furnaces and receiving docks.³

Estimates of operations from November 30 stocks alone. On the hypothesis that steel producers have fairly firm production schedules for some months

TABLE 1
LAKE SUPERIOR IRON ORE: ACTUAL CONSUMPTION IN DECEMBER-MARCH COMPARED WITH CONSUMPTION COMPUTED FROM NOVEMBER 30 STOCKS
1946-55

[Millions of tons]

Year	November 30 stocks		Consumption, December-March		
	Actual	Excess over average of starred years	Computed ¹	Actual	Ratio: actual to computed
1946-47*	41.9	-3.4	27.0	25.8	.96
1947-48*	43.0	-2.3	27.6	27.1	.98
1948-49	45.2	-0.2	28.7	29.7	1.03
1949-50	44.8	-0.5	28.5	24.9	.87
1950-51*	41.5	-3.8	26.8	28.4	1.06
1951-52*	49.1	3.8	30.8	30.4	.99
1952-53*	51.2	5.9	31.9	32.2	1.01
1953-54	55.0	9.7	33.9	25.7	.76
1954-55	50.0	4.7	31.3	26.9	.86

*Years used in determining regression equation; average deviation of ratio from unity is 0.03. Average deviation for other 4 years is 0.14.

¹Computed consumption = $28.8 + 0.525 \times (\text{Nov. 30 stock} - \text{average})$.

Source.—*Survey of Current Business*.

¹This appendix was prepared by A. G. Hart of Columbia University.

²My attention was drawn to the desirability of analyzing iron ore statistics for this purpose by a letter from Dr. Robert Eisner. Pressure of time has prevented me from carrying out—what would be equally desirable—a study of evidence in trade publications about the steel industry's scheduling of operations.

³For a discussion of steel manufacturers' inventory problems in iron ore, see M. Abramovitz, *Inventories and Business Cycles*, New York, National Bureau of Economic Research, 1950, pp. 224-236. As will appear presently, however, the postwar record shows very strategic differences from the interwar record analyzed by Abramovitz.

ahead, we would expect scheduled production for the winter months to be foreshadowed by stocks about the time the lakes close (November 30 may be taken as a representative date). The pattern should be at its clearest in prosperous years when the steel industry is in a good position to carry out its plans.

Such a pattern is visible in the data. We may exclude the winters of mild depression 1948-49, 1949-50, 1953-54 and 1954-55.⁴ If we compare December-March ore consumption in the other five winters since the autumn of 1946 with stocks the preceding November 30, we find that consumption equalled or exceeded the average of the five winters by 52 per cent of the amount by which stock exceeded the average.⁵

The finding of such a pattern, it should be noted, is not an automatic consequence of applying correlation analysis. The same analysis applied to data for 1923-29 fails to show a positive relation between stocks and consumption. As may be seen from Chart 1, the regression obtained for 1946-52 is not only a reasonable "fit" to the points representing each year's combination of stock and consumption figures, but also a reasonable average of the year-to-year changes. But for 1923-29, if there was a consumption-stocks relation, it seems to have been negative—high stocks going with low consumption.

For the five years used to set the pattern, the ratio of actual to computed consumption in December-March ranges from 0.96 to 1.06; for the other four years from 0.76 to 1.03.⁶ The low ratios for 1949-50, 1953-54 and 1954-55 may indicate either that output in these winters was below plans or that the formula reproduces the plans badly.

Estimates of operations from stocks and shipments. If iron ore stocks are higher or lower as winter approaches than would accord with production plans,

⁴ Note that excluding these years in determining the pattern reduces the likelihood that the pattern found will "fit" these years; but all years are considered in testing the pattern below.

⁵ Comparisons were also made between November 30 stocks and consumption for December, December-January, December-February, and December-April. Simple correlations and regression coefficients for the five winters used run as follows:

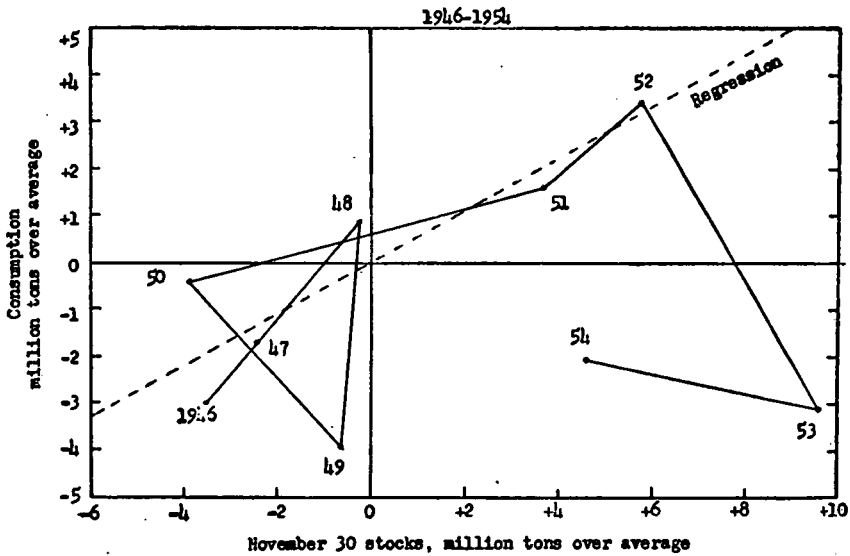
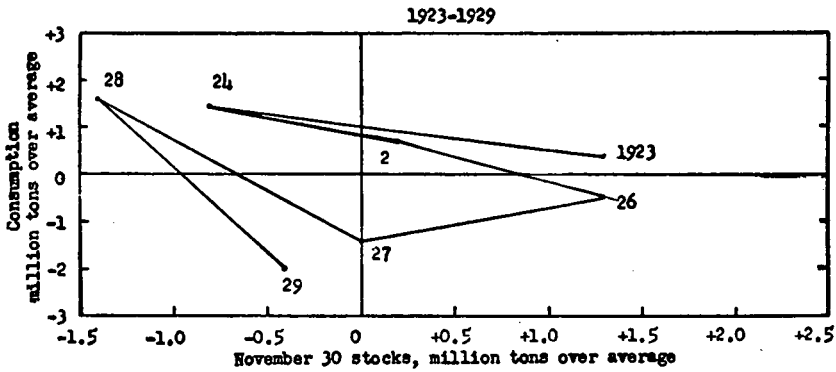
Months covered	Correlation coefficient (r)	Regression of consumption on stocks (b)
December only	.75	.17
December-January	.83	.27
December-February	.89	.39
December-March	.91	.52
December-April	.85	.62

The correlation is presumably highest for December-March because the inclusion of more months averages out random month-to-month changes; somewhat lower for December-April because April is the most remote of the months from the date of planning, and also in some years the first month of heavy ore shipments in the new season.

⁶ The value of the regression as a forecaster of actual consumption for the four years not used to help determine it is almost exactly the same as that of the average consumption level.

Chart 1

Lake Superior Iron Ore: Interwar Prosperity and Postwar Regressions of December-March Consumption on November 30 Stocks



this will be indicated by shipments late in the season. Since November shipments are irregular (presumably because of weather and the effect of the date of Thanksgiving on the closing down of shipments), our best gauge is October shipments. The results of this calculation are shown in Table 2. It yields a much better fit than the regression on stocks alone for the five years on which

the pattern is based, with ratios of actual to computed consumption ranging only from 0.99 to 1.01 instead of from 0.96 to 1.06. It also yields a decisively better estimate for 1954-55, bringing the ratio of actual to computed consumption from 0.86 to 1.02. Whether its estimate for 1949-50 is improved is a matter of interpretation.⁷ Estimates for 1948-49 show a slightly larger error, for 1953-54 a slightly smaller one.

TABLE 2
LAKE SUPERIOR IRON ORE: ACTUAL CONSUMPTION IN DECEMBER-MARCH COMPARED WITH CONSUMPTION COMPUTED FROM NOVEMBER 30 STOCKS AND OCTOBER SHIPMENTS, 1946-55

(Millions of tons)

Year	November 30 stocks	October shipments	Computed consumption, December-March			Actual consumption	Ratio: actual to computed
			Stock component ¹	Shipment component ²	Total ³		
1946-47*	41.9	9.2	-0.9	-1.7	26.1	25.8	0.99
1947-48*	43.0	9.8	-0.6	-1.1	27.0	27.1	1.00
1948-49	45.2	10.0	-0.1	-0.9	27.9	29.7	1.07
1949-50 ⁴	44.8	1.6	-0.2	-9.4	19.2	24.9	1.29
1949-50			-0.2	0.0	28.6		0.87
1950-51*	41.5	11.4	-1.0	0.5	28.2	28.4	1.01
1951-52*	49.1	11.1	1.0	0.2	30.0	30.4	1.01
1952-53*	51.2	13.0	1.6	2.1	32.5	32.2	0.99
1953-54	55.0	11.5	2.6	0.6	32.0	25.7	0.80
1954-55	50.0	7.3	1.3	-3.7	26.4	26.9	1.02

*Years used in determining regression equation.

¹ $0.272x$ (Nov. 30 stock less average of starred-year stocks).

² $1.0055x$ (October shipments less average of starred-year shipments).

³ Sum of two preceding columns plus average of 28.8.

⁴ Takes at face value shipments reduced by strike.

⁵ Shipment component set arbitrarily at zero.

Source.—Survey of Current Business.

Deviations from apparent plans by months. From the standpoint of our central problem, the most interesting episode seems to be the winter of 1953-54, when the recession seems to have carried ore consumption in December-March

⁷ Ore shipments in October 1949 were interfered with by a strike, leaving us without a direct estimate of the amount the companies wanted to ship. If we treat the actual shipments as if they represent desired shipments, they make a huge negative contribution to the computed estimate; the resulting figure of 19.2 million tons is clearly too low, and the ratio of 1.29 too high. If we treat the average shipment of the starred years as if it represented desired shipments in October 1949 (that is, set the shipment component at zero), the resulting computed consumption of 28.5 million tons is clearly too high. (November shipments in 1949 were below average, showing that there was no strong push to build up stocks after the strike). Thus the best figure for planned ore consumption would be somewhere well inside the rather wide range from 19.2 to 28.6 million tons, and the ratio of actual to planned consumption somewhere well inside the rather wide range from 1.29 to 0.87. Since 0.87 was also the estimate based on stocks alone, 1949-50 experience seems to confirm 1954-55 experience in showing the combination of stocks and shipments as yielding better estimates than stocks alone:

some 20 per cent below planned consumption.⁸ Can we say how rapidly the divergence evolved?

To put this episode in perspective, however, it is worth an effort to compare the whole course of iron-ore consumption in the postwar winter seasons with plan-reconstructions. This is done in Table 3, on the supposition that for each winter the seasonally adjusted output-plan is horizontal save for a slight growth-trend. Section D of the table reveals several interesting episodes in addition to the recessions of 1953-54:

1. In 1946-47, a strike checked output in December. If we take our reconstruction at face value, it suggests that plans were flexible enough to permit an effort to catch up by setting January 4 per cent above levels planned (presumably) in October-November—that is, 3 months previously.⁹
2. In 1948-49, if we take our reconstruction at face value, operations were already 8 per cent above plans in December—about 2 months from planning date. This looks like an instance where the plan-reconstruction is appreciably in error.
3. In 1951-52, ratios bounced from 1.03 to .97 and back.
4. In 1953-54, the divergence seems to have opened out progressively, from 10 per cent in December (2 months after plan) to 28 per cent in March (5 months after plan).¹⁰
5. In 1954-55, the divergence shifts from a mild short-fall to a 10 per cent excess between January and March.

In sum, the test seems to indicate:

- (A) That this method of estimating planned ore-consumption for December-March as a whole has a standard error of the order of 2 per cent. For any particular month, the standard error should be taken to be at least 3 per cent—besides any biased error introduced by misjudging the gradient of plans.
- (B) That plans are firm enough so that a divergence of more than 10 per cent within two months of planning date is unlikely, but that possible

⁸ In the recession of 1948, the steel industry started with a heavy backlog of orders. Ore consumption in the winter of 1948-49 did not sag off, but was higher than in the preceding winters and apparently higher than planned. In 1949-50, the peculiarity referred to above (resulting from a strike) makes plan-reconstruction along the lines of this paper rather uninteresting.

⁹ The November stocks, of course, represent the resultant of shipments and consumption over several months, and must embody little evidence for dates later than October; while the October shipments (which, as may be seen from Table 2, "explain" more of the changes in ore consumption than the November stocks) must rest chiefly on evidence available by Oct. 1. The planning-date implied by our model is thus at latest mid-October.

¹⁰ Note that if we should have "reconstructed" the 1953-54 ore-consumption schedule as declining rather than as slightly growing, we should correspondingly have translated the divergence as opening out more abruptly.

