

IMPROVING FEDERAL STATISTICS

HEARING BEFORE THE JOINT ECONOMIC COMMITTEE CONGRESS OF THE UNITED STATES

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IMPROVING FEDERAL STATISTICS

FRIDAY, MARCH 1, 1991

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, DC.

The Committee met, pursuant to notice, at 9:35 a.m., in room SD-628, Dirksen Senate Office Building, Honorable Paul S. Sarbanes, (Chairman of the Committee) presiding.

Present: Senators Sarbanes and Gore.

Also present: Stephen A. Quick, Executive Director; and Jim Klumpner and Chris Frenze, professional staff members.

OPENING STATEMENT OF SENATOR SARBANES, CHAIRMAN

Senator SARBANES. The Committee will come to order.

This morning the Joint Economic Committee meets to discuss proposals to improve the quality of federal statistics. This Committee has had a longstanding commitment to the quality of the Nation's statistical infrastructure and its capacity to provide the sound information on which policy decisions in both the public and private sectors are based.

For several years, both public and private sector witnesses have expressed growing concerns about the reliability of federal statistics, and it has become increasingly evident that the new programs necessary to keep pace with the complex and rapidly changing economy have not been developed. Fortunately, there appears to be a significant change in this administration's approach to federal statistical programs. The Council of Economic Advisers and the Interagency Working Group (Working Group) on federal statistics have been examining the problems and addressing some of these serious concerns. These efforts have been led by Chairman Boskin of the Council of Economic Advisers, whose interest in the statistical agencies has been of enormous help in moving this issue forward.

Exactly a year ago today, Chairman Boskin, you testified before the Joint Economic Committee on preliminary Administration recommendations to improve federal statistics and stated your own commitment to making additional future improvements. Later that year the Administration proposed selected budget increases for statistical agencies, many of which were passed—unfortunately not all, but many—despite the stringent constraints facing the overall federal budget. And I have here a number of letters and other efforts that were undertaken by this Committee and some of its members with their colleagues in order to be of assistance in that budget effort.

I am most pleased that the Bush Administration has recognized the importance of accurate data and has advocated renewed investment after a decade of neglect. The Fiscal Year 1992 Initiative represents a more comprehensive and sustained effort at improving federal statistics than was evident in last year's proposal. It addresses some of the more fundamental problems in the national and international economic accounts, and it appears to have real funding increases for a number of statistical programs, as well as plans for future improvements.

Obviously, adequate budget resources are essential to restore the traditional high standards of American statistical programs. The national investment in federal statistical programs is modest indeed, amounting to less than two-tenths of 1 percent of the federal budget. The contribution in enhancing the statistical infrastructure far outweighs the modest costs involved.

While welcoming the new initiatives—and I will put this later in the question period—I have some question as to whether the Working Group has given sufficient attention to economic statistics on family incomes, employment, and poverty—an area that you identified last year as one of major concern. Also, the importance of statistics on health, education, and the environment was acknowledged last year. I don't think these have been picked up on in the initiative itself.

We look forward today to discussing with the witnesses ways in which Congress, the Administration, and the private sector can continue to work together on a long-term effort to develop a comprehensive and sustained renewal of the federal statistical infrastructure.

We have with us today in our first panel the Chairman of the Council of Economic Advisers, Michael Boskin; the Undersecretary of Commerce for Economic Affairs, Michael Darby; and the Commissioner of the Bureau of Labor Statistics, Janet Norwood, who was recognized last year as one of our Nation's outstanding government professionals. All are members of the Working Group, which has been established to address this important area.

After hearing from the members of the Working Group, we will then go to a private-sector panel, who will testify on the importance of sound statistics for American business. We will then hear from Dr. Martin Fleming, who chairs the Statistics Committee of the National Associa-

tion of Business Economists and who will present the NABE's recently completed assessment of the federal statistical system. He will be joined by Mr. William Hawkes, Vice President and Chief Statistical Officer of Nielsen Marketing Research, A.C. Nielsen Company, who has served on private-sector advisory boards for both the Bureau of Labor Statistics and the Census Bureau.

We are very pleased to have these distinguished witnesses with us this morning. Before turning to Chairman Boskin and our panel from the Inter-agency Working Group, I yield to my colleague, Senator Gore, for any comments he may have.

Senator GORE. Thank you very much, Mr. Chairman. I will be brief, but I would like to make a few points.

First of all, I want to congratulate you and the staff working for putting together this excellent hearing and for the long-term effort the Joint