TABLE 3
LAKE SUPERIOR IRON ORE: ACTUAL VERSUS COMPUTED CONSUMPTION
BY MONTHS IN DECEMBER-MARCH, 1946-55

[Millions of tons]

Year	October shipments	November 30 stocks	Consumption				
			Total	Dec.	Jan.	Feb.	Mar.
A. Actual shipments, stocks and consumption ¹							
1946-47*	9.2	41.9	25.8	5.5	7.0	6.3	7.0
1947-48*	9.8	43.0	27.1	7.0	7.1	6.4	6.6
1948-49	10.0	45.2	29.7	7.4	7.6	7.0	7.8
1949-50	² 1.6	44.8	24.9	6.8	6.8	5.3	6.0
1950-51*	11.4	41.5	28.4	7.3	7.3	6.4	7.4
1951-52*	11.1	49.1	30.4	7.6	7.5	7.2	8.0
1952-53*	13.0	51.2	32.2	8.2	8.3	7.4	8.3
1953-54	11.5	55.0	25.7	7.0	7.0	5.8	6.0
1954-55	7.3	50.0	26.9	6.3	6.6	6.4	7.5
B. Consumption, seasonally adjusted ³							
Inverted SA coefficient				1.01	0.97	1.07	0.96
1946-47*			25.8	5.6	6.8	6.7	6.8
1947-48*			27.1	7.1	6.8	6.9	6.4
1948-49			29.7	7.5	7.3	7.5	7.5
1949-50			24.9	6.9	5.6	6.0	5.8
1950-51*			28.4	7.4	7.1	6.9	7.2
1951-52*			30.4	7.7	7.3	7.7	7.8
1952-53*			32.2	8.3	8.0	7.9	8.0
1953-54			25.7	7.1	6.7	6.2	5.8
1954-55			26.9	6.4	6.4	6.9	7.3
C. Consumption: Reconstructed plan ⁴							
1946-47			26.1	6.5	6.5	6.5	6.6
1947-48			27.0	6.7	6.7	6.8	6.8
1948-49			27.9	6.9	7.0	7.0	7.0
1949-50			(⁵)	(⁵)	(⁵)	(⁵)	(⁵)
1950-51			28.2	7.0	7.0	7.1	7.1
1951-52			30.0	7.5	7.5	7.5	7.5
1952-53			32.5	8.1	8.1	8.1	8.2
1953-54			32.0	7.9	8.0	8.0	8.1
1954-55			26.4	6.6	6.6	6.6	6.6
D. Consumption: Ratio of actual to plan							
1946-47			.98	.86	1.04	1.02	1.03
1947-48			1.00	1.04	1.00	1.02	.95
1948-49			1.07	1.07	1.06	1.07	1.08
1949-50			(⁵)	(⁵)	(⁵)	(⁵)	(⁵)
1950-51			1.01	1.04	1.00	.97	1.00
1951-52			1.02	1.03	.97	1.03	1.03
1952-53			.99	1.02	.99	.97	.98
1953-54			.80	.90	.84	.78	.72
1954-55			1.02	.97	.97	1.04	1.10

*Years used to set pattern.

¹These figures are from the *Survey of Current Business*.²Operations in this month impaired by strike.³Coefficients (by A. G. Hart) to allocate total for these four months only.⁴Total from Table 2 prorated to show slight growth-trend.⁵No reconstruction feasible by these methods.

divergencies expand as the planning date recedes, reaching at least a quarter five months after planning.

Other aspects of operating plans. The discussion down to this point has focussed on iron ore because it is the iron-ore-shipment problem that creates the need for advance planning in this instance. On the other hand, it must be remembered that the consumption of iron ore is the first stage in the process of producing steel. It would seem likely, therefore, that if a steel company knew its iron-ore consumption quite definitely two months in advance, it should have a longer horizon for operations of later stages.¹¹

A preliminary study of the relation of stocks and shipments of iron ore to total steel production, however, suggests that the over-all production-planning of steel is not much more firm than planning of ore consumption.¹² It would seem that other elements of flexibility roughly offset the fact that ore consumption is at an early stage.

On the side of employment, however, there are signs that planning is somewhat more firm. This is natural since stabilization of employment is one of the main motives for advance planning of operations, and since flexibility of weekly working hours provides a safety-valve. If we forecast the number of production workers in blast furnaces, steel works and rolling mills by the same type of model used for ore consumption (again deriving the pattern from the winters of 1946-47, 1947-48, 1950-51, 1951-52 and 1952-53), we reach the results shown in Table 4. With minor exceptions, the ratio of actual employment to computed planned employment is closer to unity in each month than the corresponding ratio for ore consumption.¹³ The 1953-54-recession episode suggests that it takes four months after the planning date for employment (as against two months for ore consumption) to diverge as much as 10 per cent from plan.

¹¹ This is not a certainty, of course, because a company may take up slack in its operations by varying inventories of pig-iron and scrap rather than of ore.

¹² This impression checks with testimony from one of the large steel companies presented to the Federal Reserve's Committee on General Business Expectations. According to this testimony, each month's operations are set up in detail a week or two before the month opens—along lines which rarely diverge much from plans roughed out one to two months previously. It is not established, however, that such explicit planning is typical of other steel companies.

¹³ Notably 1954-55, for which the pattern works out with ore consumption above plan but employment below plan. 1951-52 shows slightly greater divergence (but less bounce) for employment.

TABLE 4

**PRODUCTION WORKERS IN BLAST FURNACES, STEEL WORKS, AND ROLLING MILLS:
ACTUAL VERSUS COMPUTED NUMBER BY MONTHS IN DECEMBER-FEBRUARY,
1946-55**

[In thousands]

Year	Number of production workers by months			
	Dec.-Mar. average	Dec.	Jan.	Fe'.
A. Actual number, seasonally adjusted ¹				
1946-47*	492	² 466	503	507
1947-48*	523	523	523	522
1948-49	550	550	549	552
1949-50	509	506	509	511
1950-51*	551	550	552	552
1951-52*	564	564	564	564
1952-53*	561	560	561	562
1953-54	521	533	521	510
1954-55	498	492	496	507
B. Number computed from November 30 ore stocks and October shipments ³				
1946-47	507	506	507	508
1947-48	518	517	518	519
1948-49	524	523	524	525
1949-50	(⁴)	(⁴)	(⁴)	(⁴)
1950-51	543	542	543	544
1951-52	544	543	544	545
1952-53	576	575	576	577
1953-54	560	559	560	561
1954-55	536	535	536	537
C. Ratio of actual to computed number				
1946-47	.97	² .92	.99	1.00
1947-48	1.01	1.01	1.01	1.01
1948-49	1.05	1.05	1.05	1.05
1949-50	(⁴)	(⁴)	(⁴)	(⁴)
1950-51	1.01	1.02	1.02	1.01
1951-52	1.04	1.04	1.04	1.03
1952-53	.97	.97	.97	.97
1953-54	.93	.95	.93	.91
1954-55	.93	.92	.93	.95

*Years used to set pattern.

¹ These figures are from the *Survey of Current Business*; seasonal adjustment by A. G. Hart.² Employment impaired by strike.³ 538,000 plus 0.854 x (Nov. 30 stocks in millions less average stock of starred years) plus 15.90 x (October shipments in millions less average shipment of starred years).⁴ No reconstruction feasible by these methods:

APPENDIX C

NOTES ON BUSINESS EXPECTATIONS¹

Why should expectations be studied? Expectations need to be studied because decisions and actions by business firms are not always fully determined by the usual financial variables (profits, sales, etc.). Ex post we often find that we can explain what has happened without recourse to psychological variables. But we do not know in advance whether this will be the case, or whether changes in motives, attitudes and expectations will exert a significant influence.

Anticipatory data and expectations. Certain anticipatory data are business facts that can be obtained from business records (e.g., building contracts awarded, orders received). Budgets prepared and approved, say, by the board of directors represent an intermediate category. It is best to reserve the term expectations for a third category: subjective notions of the "business command" about things to come.

Meaning of expressed expectations. What businessmen expect to happen and what they intend to do should not be viewed in themselves as forecasts of things to come. Expectations, intentions, and plans are attitudes which prevail at the time when they are determined. They are important because they shape behavior. By finding out how expectations have changed we improve our diagnosis of existing conditions. Good diagnosis, of course, helps in making predictions, but predicting still remains an art rather than a mechanical operation.

What kind of information do we want about expectations? We need first of all micro-economic data on distributions. Suppose we obtain information about the proportion of firms in a given universe which expect (for instance) their sales either to increase substantially, or increase slightly, or remain more or less unchanged, or decrease slightly, or decrease substantially. Suppose, furthermore, that we obtain this information separately for firms in various size classes. In that case we would have the essential information about expected sales. Aggregative data on expectations—e.g., "manufacturers expect that their sales next year will be X billion dollars higher than they were last year"—would add to our knowledge, but must be considered less reliable than distributional data. Even if aggregative data are obtained (as is the case, for instance, regarding expected capital outlays in the SEC-Commerce Department surveys), they need to be supplemented by distributional data. Both

¹This appendix was prepared by George Katona of the Survey Research Center, University of Michigan. Most of the material has been taken from his earlier publications. Evidence supporting the statements made has been omitted.

types of data should be supplemented by information about the reasons for holding certain expectations. Answers to the question of "why" often clarify the meaning of stated expectations.

On the measurement of expectations. It is necessary to use samples which are representative of the universe studied. Sampling business firms is difficult because the large existing differences in size need to be taken into account.

Sending questionnaires to respondents by mail is less expensive than personal interviewing and permits the use of larger samples. In addition to a lower response rate, the major disadvantages of mail questionnaires are that they must be brief and specific. Personal interviews may resemble mail questionnaires if they consist of check lists. Conversational interviews with open questions may help to avoid suggestive influences and permit us to obtain financial data, information about past transactions, and information about expectations, as well as about the reasons why expectations are held. Such personal interviews require carefully selected and trained interviewers and cause some difficulties when it comes to the quantification of data.

APPENDIX D

AN INVENTORY OF TRADE ASSOCIATION ACTIVITY IN THE FIELD OF EXPECTATIONS

The domain of interest of the Committee on General Business Expectations consists pre-eminently of businessmen's expectations about the economic outlook and about operating variables of the individual firm. To our knowledge, no systematic inventory of data in this field has ever been undertaken, and there is little reason to believe that the series that have gained professional attention are the only ones, or even the most important ones, to merit analysis. By and large, we have not been able to remedy this lack; we have had to be content with acting as a clearinghouse to bring to the attention of a wider audience series that are already known to researchers and technicians in various sectors of academic life, government, and business.

In one area, however, the Committee has tried to break new ground. This is the area of trade association statistics. Though much use is made in government of trade association data, particularly by the Office of Business Economics of the Department of Commerce, we found no one who could tell us whether or not the statistical activities of trade associations embrace a significant output of direct measures of expectations, nor could we establish that knowledge is reasonably complete on the assembly of inferential measures of expectations by trade associations. We accordingly undertook a brief survey of this question, looking more for leads than for an evaluated inventory, and have been surprised at the extent and diversity of trade association activity in the field of general business expectations. The aim of this appendix is to describe the survey and suggest some of its results.

For the Committee, C. Ashley Wright assumed charge of the project. His success, however, was made possible by the active interest and participation of several organizations. In planning the survey and drawing up a questionnaire, the following persons and their respective organizations were particularly helpful:

Calvert J. Judkins, Department of Commerce

D. Harry Angney and Edward R. Fry, Federal Reserve System.

The list of associations surveyed (substantially all with a national basis) was provided by the Department of Commerce, together with address-stencils to facilitate the mailing of the questionnaires. The actual mailing and all clerical work in connection with coding and tabulating the results requested by the Committee were performed by the staff of the Board of Governors of the

Federal Reserve System, under the direct supervision of Mr. Fry. Finally, when a question of the authority for such a survey was raised, the Budget Bureau lent its support to the Committee by informally approving its questionnaire.

The character of the survey is best indicated by the questionnaire used, a copy of which appears at the end of this appendix. Its "general" part, covering questions 1 through 5, has two aims: (1) to establish the character of the respondent trade association, and (2) to determine the extent of trade association interest in forward-looking statistics. The heart of the questionnaire is the part on "expectation statistics," covering both direct and inferential measures. Both types of expectations are defined and illustrated in advance of questions about them, with the aim of reducing the uncertainty of replies in this relatively new area of statistical reporting. That some ambiguity remains was perhaps inevitable; it does not seem seriously to impair the findings reported below.

The Committee believes that the response to its questionnaire, made over a two-month period, was exceptional for a mail survey of such general character. As of July 29, Mr. Fry reported to the Committee that the response had been as follows:

First mailing (letter of May 12)	1,701
Follow up (letter of June 10)	189
Replies to date	approx. 850
Replies tabulated (including some follow ups)	601
Replies rejected from survey	approx. 200
Questionnaires received since tabulation	approx. 50

Replies were rejected from the survey for the following reasons, in order of importance:

1. Association felt survey was inapplicable and in most cases did not complete questionnaire.
2. Recipient of questionnaire replied it was not a trade association.
3. Recipient of questionnaire was a foreign information association.
4. Association was inactive.
5. Questionnaire or letter returned—no reply or refusal to reply.
6. Recipient of questionnaire was a nonbusiness association.

Thus, in all, the replies of 601 trade associations were tabulated for this report, of which (see Table 1) 437 were found to provide "economic or statistical services" on a scale meriting further analysis. The remaining tables in this appendix are based entirely on replies from these 437 associations. Had it been feasible to screen the trade association list in advance, it is likely that the ratio of usable replies to the total mailing would have been considerably higher than the roughly one-quarter achieved.

As a guide to interpreting the tables which follow, we include the following observations from Mr. Fry on the way various questions were interpreted by the respondents.

Questions 1a and 1b. Some associations apparently interpreted this question on general business in a narrower sense—i.e., as pertaining to a particular industry. To a large extent we were able to transpose such replies to questions 4a and 4b where they were relevant.

Questions 1, 4, 6, 8, 9, and 10. There probably was mixed interpretation of the meaning of the word "assemble" in these questions. Apparently some associations interpreted this as an inquiry about data originating with the association, while others interpreted it to mean merely assembling data from other sources, such as data published by government agencies. In some cases it was possible to distinguish between these interpretations, and we tried to code original data for tabulating purposes. This was not always possible, so tabulations for these questions may reflect some use of data originating elsewhere as well as compilation of original data.

Question 2. The two-digit industry classification was assigned on the basis of the association's name and comments pertaining to its activities. In some cases accompanying letters also were useful. This is a very rough industry classification, the major manufacturing groups being taken from the classification used in the Federal Reserve industrial production index. It may be noted, for example, that "Furniture and miscellaneous manufactures," includes a variety of "miscellaneous" manufacturers. There was some mixture of association membership also making the selection of major industry group difficult in some cases—i.e., an individual association may include producers, service, and distributor organizations in its membership.

Question 3. The number of persons employed is a rough indicator of the size of associations' staffs. In some cases, the services of several associations may be handled by an outside organization, such as an accounting or management firm. We received a number of completed questionnaires where this was obviously true. In some cases answers to such questionnaires were varied for different trade associations in the same field, while in others the outside organization compiling statistics for all trade associations in a particular field appeared to give the same answers for all associations for which it was replying. Such replies were counted in the tabulations as coming from separate trade associations. Some returned only one questionnaire indicating the answer applied to a number of associations listed thereon. Such replies were counted in the tabulations as coming from one association.

Questions 4a and 4b. Comments to this question were coded to indicate "industry trends," "reply not usable," or "no reply." In most cases this information was not provided by the trade association in its comments to

question 4. The above codes were derived from answers to questions 1, 7, 8, 9 and 10 or from accompanying letters and attached published material. For example, if an association indicated in answer to question 7 that it assembled sales and inventory statistics, comments to question 4 were coded "industry trends."

Question 7. A few additions were made to the list of expectation statistics for coding purposes—e.g., inventory, production, and collection statistics. Since these were not listed on the questionnaire they may have been overlooked by some associations compiling such data. Perhaps there were additional series that could have been added judging from the answers to question 8—e.g., cancellations (of orders).

Questions 1 and 8. Codes for comments to these questions included "interesting suggestions or comments." A few such codes on question 1 refer to suggestions for improving existing Government statistics. A few such codes on question 8 refer to series that were unusual or that might be of some interest.

Questions 9 and 10. There was apparently some misinterpretation of these questions with respect to the reference to general business or industry statistics. The editing and coding probably corrected this pretty well. Also, there was some misunderstanding of the meaning of direct and indirect measures of expectations. As a result, many answers to these questions were eliminated in the editing and coding as repetitive answers from earlier questions which did not seem pertinent. The codes for comments to these questions were set up after a quick review of several questionnaires. The "opinion survey" code should be interpreted more broadly, as it includes surveys of plans for construction and other activities as well as opinion surveys. It was not always possible to distinguish between the two forecast codes on question 10 answers, so it may be desirable to consider these two codes together.

Question 11. Some associations attached published materials as requested, but these did not necessarily refer to direct measures of expectations as was perhaps implied by the question. Some of these materials were primarily non-statistical; others contained a great deal of statistical material both originating with the association and coming from other sources. Some associations probably didn't attach releases because they made no reply to questions 9 and 10.

In the time available to the Committee, it has not been possible to subject the results of this survey to intensive analysis, nor could this be done satisfactorily without a searching follow-up of the promising leads provided by this inventory. The mere compilation of statistics of an expectational type is no guarantee of their quality and no proof that they are available on a consistent basis for a substantial period of time. But where there is so much smoke, the Committee expects to find fire. We had no perception that

statistical activity in the field of expectations would prove so widespread among trade associations, and we strongly believe that the file of information now in the hands of the Board of Governors of the Federal Reserve System forms a suitable basis for a more intensive survey of the principal areas where untapped expectations data appear to exist. In this connection, the restrictions of the survey must be noted. The Board assumed responsibility for holding the replies confidential; and a number of associations indicated, on the questionnaire or in an accompanying letter, that they wished to invoke this condition. It is believed, however, that most of them meant that they did not want specific answers to be associated with the trade association, and would not oppose further confidential enquiries by authorized persons under suitable guarantees. We therefore recommend that the file of questionnaires now in the Board's hands be preserved for further study and analysis, with a view to building up an evaluated inventory of trade association data not only in the field of expectations, but also in the domain of realized statistics where it appears that our knowledge of source material is still incomplete.

The most striking result of the survey is the extent of trade association interest and activity in the field of forward-looking statistics. Of the 437 associations for which replies were analyzed, two-thirds indicated that they assemble information on the future prospects of the economy at large, of their own industry or trade, or of both (Table 3). This activity is fairly widespread among the several industry groups, though it is understandably dominant in manufactures. From the point of view of expectations analysis, particular interest attaches to associations that compile forward-looking statistics for both their own industry or trade and for the economy as a whole (Table 3), and to those which compile data on the recent past and current situation in conjunction with their appraisals of future prospects (Table 4).

Quite clearly, information on "future economic prospects" is not identical with "expectations statistics"; yet the latter, as defined and analyzed in Chapter II of this report, are compiled by a quarter to two-thirds of the 437 trade associations that regularly provide economic or statistical services for their members (Tables 6, 7, and 12). One hundred report that they compile direct measures of expectations for their own industry or trade (Table 7); 38, that they compile such data for the economy at large (Table 6); and a small but significant number, that they compile such data for both their own industry and general business (Table 8). Simple forecasts figure prominently in these tabulations, but opinion surveys based on membership polls are also frequently cited (Tables 9 and 10).

Indirect or inferential measures of expectations—which, as classified in this report, cover many time series long in use—are of course compiled by

a large fraction of the reporting associations (Tables 12 and 13). For expectations analysis, however, interest centers on the joint compilation of related series, and the evidence suggests that many interesting combinations of series are regularly compiled by trade associations. The frequency of such combinations is presented by industry groupings in Table 14. Though the same industry detail is not at hand, the following results will be of interest to persons concerned with the behavior of new orders, inventories, and related variables.

(1) Trade Associations Compiling Shipment and/or Sales: Number That Compile Related Variables

<i>Variable</i>	<i>Number</i>
Work in process	7
New orders	65
Unfilled orders	53
Inventories	86

(2) Trade Associations Compiling Data on Production and/or Work in Process: Number That Compile Related Variables

<i>Variable</i>	<i>Number</i>
New orders	19
Unfilled orders	19
Inventories	45

(3) Number of Trade Associations Compiling Both New Orders and Inventories: 29

The Committee hopes that these brief suggestions on the kinds of information to be found in the following tables will stimulate the reader to a more intensive analysis. Time and space compel us to bring this note to a close.

TABLE 1
NUMBER OF TRADE ASSOCIATIONS FOR WHICH REPLIES WERE TABULATED,
CLASSIFIED BY NATURE OF SERVICE SUPPLIED

Industry group or subgroup	Technical	Mostly non-statistical	Economic or statistical	Total
Manufactures	5	90	307	402
Primary metals	0	0	11	11
Metal fabricating	0	26	83	109
Clay, glass, and lumber products	0	5	37	42
Furniture and miscellaneous manufactures	0	9	26	35
Textiles and apparel	0	15	32	47
Rubber and leather products	0	1	9	10
Paper and printing	0	4	29	33
Chemical and petroleum products	0	15	31	46
Foods, beverages, and tobacco	0	15	49	64
Minerals	0	6	13	19
Mineral fuels	0	2	2	4
Metal, stone, and earth minerals	0	4	11	15
Construction	0	2	7	9
Public utilities and transportation	0	0	21	21
Wholesale trade	0	9	23	32
Consumer durables	0	0	3	3
Consumer nondurables	0	7	10	17
Materials and equipment	0	1	8	9
Other	0	1	2	3
Retail trade	0	6	14	20
Consumer durables	0	2	4	6
Consumer nondurables	0	0	7	7
Materials and equipment	0	0	1	1
Other	0	4	2	6
Service	0	13	40	53
Finance	28	5	12	45
All industry groups	33	131	437	601

TABLE 2
PROVISION OF ECONOMIC INTELLIGENCE BY TRADE ASSOCIATIONS:
RECENT PAST AND CURRENT SITUATION

Industry group or subgroup	Number of associations reporting on:				Number of asso- ciations not re- plying	Total number
	General business	Own industry or trade	Both (1)and(2)	Neither (1)nor(2)		
	(1)	(2)	(3)	(4)	(5)	(6)
Manufactures	3	200	90	10	4	307
Primary metals.....	0	9	2	0	0	11
Metal fabricating.....	0	48	29	4	2	83
Clay, glass, and lumber products.....	0	27	9	1	0	37
Furniture and miscellaneous manu- factures.....	1	17	7	0	1	26
Textiles and apparel.....	1	19	10	2	0	32
Rubber and leather products.....	0	3	5	0	1	9
Paper and printing.....	1	20	7	1	0	29
Chemical and petroleum products.....	0	23	6	2	0	31
Foods, beverages, and tobacco.....	0	34	15	0	0	49
Minerals	0	7	5	1	0	13
Mineral fuels.....	0	1	1	0	0	2
Metal, stone, and earth minerals.....	0	6	4	1	0	11
Construction	0	0	5	2	0	7
Public utilities and transportation	0	15	5	1	0	21
Wholesale trade	0	12	11	0	0	23
Consumer durables.....	0	2	1	0	0	3
Consumer nondurables.....	0	4	6	0	0	10
Materials and equipment.....	0	5	3	0	0	8
Other.....	0	1	1	0	0	2
Retail trade	0	6	7	1	0	14
Consumer durables.....	0	2	1	1	0	4
Consumer nondurables.....	0	1	6	0	0	7
Materials and equipment.....	0	1	0	0	0	1
Other.....	0	2	0	0	0	2
Service	1	20	14	4	1	40
Finance	0	5	6	1	0	12
All industry groups	4	270	140	18	5	437

TABLE 3

PROVISION OF ECONOMIC INTELLIGENCE BY TRADE ASSOCIATIONS:
FUTURE PROSPECTS

Industry group or subgroup	Number of associations reporting on:				Number of associations not re- plying	Total number
	General business	Own industry or trade	Both (1)and(2)	Neither (1)nor(2)		
	(1)	(2)	(3)	(4)	(5)	(6)
Manufactures.....	10	114	52	105	26	307
Primary metals.....	0	3	2	4	2	11
Metal fabricating.....	0	25	14	34	10	83
Clay, glass, and lumber products.....	1	13	6	15	2	37
Furniture and miscellaneous manu- factures.....	1	13	4	5	3	26
Textiles and apparel.....	3	8	5	15	1	32
Rubber and leather products.....	0	2	3	3	1	9
Paper and printing.....	2	12	5	7	3	29
Chemical and petroleum products.....	2	16	4	9	0	31
Foods, beverages, and tobacco.....	1	22	9	13	4	49
Minerals.....	0	3	3	2	5	13
Mineral fuels.....	0	0	0	0	2	2
Metal, stone, and earth minerals.....	0	3	3	2	3	11
Construction.....	0	5	1	0	1	7
Public utilities and transportation.....	0	11	3	4	3	21
Wholesale trade.....	1	8	4	5	5	23
Consumer durables.....	0	1	0	0	2	3
Consumer nondurables.....	1	2	3	3	1	10
Materials and equipment.....	0	4	1	2	1	8
Other.....	0	1	0	0	1	2
Retail trade.....	1	3	6	2	2	14
Consumer durables.....	0	1	1	1	1	4
Consumer nondurables.....	1	1	5	0	0	7
Materials and equipment.....	0	0	0	0	1	1
Other.....	0	1	0	1	0	2
Service.....	1	18	10	7	4	40
Finance.....	0	4	5	3	0	12
All industry groups.....	13	166	84	128	46	437

TABLE 4

**PROVISION OF ECONOMIC INTELLIGENCE BY TRADE ASSOCIATIONS ON BOTH
(1) RECENT PAST AND CURRENT SITUATION AND (2) FUTURE PROSPECTS**

Industry group or subgroup	Number of associations so reporting on:		
	General business	Own industry or trade	Both
Manufactures	3	99	50
Primary metals.....	0	3	2
Metal fabricating.....	0	21	14
Clay, glass, and lumber products.....	0	13	6
Furniture and miscellaneous manufactures.....	1	10	4
Textiles and apparel.....	1	7	4
Rubber and leather products.....	0	0	3
Paper and printing.....	1	10	5
Chemical and petroleum products.....	0	15	3
Foods, beverages, and tobacco.....	0	20	9
Minerals	0	2	3
Mineral fuels.....	0	0	0
Metal, stone, and earth minerals.....	0	2	3
Construction	0	4	1
Public utilities and transportation	0	11	3
Wholesale trade	0	8	4
Consumer durables.....	0	1	0
Consumer nondurables.....	0	2	3
Materials and equipment.....	0	4	1
Other.....	0	1	0
Retail trade	0	3	6
Consumer durables.....	0	1	1
Consumer nondurables.....	0	1	5
Materials and equipment.....	0	0	0
Other.....	0	1	0
Service	1	16	10
Finance	0	3	5
All industry groups	4	146	82

PROVISION OF ECONOMIC INTELLIGENCE BY TRADE ASSOCIATIONS:
METHODS OF DISSEMINATION

Industry group or subgroup	Number of associations employing:									Number of associations not replying
	Bulletins and reports	News releases	News letters	Trade press and magazines	Speeches	Group meetings	Other	Only one method	More than one method	
Manufactures.....	228	86	31	22	76	41	31	115	192	43
Primary metals.....	7	5	0	2	3	0	1	4	7	2
Metal fabricating.....	55	23	7	5	16	15	6	28	55	17
Clay, glass and lumber products.....	30	9	2	2	7	3	3	17	20	4
Furniture and miscellaneous manufactures.....	21	2	3	1	5	4	1	13	13	3
Textiles and apparel.....	22	9	1	1	12	4	4	10	22	7
Rubber and leather products.....	7	1	0	1	0	1	1	5	4	1
Paper and printing.....	21	4	3	3	7	5	4	11	18	5
Chemical and petroleum products.....	24	13	3	1	10	3	5	15	16	1
Foods, beverages, and tobacco.....	41	20	12	6	16	6	6	12	37	3
Minerals.....	9	6	4	0	4	1	0	2	11	2
Mineral fuels.....	2	2	0	0	1	0	0	0	2	0
Metal, stone, and earth minerals.....	7	4	4	0	3	1	0	2	9	2
Construction.....	6	3	1	1	2	0	0	3	4	1
Public utilities and transportation.....	16	12	2	3	9	0	6	5	16	1
Wholesale trade.....	21	6	4	3	7	4	0	9	14	0
Consumer durables.....	3	2	0	0	0	0	0	1	2	0
Consumer nondurables.....	9	3	3	3	1	2	0	4	6	0
Materials and equipment.....	7	1	1	0	5	1	0	3	5	0
Other.....	2	0	0	0	1	1	0	1	1	0
Retail trade.....	13	3	3	4	1	3	1	5	9	1
Consumer durables.....	3	1	0	1	0	1	0	2	2	1
Consumer nondurables.....	7	1	3	3	1	2	1	1	6	0
Materials and equipment.....	1	1	0	0	0	0	0	0	1	0
Other.....	2	0	0	0	0	0	0	2	0	0
Service.....	29	8	7	5	15	6	4	14	26	3
Finance.....	11	4	2	2	4	2	0	3	9	1

TABLE 6

**PROVISION OF DIRECT MEASURES OF EXPECTATIONS BY TRADE ASSOCIATIONS:
GENERAL BUSINESS PROSPECTS**

Industry group or subgroup	Number of associa- tions reporting:		Number of associa- tions not re- plying	Total
	Compi- lations	No compi- lations		
Manufactures	23	271	13	307
Primary metals	2	8	1	11
Metal fabricating	7	71	5	83
Clay, glass, and lumber products	1	35	1	37
Furniture and miscellaneous manufactures	2	22	2	26
Textiles and apparel	1	31	0	32
Rubber and leather products	0	8	1	9
Paper and printing	4	25	0	29
Chemical and petroleum products	1	29	1	31
Foods, beverages, and tobacco	5	42	2	49
Minerals	1	12	0	13
Mineral fuels	1	1	0	2
Metal, stone, and earth minerals	0	11	0	11
Construction	0	5	2	7
Public utilities and transportation	3	17	1	21
Wholesale trade	3	20	0	23
Consumer durables	1	2	0	3
Consumer nondurables	2	8	0	10
Materials and equipment	0	8	0	8
Other	0	2	0	2
Retail trade	2	12	0	14
Consumer durables	1	3	0	4
Consumer nondurables	1	6	0	7
Materials and equipment	0	1	0	1
Other	0	2	0	2
Service	2	35	3	40
Finance	4	7	1	12
All industry groups	38	379	20	437

TABLE 7

PROVISION OF DIRECT MEASURES OF EXPECTATIONS BY TRADE ASSOCIATIONS:
PROSPECTS OF OWN INDUSTRY OR TRADE

Industry group or subgroup	Number of associa- tions reporting:		Number of associa- tions not re- plying	Total
	Compi- lations	No compi- lations		
Manufactures.....	65	165	77	307
Primary metals.....	2	5	4	11
Metal fabricating.....	16	44	23	83
Clay, glass, and lumber products.....	9	22	6	37
Furniture and miscellaneous manufactures.....	4	17	5	26
Textiles and apparel.....	6	15	11	32
Rubber and leather products.....	4	4	1	9
Paper and printing.....	6	16	7	29
Chemical and petroleum products.....	8	18	5	31
Foods, beverages, and tobacco.....	10	24	15	49
Minerals.....	1	7	5	13
Mineral fuels.....	0	0	2	2
Metal, stone, and earth minerals.....	1	7	3	11
Construction.....	1	5	1	7
Public utilities and transportation.....	7	10	4	21
Wholesale trade.....	8	11	4	23
Consumer durables.....	2	0	1	3
Consumer nondurables.....	3	6	1	10
Materials and equipment.....	1	5	2	8
Other.....	2	0	0	2
Retail trade.....	3	9	2	14
Consumer durables.....	1	3	0	4
Consumer nondurables.....	2	4	1	7
Materials and equipment.....	0	0	1	1
Other.....	0	2	0	2
Service.....	11	14	15	40
Finance.....	4	6	2	12
All industry groups.....	100	227	110	437

TABLE 8

TRADE ASSOCIATIONS PROVIDING DIRECT MEASURES OF EXPECTATIONS ABOUT PROSPECTS OF BOTH GENERAL BUSINESS AND OWN INDUSTRY OR TRADE

Industry group or subgroup	Number of associations
Manufactures.....	14
Primary metals.....	1
Metal fabricating.....	4
Clay, glass, and lumber products.....	1
Paper and printing.....	3
Chemical and petroleum products.....	1
Foods, beverages, and tobacco.....	4
Public utilities and transportation.....	3
Wholesale trade.....	2
Consumer durables.....	1
Consumer nondurables.....	1
Retail trade.....	1
Consumer durables.....	1
Service.....	1
Finance.....	3
All industry groups.....	24

TABLE 9

DIRECT MEASURES OF EXPECTATIONS: DISTRIBUTION OF TRADE ASSOCIATIONS
BY TYPES OF DATA COMPILED ON GENERAL BUSINESS PROSPECTS

Industry group and subgroup	Opinion survey	Annual forecast	Other	No reply
Manufactures	5	6	2	295
Primary metals	0	0	1	10
Metal fabricating	3	1	1	79
Clay, glass, and lumber products	0	1	0	36
Furniture and miscellaneous manufactures	1	0	0	25
Textiles and apparel	0	0	0	32
Rubber and leather products	0	0	0	9
Paper and printing	1	0	0	28
Chemical and petroleum products	0	1	0	30
Foods, beverages, and tobacco	0	3	0	46
Minerals	0	0	0	13
Mineral fuels	0	0	0	2
Metal, stone, and earth minerals	0	0	0	11
Construction	0	0	0	7
Public utilities and transportation	0	1	0	20
Wholesale trade	1	2	1	19
Consumer durables	0	1	0	2
Consumer nondurables	1	0	1	8
Materials and equipment	0	1	0	7
Other	0	0	0	2
Retail trade	0	0	0	14
Consumer durables	0	0	0	4
Consumer nondurables	0	0	0	7
Materials and equipment	0	0	0	1
Other	0	0	0	2
Service	1	1	0	39
Finance	3	1	0	8
All industry groups	10	11	3	415

TABLE 10

**DIRECT MEASURES OF EXPECTATIONS: DISTRIBUTION OF TRADE ASSOCIATIONS
BY TYPES OF DATA COMPILED ON PROSPECTS OF OWN INDUSTRY OR TRADE**

Industry group and subgroup	Opinion survey	Periodic forecast			Other	No reply
		Annual	More frequent	Total		
Manufactures	24	17	20	37	4	248
Primary metals	1	0	1	1	0	9
Metal fabricating	6	3	6	9	1	68
Clay, glass, and lumber products	2	2	4	6	1	30
Furniture and miscellaneous manufactures	2	1	0	1	1	23
Textiles and apparel	3	1	1	2	1	26
Rubber and leather products	2	0	3	3	0	6
Paper and printing	4	1	2	3	0	22
Chemical and petroleum products	2	3	2	5	0	24
Foods, beverages, and tobacco	2	6	1	7	0	40
Minerals	0	0	1	1	0	12
Mineral fuels	0	0	0	0	0	2
Metal, stone, and earth minerals	0	0	1	1	0	10
Construction	1	0	0	0	0	6
Public utilities and transportation	4	1	2	3	0	15
Wholesale trade	2	1	3	4	1	16
Consumer durables	0	0	2	2	0	1
Consumer nondurables	1	1	1	2	0	7
Materials and equipment	0	0	0	0	1	7
Other	1	0	0	0	0	1
Retail trade	1	0	1	1	0	12
Consumer durables	0	0	1	1	0	3
Consumer nondurables	1	0	0	0	0	6
Materials and equipment	0	0	0	0	0	1
Other	0	0	0	0	0	2
Service	7	2	0	2	0	31
Finance	4	0	1	1	0	8
All industry groups	43	21	28	49	5	348

**PROVISION OF DIRECT MEASURES OF EXPECTATIONS BY TRADE ASSOCIATIONS:
METHODS OF DISSEMINATION**

Industry group or subgroup	Number of associations employing:									Number of associations not replying
	Bulletins and reports	News releases	News letters	Trade press and magazines	Speeches	Group meetings	Other	Only one method	More than one method	
Manufactures.....	45	12	8	7	9	8	2	36	22	249
Primary metals.....	0	0	0	0	0	0	1	1	0	10
Metal fabricating.....	9	2	2	1	0	3	1	7	5	71
Clay, glass, and lumber products.....	5	2	1	0	1	1	0	5	1	31
Furniture and miscellaneous manufactures.....	4	0	0	1	2	1	0	2	3	21
Textiles and apparel.....	3	1	2	0	0	1	0	5	1	26
Rubber and leather products.....	2	1	0	1	1	0	0	1	2	6
Paper and printing.....	6	0	1	0	2	1	0	3	3	23
Chemical and petroleum products.....	6	3	1	3	2	0	0	4	3	24
Foods, beverages, and tobacco.....	10	3	1	1	1	1	0	8	4	37
Minerals.....	2	0	1	0	0	0	0	1	1	11
Mineral fuels.....	1	0	0	0	0	0	0	1	0	1
Metal, stone, and earth minerals.....	1	0	1	0	0	0	0	0	1	10
Construction.....	0	1	0	0	0	0	0	1	0	6
Public utilities and transportation.....	3	0	0	0	0	0	4	5	1	15
Wholesale trade.....	4	2	0	1	0	1	0	6	1	16
Consumer durables.....	0	1	0	0	0	0	0	1	0	2
Consumer nondurables.....	1	1	0	1	0	0	0	3	0	7
Materials and equipment.....	1	0	0	0	0	0	0	1	0	7
Other.....	2	0	0	0	0	1	0	1	1	0
Retail trade.....	1	0	0	0	0	0	0	1	0	13
Consumer durables.....	0	0	0	0	0	0	0	0	0	4
Consumer nondurables.....	1	0	0	0	0	0	0	1	0	6
Materials and equipment.....	0	0	0	0	0	0	0	0	0	1
Other.....	0	0	0	0	0	0	0	0	0	2
Service.....	4	0	2	0	1	1	0	6	1	33
Finance.....	4	0	0	0	0	0	0	4	0	8
All industry groups.....	63	15	11	8	10	10	6	60	26	351

TABLE 12

PROVISION OF INFERENTIAL EXPECTATIONS STATISTICS BY TRADE ASSOCIATIONS

Industry group or subgroup	Specified types of statistics			Other similar types of statistics			Total
	Number of associ- ations reporting:		Number of associ- ations not re- porting	Number of associ- ations reporting:		Number of associ- ations not re- porting	
	Compi- lations	No compi- lations		Compi- lations	No compi- lations		
Manufactures.....	233	70	4	117	174	16	307
Primary metals.....	11	0	0	5	5	1	11
Metal fabricating.....	69	13	1	36	40	7	83
Clay, glass, and lumber products.....	30	7	0	9	28	0	37
Furniture and miscellane- ous manufactures.....	18	7	1	10	16	0	26
Textiles and apparel.....	19	13	0	13	18	1	32
Rubber and leather prod- ucts.....	7	1	1	3	6	0	9
Paper and printing.....	26	3	0	11	17	1	29
Chemical and petroleum products.....	18	13	0	8	22	1	31
Foods, beverages, and to- bacco.....	35	13	1	22	22	5	49
Minerals.....	6	6	1	6	7	0	13
Mineral fuels.....	1	1	0	1	1	0	2
Metal, stone, and earth minerals.....	5	5	1	5	6	0	11
Construction.....	3	3	1	3	4	0	7
Public utilities and transporta- tion.....	9	12	0	13	8	0	21
Wholesale trade.....	13	10	0	10	11	2	23
Consumer durables.....	2	1	0	1	0	2	3
Consumer nondurables.....	6	4	0	6	4	0	10
Materials and equipment.....	4	4	0	3	5	0	8
Other.....	1	1	0	0	2	0	2
Retail trade.....	6	8	0	7	7	0	14
Consumer durables.....	2	2	0	3	1	0	4
Consumer nondurables.....	3	4	0	4	3	0	7
Materials and equipment.....	0	1	0	0	1	0	1
Other.....	1	1	0	0	2	0	2
Service.....	12	27	1	16	22	2	40
Finance.....	6	6	0	0	6	6	12
All industry groups.....	288	142	7	178	239	20	437

TABLE 13

INFERENCEAL EXPECTATIONS STATISTICS: DISTRIBUTION OF TRADE ASSOCIATIONS, BY NUMBER OF SUCH SERIES COMPILED

Industry group or subgroup	Number of series		
	1	2-5	6-13
Manufactures	68	146	13
Primary metals	3	7	0
Metal fabricating	17	48	2
Clay, glass, and lumber products	9	16	3
Furniture and miscellaneous manufactures	8	10	0
Textiles and apparel	5	12	3
Rubber and leather products	1	5	0
Paper and printing	7	16	3
Chemical and petroleum products	7	8	1
Foods, beverages, and tobacco	11	24	1
Minerals	3	2	1
Mineral fuels	0	0	1
Metal, stone, and earth minerals	3	2	0
Construction	1	2	0
Public utilities and transportation	5	1	0
Wholesale trade	2	11	0
Consumer durables	0	2	0
Consumer nondurables	1	5	0
Materials and equipment	1	3	0
Other	0	1	0
Retail trade	1	2	0
Consumer durables	1	0	0
Consumer nondurables	0	2	0
Materials and equipment	0	0	0
Other	0	0	0
Service	5	3	0
Finance	3	0	0
All industry groups	88	167	14

TABLE 14

INFERENCEAL EXPECTATIONS STATISTICS: DISTRIBUTION OF TRADE ASSOCIATIONS, BY TYPES OF SERIES COMPILED

Industry group and subgroup	Shipments and sales			Production and work in process			New and unfilled orders			Sensitive commodity prices and/or price spreads	Inventories	New business births	Employment statistics	Accounts receivable	Other	Number of associations not replying
	Shipments	Sales	Both	Production	Work in process	Both	New orders	Unfilled orders	Both							
Manufactures.....	93	51	53	68	4	3	26	11	42	6	84	4	34	3	117	80
Primary metals.....	6	0	3	5	0	0	0	3	0	0	5	0	1	0	5	1
Metal fabricating.....	36	12	15	6	1	1	13	3	19	0	18	1	8	1	36	16
Clay, glass, and lumber products.....	15	3	8	10	1	1	1	1	8	1	12	1	3	0	9	9
Furniture and miscellaneous manufactures.....	7	5	4	0	0	0	1	1	2	0	6	0	3	0	10	8
Textiles and apparel.....	8	3	5	10	1	0	1	1	3	1	8	1	8	1	13	12
Rubber and leather products.....	2	3	0	3	1	0	1	0	2	0	3	0	0	0	3	3
Paper and printing.....	9	7	8	6	0	0	4	0	7	0	11	0	6	1	11	3
Chemical and petroleum products.....	3	8	4	4	0	1	2	1	0	1	3	0	2	0	8	15
Foods, beverages, and tobacco.....	7	10	6	24	0	0	3	1	1	3	18	1	3	0	22	13
Minerals.....	3	1	1	2	0	0	1	0	0	1	1	1	0	0	6	7
Mineral fuels.....	0	0	1	1	0	0	1	0	0	1	1	1	0	0	1	1
Metal, stone, and earth minerals.....	3	1	0	1	0	0	0	0	0	0	0	0	0	0	5	6
Construction.....	1	0	0	0	1	0	0	0	0	0	1	1	1	0	3	4
Public utilities and transportation.....	3	1	0	1	1	0	0	1	0	0	0	0	0	0	13	15
Wholesale trade.....	0	8	3	0	0	0	0	1	0	0	12	0	2	6	10	10
Consumer durables.....	0	1	1	0	0	0	0	0	0	0	2	0	0	2	1	1
Consumer nondurables.....	0	5	0	0	0	0	0	0	0	0	5	0	2	4	6	4
Materials and equipment.....	0	1	2	0	0	0	0	1	0	0	4	0	0	0	3	4
Other.....	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Retail trade.....	0	3	0	0	0	0	0	0	0	0	1	0	2	0	7	11
Consumer durables.....	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Consumer nondurables.....	0	2	0	0	0	0	0	0	0	0	1	0	2	0	4	5
Materials and equipment.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Other.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Service.....	0	4	1	3	0	0	0	0	0	1	1	0	3	0	16	32
Finance.....	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	9

TABLE 15

TRADE ASSOCIATIONS PROVIDING BOTH INFERENTIAL AND DIRECT MEASURES OF EXPECTATIONS FOR OWN INDUSTRY OR TRADE

Industry group or subgroup	Number of associations
Manufactures	55
Primary metals	2
Metal fabricating	13
Clay, glass, and lumber products	9
Furniture and miscellaneous manufactures	3
Textiles and apparel	2
Rubber and leather products	4
Paper and printing	6
Chemical and petroleum products	6
Foods, beverages, and tobacco	10
Public utilities and transportation	5
Wholesale trade	6
Consumer durables	2
Consumer nondurables	2
Materials and equipment	1
Other	1
Retail trade	1
Consumer nondurables	1
Service	5
Finance	2
All industry groups	74

QUESTIONNAIRE ON TRADE ASSOCIATION ACTIVITY IN THE FIELD OF EXPECTATIONS

Board of Governors of the Federal Reserve System
 Consultant Committee on General Business Expectations
 Washington 25, D. C.

Questions on Expectations Statistics

(Note.—Please feel free to offer any suggestions or comments in the spaces provided or on additional sheets.)

General

1) Does your association regularly assemble and disseminate information pertaining to:

a) Recent developments and the current situation in general business?
 Yes _____ No _____

b) The future prospects of general business and the economy as a whole?
 Yes _____ No _____

Comments: If the answer to a) or b) is "Yes", please indicate briefly the general nature of such information, whether derived from government, the press or other sources, and suggestions, if any, for its improvement.

2) What is the full name and address of your association? (Please explain the trade or industry with which it is associated if not clear from the title.)

Comments:

3) How many persons do you normally employ? In all _____
 On economic and statistical analysis _____

4) Does your association or any groups affiliated with it regularly assemble and disseminate information pertaining to:

a) Recent developments and the current situation in your industry or trade? Yes _____ No _____

b) Future prospects in your industry or trade? Yes _____
 No _____

Comments:

5) How is information referred to in Questions 1) and 4) above normally disseminated? (Bulletin, news releases, speeches of officers, etc.)

* * *

Expectations Statistics

The Committee has found it useful to distinguish between *indirect* or *inferential* expectation statistics and *direct measures* of expectations. The first

includes statistical series, historical data, which do *not* measure expectations directly but are used as a basis for inferences concerning the behavior of expectations. For example, when New Orders increase it may be assumed that purchasers are optimistic. Examples of such inferential expectations statistics are (or may be in some situations):

Shipments	Inventories
Sales Volumes	Sensitive Commodity Prices
Work in Process	New Business Births
Unfilled Orders	Price Spreads (between: "spot" and "future" prices, high- and low-grade bond yields, etc.)
New Orders	Certain Employment Series (Overtime, length of the workweek ,etc.)

6) Does your association regularly assemble any data or series similar to the above which pertain to your industry or trade? Yes _____
No _____.

7) If the answer to Question 6) is "Yes", please list such series:

8) Does your association regularly assemble any other data or series, pertaining to your industry or trade, which in your opinion are useful in evaluating expectations concerning the future of the economy as a whole or your industry or trade? Yes _____ No _____.

Comments: (If "Yes", please explain briefly what is assembled and how you think it is useful in evaluating business prospects.)

* * *

Direct measures of economic expectations are comparatively new. They take various forms. For these reasons it is not easy to define them so as to include all series of possible interest. They purport to measure directly what people expect in the future or what they expect to do in the future. They do *not* measure something in the past from which to infer what people expect to happen in the future.

Examples of such direct expectations statistics are those concerning intentions to spend in the Federal Reserve Board's "Survey of Consumer Finances", the McGraw-Hill survey of plans for investment in new plant and equipment, the surveys of anticipated plant and equipment expenditures of the SEC and the Department of Commerce, Dun and Bradstreet's Index of Businessmen's Expectations, and the "Forum of Executive Opinion" or "Executive Forecast" of *Fortune* magazine.

In general, such series may represent what people expect to spend, or what they expect business to do, or how much they expect business to go up or down, or how many expect business to change up or down.

9) Does your association assemble (regularly or occasionally) any data which you think provide a direct measure of *expectations* concerning the future of general business? Yes _____. No _____.

Comments: (If "Yes", please explain briefly what material of this sort you collect and what you believe to be its significance).

10) Does your association assemble (regularly or occasionally) any data which you think provide a direct measure of expectations concerning future economic developments in your trade or industry? Yes _____. No _____.

Comments: (If "Yes", please explain as in Question 9).

11) If the answer to 9) or 10) is "Yes", how do you disseminate such information? (Please attach a copy of your latest release, if available.)

The CHAIRMAN. Mr. Gainsbrugh, you may proceed.

STATEMENT OF MARTIN GAINSBROUGH, NATIONAL INDUSTRIAL CONFERENCE BOARD, AND CHAIRMAN, COMMITTEE ON GENERAL BUSINESS EXPECTATIONS

Mr. GAINSBROUGH. Thank you, Congressman. I might begin by introducing the members of my committee with whom I was fortunate to work. Professor Hart, of Columbia University; Professor Burley, University of Pennsylvania; C. Ashley Wright, Standard Oil Company of New Jersey; and Millard Hastay, of the National Bureau of Economic Research. The other two members of our panel are not here today. They did yeoman work with our committee; Professor Bratt, of Lehigh University, who is in Calcutta; and Sanford Parker, of Fortune magazine, who was compelled by a very tight deadline to remain in New York today.

I might begin by saying that this has been a rewarding and profitable experience to all of the members of our committee, as we hope it will be, too, for the members of this committee and to the readers of our report.

We began in a somewhat confused fashion, not knowing quite what the scope and purpose of our report ought to be. We have tried in chapter 1 of this report before you in the opening chapter to set forth as clearly as we could what we thought were the purposes of our report. On the opening page we first state that this initial suggestion for study to deal specifically with business expectations as such was set forth by this very committee in its progress report back in 1954.

It recommended that the Federal Reserve explore, in cooperation with executive agencies, the adequacy of present statistics in 3 basic areas, inventories, 1; savings, 2; and 3, consumer and business expectations.

Subsequently, Chairman Martin, of the Federal Reserve, in his letter of December 6, 1954, gave us this charter. The language of the request indicated a desire on the part of the subcommittee for a comprehensive review and appraisal of the present status of our knowledge in the field of general business-expectation statistics, and for a set of broad but also as a specific as possible recommendations for improvements in existing concepts, methods, and statistics, including proposals for development of new statistical data if these are deemed desirable.

Going on, he indicated more specifically that surveys of general business expectations and related information, and this is on page 2 of our report, are a relatively recent development in broad economic analysis, although, of course, they have been used for many years for planning by individual companies in some areas. Of necessity, much of the work has been and still is experimental in terms of the statistical techniques utilized.

Your committee has an unusual opportunity to provide thoughtful evaluation and direction to this promising area of investigation.

We had considerable difficulty, as I indicated, coming to the center of our research charts. But after several meetings and consultation with people in business who were very cooperative, in Government

and with academicians, we came to the following conclusions as to our areas that we would investigate (page 4) :

I. The role assigned to business expectations in economic theory; their influence upon the general public and Government, as well as business in general.

II. And this is where we have spent most of our time—I hope productively—description, appraisal, and critique of several of the existing short-run measures of direct business expectations; also a special survey of the activities of trade associations in the expectations area and use of such data as a broad industrial base upon which to build general expectations.

III. A review of existing indirect measures of business temper and tempo—for example, such foreshadowing series as new and unfilled orders, employee accession, length of workweek, forward investment commitments, et cetera.

And last and the one we know least about even after months of work: How business expectations are formed and influenced. Internal and external factors influencing business expectations were to be examined, in the belief that profitable lines of additional research in this area could be outlined at the close of our study. It was decided to avoid any full-dress discussion of forecasting methodology and to focus our attention on matters closely related to this basic question, "What do businessmen expect to happen in the future?" How do you measure their expectations and, as best our science permits its measurements, what factors condition their expectations from week to week, and in the past 2 weeks you might say from day to day?

That, then, is the outline of the areas that we set forth to ourselves for investigation.

And on page 222, in brief compass, we submit our major findings and recommendations. We kept our findings down in number, concentrating upon major points, allowing the body of the report to speak to minor points.

I might add at this point before I read our findings and recommendations that the committee at the outset was not overly sold on the contribution that business expectations might make toward improved knowledge of performance of our society. But that at the finish of 6 to 8 months of work we are unanimous in our first finding, highly positive, rather than neutral or negative as we were at the outset.

This is finding No. 1: Expectational statistics, though still in an early stage of development, seem in the light of our and other recent studies, and I underscore the word "recent," to have appreciable direct forecasting value in several sectors of the economy and even greater value as elements in forecasting formulas.

Finding No. 2: These measures are now surrounded with public interest, and being surrounded with public interest they must have—there must be improved description of these measures. Existing private and governmental research enterprises have already made impressive progress in the collection of direct business expectations. Their contributions could be significantly improved by minor changes in procedures. Chief among these would be a recognition of the scientific value of their data, and of the public as well as professional interest in full disclosure of survey concepts, techniques, and coverage.

Finding No. 3 is a confession that we know too little about the factors that influence decision making in business. Progress both in collecting and analyzing direct expectations data is hampered by a lack of systematic knowledge about the processes of forecasting within the firm, of decision making and review in business. Limited knowledge about this decision-making process also hampers the use of the inferential on expectations.

Last, our fourth finding is that the indirect measures, too, have value as reflecting business expectations and they, too, can be improved. The paucity of direct measures led us to examine various inferential measures of business expectations. The most promising measures of this type are to be found among series that register forward-looking business action. Of such measures examined by the committee, many have value as leading series, but their usefulness as indicators of the expectations held by businessmen is blurred by the aggregate character of such statistics and other complicating factors. The potential usefulness of inferential measures would be substantially improved if they were assembled and appraised against an expectational background.

In essence, our findings are positive in character, that this is a field that can be worked and worked productively, and that substantial progress has already been made.

We now come to five recommendations which are in turn spelled out in detail. Our first recommendation is that we need to do more work to true up the existing direct expectation series. Present survey organizations, particularly those in the private field, should make a serious effort to include a substantial element of before-and-after data from the same firm. This recommendation is directed in the first instance to compilers of expectations data, but collectors of historical data, for example, inventories, should also consider the possibility of collecting expectations. Where current sampling routines do not yield a substantial overlap of firms, consideration should be given to special callback samples.

Our second recommendation under truing up the existing direct series: Current samples should be more fully stratified by industry and size, both for large firms and for the extremely small, and sample sizes increased to the extent necessary to permit such breakdowns. Supplementary sampling should be undertaken when necessary to fill in the upper size strata of the business population. Experiments in the recombination of such breakdowns with appropriate weights to approximate the business population at large should be undertaken.

The third recommendation under truing up existing series: Compilers should recognize the need for more complete quantification of expectations data on a time-series basis, recurring at a regular period. Experimentation with the techniques of seasonal adjustment is also desirable, with the aim of eliminating back-comparisons with the corresponding time period a year earlier.

And lastly, the present serious wastage of useful information should be avoided. Descriptions of survey procedures should be complete and kept up to date. Cross tabulations of data should be compiled and made available on request, if not necessarily published, on the before-and-after experiences of individual firms, the covariation of causally related items such as sales-inventory expectations, and comparisons of expectations with current levels of related variables.

Our second major recommendation: We should do fuller analysis of the existing bodies of data on direct expectations here and abroad. We present an illustrative list of such studies in chapter 7. These prospective areas of additional research appear to have the further advantage of requiring only modest resources to bring them to completion, thereby increasing their attractiveness to educational and other institutions with limited research budgets.

Now, as significant a finding as any: A special survey conducted by the committee suggests the presence of untapped possibilities in data regularly compiled by trade associations. We have a complete appendix devoted to a survey, the first to my knowledge in this Nation's history, of the expectations activities of the Nation's trade associations.

Of 437 trade associations that provide economic or statistical services for their members, three-fifths reported that they regularly assemble and disseminate information on the future prospects of the economy as a whole, of their own industry or trade, or of both. Of these, 100 professed to supply direct measures of expectations for their own industry or trade, and 38 to supply such measures for general business. The existence of paydirt in this area deserves fuller investigation than the committee was able to give it.

We have a recommendation as to further research along these lines on page 253 of our report.

The third area of recommendation deals with the indirect or the inferential measures of expectations.

A thorough study, covering as long a time span as possible, should be made of the timing history, particularly at cyclical turning points, of the several inferential measures of business expectations reviewed in this report.

More refined classification of data should be attempted as the most promising method of segregating complicating factors in data on business births, business deaths, and new orders.

The 22 individual commodity prices represented in the BLS Index of Spot Market Prices might profitably be restudied to determine the extent to which the effect of supply factors could be eliminated and leads improved.

Now, our fourth recommendation suggests new types of direct expectation series and calls for the creation of an explicitly expectational economics. Possible new types of direct expectations might include the following:

1. Plans of individual firms from the comptroller point of view, in contrast to the point of view of production and inventory plans.

2. Regional expectations statistics such as those compiled by several of the Federal Reserve district banks.

3. Systematic development of a body of data on production schedules, in the belief that this would throw light on subsequent rates of activity in some of our major industries.

Along with that, coordinate basic research is necessary on the techniques of business forecasting and decision making; this research should be undertaken by balanced teams representing such mutually reinforcing disciplines as economics, business practices, psychology, and sampling and interview techniques.

And as for theory, the theory of expectations developed over the past quarter century should be thoroughly reworked. In recommending simultaneous work on all three fronts—data, business practice,

and theory—we are impressed with the fact that a high payoff on any one is likely to be heavily dependent on concurrent progress in the other two and cannot be guaranteed independently of such progress.

And our fifth and last recommendation, I think, is unique in that it doesn't call for any marked increase in Government spending on statistics, but relies primarily on stimulation of the work going on in private research areas and educational institutions. Our three recommendations under ways and means on page 227 are these:

1. Serious consideration should be given to the organization of a continuing private group interested in all branches of expectational economics. We suggest as a prototype the Conference on Research in Income and Wealth, which has been meeting for 20 years, and which has been one of the most helpful vehicles or mechanisms for the improvement of national accounting in this country.

Our second recommendation under ways and means: Funds for such research might well be provided from private sources, but public interest may also warrant Government support, particularly for the truing up of existing private series, where the institutions in question may have limited funds for such particular purposes.

And lastly and perhaps the most important of the three: The need for a clearinghouse for the existing information here and abroad. We are much impressed with the progress that Germany and other countries have made in the collection of expectations data.

Among its other activities, a research organization of the sort proposed should seek to place resident observers or "interns" in the various survey organizations now compiling expectations data, here and abroad, and, to the extent feasible, in business enterprises as well.

We believe that this is possibly the only way that we can get insight into the business decision-making process within the individual firm or gain a grasp of how it is that the private groups putting out expectation series finally arrive at the particular conclusions they do about any given series of reports.

I might underscore again the unique value by way of closing of the appendix beginning on page 248 our inventory of trade association activity in the field of business expectations.

On page 250, for example, you can see that we mailed out 1,701 questionnaires to the trade associations in this country. We had a very high rate of response, in part perhaps because ours was a "bootlegged" questionnaire. At any event, 850 of the trade associations polled did reply to us.

At the top of page 251 we show that the replies of 601 trade associations were tabulated for this report, of which 437 were found to provide economic or statistical services on a scale meriting further analysis.

On page 253, the mere compilation of statistics of an expectational type is, of course, no guaranty of their quality and no proof that they are available on a consistent basis. But where there is so much smoke the committee expects to find fire. We had no perception at the outset that statistical activity in the field of expectations would prove so widespread among trade associations, and we strongly believe that the file of information now in the hands of the Board of Governors of the Federal Reserve System forms a suitable basis for a more intensive survey of the principal areas where untapped expectations data appear to exist.

Page 254, the first paragraph: The most striking result of the survey is the extent of trade association interest and activity in the field of forward-looking statistics. Of the 437 associations for which replies were analyzed, two-thirds indicate that they assemble information on the future prospects of the economy at large, more particularly on their own industry or trade or both.

And my last comment refers to table 14. This spells out specifically the types of statistical data collected by trade associations dealing with such significant areas as shipments and sales, production and work in process, new and unfilled orders, price trends, inventories, employment statistics, et cetera.

That, Mr. Chairman, is a brief review of what we hoped to accomplish at the outset and our findings and conclusions as they subsequently appear in our final report.

The CHAIRMAN. Thank you very much, Mr. Gainsbrugh. I now proceed to call on the other members of the panel for any comments that they may wish to make. Mr. Burley?

Mr. BURLEY. I might limit any remarks that I make at this time to my particular part on this committee which was most concerned with inventory plans, or budgets, as a possible indicator of business activity.

For a considerable period of time, as you well know, business, Government, and other groups have gathered historical data relative to inventory status, including finished goods, raw materials, goods in process. During the school year of 1953-54 the Wharton School at the University conducted a joint study with the Committee for Economic Development, which attempted to deal with the question of whether individual firms had much of a history in inventory budgets. That is, whether they budgeted or forecast their inventories in a manner similar to sales forecasts.

Rather to our surprise—and to our gratification—as we worked with the firms in the Philadelphia area, we found that the large majority of the 30 or so firms that were in our study group did have formalized inventory plans. They hadn't had them for a great number of years. Then we were interested in finding out whether the inventory plans, let's say 3 months in advance, were rather stable, or whether they had to be changed as the firm approached the expiration period of the forecast.

In addition, we were interested in determining whether the inventory plans which the firm had would compare, let's say, at the current time, with what they had predicted 3 months before.

In other words, we had this before-and-after proposition. In other words, we attempted to make the comparison between actual inventories at the end of the forecast period with the estimate made 3 months earlier, and we did this over several successive quarterly periods. We were struck with the fact that the great majority of the firms were able through their inventory plans to point the direction in which their business was going. In other words, they were accurate from the standpoint of telling whether their business activity was going to be higher or whether it was going to be lower.

I don't think that we would claim that this is a startling finding, but we do believe that it should seriously be considered along with other business expectations data as one of the things that needs greater experimentation with a more proper sample and a little longer time experience to find out definitely how good inventory expectation data

may be in pointing up the future. Obviously, there remains not only the problem of the sample but also greater knowledge of the multiple function served by inventories as well as the many seasonal adjustment problems.

The CHAIRMAN. Thank you, Mr. Burley.

Mr. Wright?

Mr. WRIGHT. I assume that there will be perhaps somewhat more detailed discussions of some of the many points raised by Mr. Burley and Mr. Gainsbrugh. So consequently I will try to focus the few comments that I will make on three principal points.

Mr. Gainsbrugh has pointed out that there was a good deal of discussion in the committee at the beginning of its meetings on just what its field of application was. And at the end of that we—in the process of those discussions we decided to avoid getting involved in a detailed analysis of forecasting and forecasting methods.

It is my own view and I think this would not be acceptable to the other members of the committee, that this was a wise decision for several reasons, one being that the task of analyzing forecasting methods as such, was so great that the facilities and time available to the committee were not sufficient to allow us to do a really good job on the subject.

But I would like, myself, to call attention to the need for a careful, scientific analysis of forecasting methods in general, together, perhaps, with a retrospective examination of their successes and failures and the degree of accuracy or inaccuracy which can be associated with different types of forecasts and forecasting methods.

The second point I would like to emphasize is in connection with the formation of expectations in business concerns. Mr. Gainsbrugh has pointed out this is an area in which we feel we really know very little and I quite agree with this. It is my feeling that one of the reasons, and this is something I am sure the committee—the rest of the committee—agrees with, perhaps deserves a little more emphasis. It is my feeling that one of the reasons we know so little about this is that it is inherently an extremely complicated process.

I am an economist with one of the largest business corporations in the world and as such, I am very much aware of the fact that the work of an economist, or an economic forecast presented by an economist, is just one small element of all the facts, considerations and influences which go to make up the final decision in any particular area.

In the last analysis, I believe important policy decisions on the part of large corporations are very complicated subjective processes of combining all sorts of considerations, of which economic considerations are often only one part.

Finally, I would like to also emphasize something that Mr. Gainsbrugh has called attention to in connection with trade associations.

What we have done is to attempt to find out from the trade associations what series of an inferential sort and associated with expectations, these trade associations regularly assemble. We did not feel that we had either the time or facilities to assemble them, to examine the statistical data or to attempt to analyze them or determine their value or limitations.

I would suggest that the file of the replies of trade associations which has been—which I believe is in the possession of the Board of

Governors of the Federal Reserve System—may conceivably be a valuable reference to enable scholars in this field to actually discover and obtain data, subject, of course, to the pledge of confidence, qualified pledge of confidence that the committee gave the trade associations. It may be a source of information which scholars can perhaps in future years develop somewhat more fully.

I would suggest that some additional, more intensive detailed work in this field might be of value.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Wright.

Mr. Hart?

Mr. HART. I think at this stage probably the most helpful thing I could say would be a little background on the relation of our work to other work in progress, which is part of the context of our recommendations. I come into this as an economic theorist who has been working on these problems since about 25 years ago. And as of a few years back, theory in this field was stuck. The people who had been working on it in the 1930's were able to make very little advance during the war and the first years after the war and until the late 1940's, the literature was quite stagnant.

This field has come unstuck and is at present very lively. This is due partly to the fact that the theorist now has evidence to chew on; besides the fact-gathering people are an unusually alert group and have thrown a lot of fascinating questions to us.

Furthermore, this is coming to be, this field, a great focus of cooperative work between the different social sciences. This is a matter about which the university world has felt queer for a long time; that economics was really so isolated from the other fields.

One sample of this is an item mentioned in the bibliography; a symposium that rose out of a meeting at Liverpool, this is listed on page 230, uncertainty in business decisions. The people at Carnegie Institute of Technology have a standing roster of research projects that focus in this direction being carried on by people of several different backgrounds. They are tying in with field research and theorizing in economics. Another item in the bibliography that shows how interest has been coming to a focus is the report (in which Mr. Hastay has a contribution) from the Montreal meeting of the American Statistical Association.

This month a meeting which has been in the planning stage for about a year and a half is being held by the Social Science Research Council in Pittsburgh at Carnegie Tech. This is again a group of economists, sociologists, psychologists—quite a variegated group of people. Mr. Hastay is also of that party.

Participants have already produced a very interesting group of papers of which some nine have already been distributed. The study of expectations is very definitely becoming a fruitful field. When we talk about a development like the conference on income and wealth, we have in mind this very substantial development of activity and the sort of fruitfulness that this field is showing as an area where the different social sciences can get together and reinforce each other.

The CHAIRMAN. That is very interesting. Thank you.

Mr. Hastay?

Mr. HASTAY. I think that, on the basis of Professor Hart's kind comments, it is obvious enough that my own interest is focused pretty

much on the expectation statistics compiled by the Dun & Bradstreet organization. I had worked rather narrowly in that field until I had an opportunity to serve on this committee. I would like at this time to express my appreciation and sense of great personal gain from having had a chance to associate with persons whose interest in the same general area has had the effect of very much broadening my own insight into the kind of work that has been going on here and the promise which it shows. In connection with the Dun & Bradstreet materials, it is probably well to call to the attention of persons who may not have an opportunity to look as deeply into our report as specialists might, that the findings I come to in connection with the Dun & Bradstreet data—which are quite favorable—have not been universally shared by all researchers in this field.

Some earlier work, which I do not feel to be mistaken work, but which was somewhat more narrowly focused than my own, came to much more negative conclusions than I do about the value of businessmen's expectations concerning the business outlook, on the one hand, and concerning operating variables of the individual firm, on the other hand—in distinction, say, from expectations about plant and equipment expenditures.

The findings were that such variables were not likely to be of very great forecasting value, or perhaps even very great analytical value in the building of economic forecasting models.

My own results, I think, suggest a somewhat more favorable interpretation of these data, but just because there has been some conflict in expert testimony, I would strongly urge anyone who is disposed to accept our findings in these areas to at least pay attention to the number of reservations we have expressed at various points in the report and to try to follow conscientiously the kind of evidence we present.

I don't think it can be said that the basis for our optimism is just overwhelmingly conclusive. There are still very many unsolved problems in the use of expectations about operating variables and we suggest some of these. I feel that readers should be forewarned that a certain amount of fairly hard thought should be taken about the matter lest the committee's findings be accepted too uncritically. I don't mean to suggest by this comment any reservation on my part about the attitude of the committee because I, myself, am very optimistic. But I do feel it is important to recognize that the evidence is still inconclusive in some respects, and we have tried conscientiously to present both the negative evidence as well as the positive in the body of this report. I hope it will not be overlooked by persons who examine our findings.

The CHAIRMAN. Thank you, Mr. Hastay.

Mr. GAINSBROUGH. Mr. Chairman, one of our committee members wasn't able to be present today. He asked me in his absence to read a brief statement that relates to his particular contribution to this report.

This is a brief memorandum that came from Mr. Sanford Parker about the Fortune survey. I thought you would be interested in its substance:

For November Business Roundup, Fortune has for the first time a quantitative survey of business expectations.

One of our findings in our report was that too many of the expectations series are qualitative in character. They say businessmen believe the economic curve will be up or that it will be down, but they don't tell us how much, and we talked about the need for quantification.

Apparently Fortune now is resorting to quantification of its business expectations.

An average of 2 percent rise is expected in the next 6 months and 3 percent over the next year. No change in expectations following the news from Denver (though more uncertainty reported for prospects after 12 months).

I might add Roundup, itself, holds more strongly than before to a different view. But entirely in keeping with the bearing, the new "business mood" survey differs from those Roundup has run in the past in that it asks businessmen to say how much up or down they expect their own businesses to be in 6 and 12 months. The usual 200-plus replies from executives in manufacturing, retailing, and banking have been supplemented with quantitative sales forecasts obtained in the quarterly inventory survey from nearly 200 different (in almost all cases) manufacturers and a subsample of forward predictors among retailers sampled last month apropos Christmas prospects. Successive introduction of the quantitative questions is part of Fortune's program to integrate and extend such survey techniques, in good part as a result of participating in the subcommittee's work.

The CHAIRMAN. Thank you very much. That is a very worthwhile practical result.

I will now call on Mr. Lebergott, of the Office of Statistical Standards, Bureau of the Budget, for comment or question?

Mr. LEBERGOTT. Thank you.

I would like to say that on behalf of Mr. Bowman, the Chief of our Office and Mr. Riley, the Deputy Chief, who was able to be here today, we are very grateful for an opportunity to be present, to share in these hearings. We are perhaps even more grateful to the committee and to the Reserve Board for having provided us with such highly competent advice. I think it is only fair to add the Budget Bureau is also cognizant of the fact that in a real sense it is unpaid advice. I am sure this will not go far toward balancing the budget, but it will go a long distance toward helping us in our work of statistical coordination and improvement.

Two points might be made about this report and they apply generally to all five reports. We are planning to give them very serious consideration in the review of the agency budget requests which are coming in now and, therefore, in the recommendations which will be made by the Bureau to the President for his decision on the fiscal year 1957 budget request.

They will also serve a much more long-run goal as, Mr. Chairman, you have indicated on previous occasions, your hope and your confident expectation these will not gather dust. We hope to do our share in utilizing them steadily and bringing some of their conclusions to the desirable end.

If I may comment on one specific point and that is the general inference which appears in some of the recommendations for more technical research, for more analysis. If you change the words slightly, I believe you will find them identical with the major findings of the Committee on Consumer Expectations.

They offer a very useful, a very salutary check here, because in some of these fields we have found it a little too easy to ask questions. The American people are very friendly and very willing to answer ques-

tions, and it becomes a little too easy to ask questions without knowing which ones to ask and what the answers mean when you get them.

The fact that the experts in the field are conscious of this problem is a very cheerful one in terms of sound development of the field and also in terms of not developing an excessive number of Government, or private, questionnaires.

The CHAIRMAN. Thank you.

Mr. Garfield of Federal Reserve?

Mr. GARFIELD. I may say, Mr. Chairman, that the Board of Governors appreciates very much the intensive work that this subcommittee has done, looking at this problem from several different points of view. It is recognized this is a very difficult field, one in which much of the work done so far is of a highly experimental nature. The Board appreciates the research the committee has done and the appraisal it has made of the material in this field of business expectations, which is very pertinent to the Board's own work as well as to the work of many other public agencies and private institutions.

One point I think that we would be interested in perhaps having a little more discussion about would be the one in section 5, recommendation 5, where they speak about ways and means for an integrated program of basic research. The emphasis here is on the development of private work in this field. I wonder, Martin, if you would want to spell that out a little more?

Mr. GAINSBROUGH. Much of the work done in this area is private in character. In that connection it may help to pull this out of the blue, if you look at the table of contents and see in chapter 3 the direct measures of business expectations that were reviewed by this committee, the Dun & Bradstreet survey in the private area, the National Association of Purchasing Agents, again in the private area, the Railroad Shippers' Forecast, Fortune surveys, the four that we have looked at intensively have all been in the private area.

The others are dealt with rather summarily. Manufacturers' sales expectations of the Department of Commerce, corporate declarations, planned Government expenditures. I don't know, Millard, in answer to this, whether the IFO Survey is governmentally sponsored or private.

Mr. HASTAY. It is private.

Mr. GAINSBROUGH. This is the parallel that we cite from abroad, again in the private area. I think it was against that background that we stressed the desirability of a continuing private group. It is also against that background that we suggested as a prototype the Conference on Research in Income and Wealth; most of the papers that have been contributed over the past 20 years are voluntary contributions of people within and outside Government.

I doubt that the costs of running the conference are at all staggering to the National Bureau of Economic Research. Most of the people pay their own way to and from the conferences. Yet we are impressed with the significant progress made year after year by this group, informal as it seems to be, with little assurance of continuity, but it has been in existence for 20 years. In the year 1955 it is undertaking a major survey of the national accounts of the Government to see what further changes are needed.

We thought, too, that such a group might solicit all of the trade associations that are providing expectations data, all of the educational

institutions, perhaps whet their interest and their appetite for this particular type of research. But over and beyond that, provide a central clearinghouse to which those of us who are interested in this field could go for ready access to the various series that are published.

We have as yet no complete catalog of the expectation work that goes on in industry, in trade associations, to say nothing of Government or at the State and local level. I think, Frank, these are some of the things that our committee had in mind. Maybe some of the other members of the committee would like to supplement that.

The CHAIRMAN. Any further comment?

Mr. GARFIELD. That is all.

The CHAIRMAN. Congressman Talle?

Mr. TALLE. Mr. Chairman, in connection with what you just stated, Mr. Gainsbrugh, am I correct in assuming that the Dun & Bradstreet survey discussed in this report originated with the survey made in 1947 for the Joint Economic Committee at the time the late Senator Robert A. Taft was chairman of this committee?

Mr. HASTAY. I can answer that question, Congressman Talle. But Dr. Watkins, director of research at Dun & Bradstreet, is in the room. I think it might be appropriate to ask him to comment on this.

Mr. TALLE. By all means, Dr. Watkins, and I am delighted to see you here today.

Mr. WATKINS. Your assumption is correct. We got into this business through the request of the late Senator Taft and Senator Flanders. Senator Taft was then chairman of the Joint Committee on the Economic Report, and Senator Flanders was chairman of the subcommittee. They specifically asked Arthur D. Whiteside, then president of Dun & Bradstreet, to try to answer the question as to what businessmen were thinking about prospects for the second half of 1947, pointing out that the committee was under considerable pressure to recommend works programs and the like to take up the slack in employment in the anticipated depression for the second half of 1947.

We did conduct that survey on a somewhat different basis; that is, we developed special lists of persons to be interviewed. But that was the beginning of our work in this field. Incidentally, the survey revealed that businessmen were predominantly optimistic as to the prospects for their companies; and it is a matter of record that business was good in the second half of 1947. In the spring of 1948 we undertook a similar survey of business expectations, but tying it in with our normal operations, as we have done since that time.

So your statement is correct, sir.

Mr. TALLE. Thank you, Dr. Watkins.

I notice that you recommend that a number of these private survey organizations make certain improvements in their surveys and adopt certain common procedures, including publication of descriptions of their procedures and results in detail.

In the Federal Government this sort of coordination of different statistical programs has been a function of the Bureau of the Budget. I wonder if your committee would suggest any way in which the experience and knowledge of the trained staff of the Budget Bureau could be helpful to these private agencies in carrying out your recommendations?

Mr. GAINSBROUGH. I think that would be a very valuable contribution. I haven't given much thought to the mechanics whereby their aid and assistance could be focused on this question. I assume through an annual conference the skill and knowledge of the members of the Bureau of the Budget and other Government technicians could be focused upon the existing private series, that they, too, would participate in the appraisal of methods and in advancing suggestions as to how the private series currently in existence could be improved.

We have found this to be true. The various technicians, including Ralph Watkins, who has just spoken, who are responsible for the private series, have a great desire to do a better job than is currently being done. This whole field of research is very much in a state of flux, and they welcome suggestions and criticism from the outside and proceed to incorporate many of those suggestions.

This is equally true of the National Association of Purchasing Agents. But it must also be recognized that quite a few of these private series may be satisfactory for their own limited purposes. I suspect the average purchasing agent is satisfied with the monthly survey of the purchasing association, if it gives him some insight into the probable course of business activity in the month or 2 months immediately ahead. He isn't much concerned with whether the sample is duly stratified or whether it is industrially or geographically representative.

When, however, he begins to grow aware of the fact that these series are moved out of a narrow locus of interest into the broad arena of public interest, it may be that the associations in question will recognize the greater public responsibility they have in the preparation of these materials, and devote additional resources for their improvement.

Mr. TALLE. I have heard it said by a critic or two that what we are trying to do in this committee may not be so important as we think it is, Mr. Chairman, and as I am sure this panel thinks it is and the entire joint committee thinks it is. These critics say, "Let trade organizations carry on their own statistical work." And that is assumed to be enough.

But if there is no coordinating agency, it seems to me that a lot of activities might be going on that could be helpful to special groups, but that the work done would fall short of potential usefulness.

Mr. GAINSBROUGH. I think we would all agree that there is need for more coordination of this field and for greater cooperation among the various existing private services. I feel impelled to add, however, that the trade associations must justify their existence to their membership, and that if the types of materials they are turning out aren't highly serviceable, the trade association will suffer over time. So that in a sense there is a market mechanism at work, not necessarily true in the governmental section, but certainly true in the private sector, which may lead to the type of integration even without an essential agency directing such integration.

Mr. HART. I wonder if I could comment also on Congressman Talle's question. This is in relation to the recommendation for a clearinghouse. Mr. Gainsbrugh is perhaps somewhat handicapped by his modesty in this matter in interpreting the record of the Conference on Income and Wealth, because of his long experience as one of its leaders.

I have had long experience as part of its rank and file and am in a stronger position, perhaps. The importance of clearinghouse activity is tremendous. This is one reason why the profession of economics is so grateful to your committee, sir, because your mechanism of hearings, panels, and questionnaires has provided one of the best channels for getting different points of view put in relation. This helps also in giving a certain sense of responsibility, I think, to many of us in deciding about the relevance of the questions which we are impelled to do research upon.

A conference like the Conference on Income and Wealth has in a quiet way a tremendous importance as a coordinating agency. It can't issue anybody directives, but each person—whether out of a Government agency where they are doing research in this field, or from a private organization—each one can put ideas together with the other people, see how his work is being used and how it ties in. He can find out whether an extension in one direction or another of his work is going to help somebody else's work or whether it is going to duplicate what somebody else is doing.

The standards of the Government organizations in the income field have been easier to maintain because the discussion at the conference made it possible—in a quiet way, there has never been any publicity—to establish professional esteem for the good work that was going on. Discussion gave the people involved a sense of the importance of what they were doing, and also the unimportance of some things which they could sacrifice to the more important ones.

The private agencies in the field have also, I think, improved their standards considerably. The National Bureau of Economic Research, which was a great pioneer in this work, has done much more imaginative work in the field of national income since the conference existed and I am sure has profited greatly from it.

This is the kind of thing that doesn't quite arise spontaneously and the kind of thing that a Government agency can't do. Neither can the American Economic Association do it, because association meetings are too public, too large, too hurried. Between the income conference and other similar groups, we have had a fair bit of favorable experience with this type of clearinghouse.

Mr. TALLE. Mr. Gainsbrugh, you mentioned that the Germans are doing pretty good work in the field of expectations. I refer to page 224 in your report, that is, your recommendation No. 2, namely, "fuller analysis of existing bodies of data on direct expectations here and abroad."

Mr. GAINSBROUGH. Yes.

Mr. TALLE. Yesterday morning I referred to the conference in Helsinki, Finland, where the Interparliamentary Union met this year. That is a peace organization with a current membership of 47 nations and the delegates must be lawmakers, representatives of lawmaking bodies. The organization maintains 6 to 7 standing committees that study various aspects of life. I have served on the Committee on Economic and Financial Matters. However my service has been limited to service during the conference and not through the year at any time. This year, I thought, in view of the interest shown in the work of this subcommittee and the fact that we have the best statistics in the world, other nations might profit by emulating what we are doing. I therefore proposed that the Committee on Economic and Financial

Matters undertake as a subject for study the improvement of economic statistics.

I invited their cooperation, and they did agree that the Committee should undertake the study of improvement of economic statistics. What will come of it, nobody knows, but delegates were present from 46 nations, and it is reasonable to believe that this first step may lead to some measure of improvement, and it is hoped that much progress may be made in the years that lie ahead.

Now, my question, Mr. Gainsbrugh: Am I right in saying that economic statistics in most foreign countries are rather wretched?

MR. GAINSBROUGH. I would agree in the main, but then I would want to add this reservation. I think we in this country have made extremely gratifying progress in building up an improved body of current economic statistics. So that we have better information on the present position of the economy than we in this country have ever had before and of a more current character, and for a more diversified set of sectors than ever before, perhaps better than any other country in the world.

But where we seem to be falling behind is in the evolutionary process of the third stage of economic statistics. I think of three stages in our history: the first, economic statistics devoted largely to the dead past; up to about World War I that was the status of our economic intelligence. We lacked most of the measures that we have today of current position, our index of industrial production, employment and unemployment, cost of living index, weekly earnings, and so forth.

None of those measures was in existence in World War I on a national basis. Between World War I and World War II we have done an extremely good job of bringing into being data that throw better light, more current light on our present position. All of these measures I have referred to have been brought into being. We now have an integrated set of national accounts on a current basis developed within the last 20 years. But it seems to me that with the end of World War II we moved into the third stage from stage 1, dead statistics of the past to stage 2, current statistics developed between World War I and World War II. With the onset of World War II, and the Employment Act of 1946, we moved into the third stage of foreshadowing statistics, designed to throw light on the probable rate of operations in the economy in the months immediately ahead. Dim light, but better light than we have had in the past.

And there my feeling is that in recent years Western Europe in particular, has made greater advances than have we in this country; in the third stage, that is.

On page 139 we spell out specifically the progress that has already been made in many countries in this connection. Millard Hastay can talk to this more specifically.

The surveying of enterprise expectation on the Continent seems to have originated with the IFO-Institute at the beginning of 1950. The program is thus junior to that of Dun & Bradstreet, which it most resembles; but it has attracted considerable attention among economists and statisticians and has been widely copied by research organizations in other countries.

Thus, at the close of 1954, 8 countries in addition to the United States and Germany, were conducting surveys in the field of industry and trade which yield information on business expectations. As of

this date, the IFO method was being applied in the following countries: Japan, Austria, Union of South Africa, the Netherlands, Belgium.

Except for South Africa where quarterly surveys are taken, reports are made monthly and the findings are published in tables and colored charts of distinctive design, without text, to give a quick summary impression of the proportion of firms expecting a rise, no change, or a fall in selected business variables. Information is obtained through direct questioning of industrialists and members of various trades.

And you have looked at the results, Millard?

Mr. HASTAY. In the case of the IFO-Institute, primarily. It is also possible to get some insight into the statistics compiled in France, but I can't claim to have looked at the statistics of other countries with any thoroughness at all.

I know of their existence. That is about the extent of it.

But I do have basis for the comments in the committee's report, for which I am responsible, that these have been inspired by the work of the IFO-Institute of Germany and that they have been inspired in part because of the apparent success of the institute's work in forecasting and in part because of the very high quality of research that is going into the interpretation of those materials by people like the statistician Oscar Anderson and the economist-statistician H. Theil, of Holland. There is a sense, I believe, in which the success of the IFO method has been to a very considerable degree due to the excellent quality of people who have been attracted to these measures of current business prospects. I would like to be able to say that, after conscientious investigation of all the existing results, I know for a certainty that the progress of nations on the European Continent, at least, has been superior to our own. I am not prepared to say that. I have a feeling that careful study of the materials has perhaps progressed further than it has in this country. European scholars deserve very high marks in that regard. It is on this basis that I think we all feel that, in this area where the statistics we have are available on a continuous basis only from about 1949 in the case of the Dun & Bradstreet data, any materials which can serve as grist to the mill investigation deserve the attention of researchers. And I feel that among the materials, the foreign materials compiled in Germany certainly would merit conscientious study. They appear to be available. We have gotten quite substantial bodies of data at one time or another. I think if we pursue the investigation we perhaps can find out fully what is done in Germany. The information available is far from complete. But there have been publications in some journals which have been promising and add to our confidence in our own line of investigating and reporting.

Mr. TALLE. The nations of Europe are surely not lacking in scholarship. I put this question during the summer to another panel and one member said they had very fine statisticians over there but no statistics. That may be true in considerable degree and, of course, we would like them to improve their statistics. It would be good for them and good for us.

I would think the International Bank for Reconstruction and Development and the International Monetary Fund might exert some helpful influence in this connection.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Congressman Talle.

I had an experience recently in England which I thought gave me excellent ammunition in dealing with some of my constituents and perhaps even some of my colleagues on the importance to Government and business of statistical information. I was there a few weeks ago and discussed foreign economic policy with their people and our people. Somewhere along the line I talked with a man who had felt long before the Government indicated an awareness of it that they were going to have the inflation which they have been experiencing in the last months. He felt very strongly that if they had had a reasonably good series on business investment, they could have caught the trend at a time which would have been both objectively and politically more convenient for the Government to take action.

They looked at this from a governmental point of view and decided that there was some truth in this and have started work on the series on investment. I think this is about as good an example as you can find of the importance of some of these things to policy decisions.

I hope to impress a number of our colleagues with that during the next year.

Mr. TALLE. I shall be glad to listen.

The CHAIRMAN. One of the things that interests me very much is on page 227; it is the question of ways and means, recommendation, A. I recognize that some of these questions you may not want to answer, but I would like to explore this a little further to suggest that serious consideration be given to the organization of a continuing private group interested in all branches of expectational economics. Under whose auspices could or should this be, that is, under whose private auspices—nongovernmental auspices?

Is there a wide range of choice there? Is it limited? How could it be done?

Mr. GAINSBURGH. Well, the one prototype that we already suggest is the one under the aegis of the National Bureau of Economic Research, the Conference on Income and Wealth. This is an autonomous group, has its own officers, but the national bureau provides the space, the stenographic service, and the modest financing that is required to conduct an annual meeting.

There is a direct parallel. Other private groups that might conceivably be stimulated to perform the same service would include the Brookings Institution. I believe they have held conferences of a somewhat similar type dealing perhaps with the phenomena of price and big business rather than the income and wealth area. I think, too, the Social Science Research Council as a private group with foundation support might also be interested in at least initiating the type of recommendation that is cited in our recommendation A with sufficient finances to assure that that would be no problem, at least at the outset.

Conceivably business groups, too, might be willing to provide leadership or sponsorship in this area. I am thinking of the possibility that the CED and the United States Chamber, the conference board, and other business groups, could at least bring such group into being, meet their immediate organizational problems and then allow them to remain autonomous thereafter and through foundation or other sources provide them with enough finances for secretarial staff perhaps or for some research assistance in addition.

The CHAIRMAN. Thank you. Do other members of the panel wish to comment on that?

Mr. WRIGHT. I was just going to suggest some conversation we have had which has suggested the possibility that some university faculty might be prepared to organize this thing. My impression is that not a very elaborate organization is required in this connection. It is largely a question of finding a group that has sufficient interest to take the initiative. Would you not agree with that, Professor?

Mr. HART. Well, there are two other things involved. One is to have a central group like the executive committee of the Conference on Income and Wealth, of people who live more or less continuously with these problems, and in touch with each other and who are the natural center for correspondence. So if somebody wants to know something he knows who to go to. In the early stages the Conference on Income and Wealth was organized largely around the leadership of Simon Kuznets. Milton Friedman was executive secretary for a number of years and was very effective in establishing communication.

In the price conference which operated very successfully for several years, Joel Dean was a most extremely successful secretary. The probability is that the success of a movement of this sort would depend on finding some sort of group of people who would constitute an inner circle and some able young man, perhaps, somewhere in his thirties, probably, who could somehow be placed in this continuing secretarial relationship. To have a sponsoring organization is largely a question of providing a desk and a mailing address for this executive secretary.

Mr. WRIGHT. I subscribe entirely to what Professor Hart has just said. I would like to point out I think we were addressing our remarks to the slightly different propositions. Professor Hart was making a few comments on the organization of such a group and I think these comments are extremely well taken. The point that I was trying to make was that the initiative in this sort of thing, I think, can probably be taken in academic groups as well as some of the organizations Mr. Gainsbrugh has suggested. And such groups might very well be quite willing to take the initiative because it doesn't involve a very elaborate sort of an organization or a large amount of financial expenditure to bring about such an organization.

The CHAIRMAN. Thank you.

Now this "B" under ways and means, "funds for such research might well be provided from private sources, but public interest may also warrant Government support particularly for the truing up of existing private series."

The how of that, it seems to me, is rather a delicate problem. Would this be—would one approach to it be grants-in-aid program if the public interest was considered by the Congress, or by the executive to be so involved that there should be some governmental money assistance? How do you go about it?

Mr. WRIGHT. Well, I am not sure that I am in a position to comment on this very difficult question very intelligently. But I couldn't help but think in light of some of the discussion considerably earlier that much material is available and has not yet been exploited. For example, material in trade associations is probably assembled for the explicit needs and purposes of the trade associations, and this may imply that it is not especially well adapted to the needs of Govern-

ment, where Government of necessity has to take a considerable broader point of view. Now, the connection of this may be a little obscure, but it is my own personal feeling that perhaps one would have to approach the question that you brought to our attention by the process of evolution. That is, I believe, myself, that perhaps an intensive interest on the part of appropriate Government agencies in the usefulness of these series may clarify the role such series can play, and then over a period of months and perhaps years clarify more than is possible at the present time the need for additional expenditure on particular series. It would be my own personal reaction that we are probably not in a very good position at the present time to say with any great precision what series should be more intensively developed and what series should not be more intensively developed. We should not make decisions on the expenditure of funds until we have a clear idea as to how expectation series can be most profitably used.

This is, I realize, touching on personal views that I personally emphasized in discussions of the committee and perhaps some other committee members may hold certain divergent opinions on which they would like to comment.

Mr. GAINSBROUGH. We did use Government here in a very broad sense. I can cite one parallel in that the Federal Reserve, through the Michigan Survey Center, has work done for it, and exercises, I believe, some degree of control. At least it has the power of suggesting how that work can be further improved and provides additional funds for that particular purpose. I offer that, then, as one instance in which Government used in a very broad sense does provide support for a type of activity that remains within the private or educational center. I think similar mechanics might conceivably be worked out, after—and I agree here with Ashley—after a thorough study of what are the areas of weakness. We have enumerated some in our report. Once an agenda which indicates how the particular private agency proposes to improve its existing series was developed, funds might be forthcoming perhaps on that basis.

Mr. HART. I wonder if I could mention one of the possibilities which we didn't fully explore, but which was the sort of thing we had in mind. Dun & Bradstreet is performing a great public service with its compilation of which there is so much discussion. But there is a limit to how far they can go in putting resources into analysis. They were very much aware as we talked to them of interesting research possibilities—ways to add to the value of their data—which go beyond what they can reasonably do themselves. If it was possible to set up a research contract with some university group or some such organization as the National Bureau and install a little research unit under such auspices to work along with the Dun & Bradstreet people to chase some of these hares that they start and can't pursue—the value of their material could almost certainly be enhanced. They are already going beyond anything that could reasonably be expected of them from the standpoint of public interest. Their willingness to make material available to research workers is a very handsome contribution. This is one sample of the kind of thing that can be done and for which I think a research contract with an appropriate Government agency might be a very proper form.

The CHAIRMAN. Mr. Watkins, would you care to comment on that?

Mr. WATKINS. Well, Mr. Chairman, first of all I should like to express our appreciation of the kind remarks that Professor Hart has made. I would like, in fact, to express my congratulations, and I am sure I speak for all of my associates, to this distinguished committee for the very constructive contribution that has been made in this report. It seems to me that the Federal Reserve Board and the joint committee have received a document here that is going to be of great usefulness to students of the problem, both in Government and outside of Government. I have had a chance only to glance over the document, and after a more careful reading, I may wish to drop a footnote here and perhaps a dissent there; but I believe it is a notable contribution. I appreciate the kind words that have been said about the work that Dun & Bradstreet has done, has tried to get done in this field. Let me say also that I am appreciative also of the criticisms and suggestions that are made here. We have tried to put our cards entirely on the table with the committee, and I might say similarly over the years with the Joint Committee on the Economic Report.

We have gone, I think, about as far as any private group could go, given its necessity of preserving the confidential character of the individual responses. But we have recognized that there are many open questions in this area that we are unable to answer. There are many areas of research that need to be explored. The committee, I think, has shown real insight in its examination of the problem. I have the feeling that it is entirely fair. There are criticisms here that we will want to take into account and hope that we can improve our own results on the basis of what they have had to say. In particular I welcome the recommendations of the committee that more extensive research be done in this area. As I am sure you recognize, Mr. Chairman, this is a public good-will offering on the part of Dun & Bradstreet. We don't make our living by doing this sort of thing. But because of the nature of our operations we have recognized, the company has recognized over many years, long before I became associated with it 11 years ago, that we have a responsibility to the American economy to try to make available for public use statistical information on the condition of the economy. As you may know, two of the National Bureau's eight lead series come from our shop: The records on business failures and records on new business corporations.

These lead series seem to point toward what is going to happen in the future. We had in mind an experiment in the same direction in getting into this work on business expectations. I believe there are possibilities in the work, and I would be very happy indeed to see progress made through the work of this committee and through the blessings of the Subcommittee on Economic Statistics, that might lead to discovering much more about this area than we have been able to learn up to date.

So my congratulations to the subcommittee; my congratulations to the Joint Committee on the Economic Report for its foresight in asking the Federal Reserve Board to do this work; and my congratulations to the Federal Reserve Board for its insight—not merely insight but ability—in gathering the collection of experts that have been assembled in these task groups.

Thank you.

The CHAIRMAN. Thank you very much. The reason for the line of questioning I am following is the obvious one that the situation is

just on the verge of changing. Heretofore the responsibility has been that of the various panel task groups. The monkey is just about to move on to our back. We are going to face a deadline for action because obviously we can't accept all these fine reports and just file and forget them.

As I have reiterated to each group, I know I speak for the whole of the joint committee when I say that our attitude toward this is certainly not one of accepting all this fine work and forgetting it. But the monkey becomes a very difficult one and a very energetic one with sharp teeth and claws when we start getting down to the question of what is an appropriate agency, how far should recommendations go, where are we in terms of the kind of recommendations that *we* should make based on the recommendations that we have heard. I suspect that we are going to have a very difficult time in arriving at the conclusions as to what we should appropriately do when we write our report on the whole problem.

Mr. GAINSBROUGH. May I offer a personal comment on this? The committee hasn't discussed this at all. I think part of our charter specifically stated we were not to select agencies.

The CHAIRMAN. That is right.

Mr. GAINSBROUGH. I am impressed with the very marked growth which has gone on in the field of research expenditures.

We spend more now for research in a year than our cumulative expenditures for research over the entire history of the United States up to World War II. But I am also impressed with the fact that so much of the research expenditure, both Government and private, is in the field of pure research, in the physical sciences, rather than in the social sciences. What we spend for research in social sciences is a pittance as compared with the amount spent for research in the physical field. And here I embrace not only governmental spending in the social science field, but also industry spending in the field of economic analysis, marketing, and so forth.

All of this leads me to the thought that perhaps an agency that ought to look more intensively at our recommendations is the National Science Foundation. It is currently engaged in exploring areas of additional research and, as I understand it, has funds available to it for encouragement of research in particular areas. I would like to see the National Science Foundation pay at least a modicum of attention to the field of social sciences, in addition to the intensive analysis that it is undoubtedly making of the physical sciences. And in this connection, again, Government support could be forthcoming to some of these private agencies through research grants from the National Science Foundation.

The CHAIRMAN. Thank you. Are there further comments?

(No response.)

The CHAIRMAN. If not, I would like to acknowledge the presence of a man without whom I am sure none of this work could have been completed. He has been the coordinator of all these studies and I imagine he has been the man with the whip on the deadlines. I understand that he is on loan to the Federal Reserve Board from the Federal Reserve Bank of Boston, where he is the vice president in charge of personnel, and I also understand formerly an economist for that bank. That is D. Harry Angney right back there. There always has to be one of these anonymous people who get these things done, and I don't think the hearings should close without recognition of him.

I am informed also that all of the five task-group reports are scheduled for subjects for sessions at the annual meeting of the American Economic Association and American Statistical Association, which I think is an excellent illustration of the importance the trade gives to them.

If there is nothing further, the subcommittee will recess now until November 7, when it will conduct hearings in this room on employment and unemployment statistics for 2 days, November 7 and 8.

I don't want to conclude without repeating what I have said before and say again, that I know all of us are deeply grateful to you as individuals, and as a group, for the tremendous amount of work and effort that you put into these studies. We do not intend to let anything go undone that we can to make effective the result of your labors.

Thank you.

(Whereupon, at 11:40 a. m., the subcommittee adjourned, subject to the call of the Chair.)

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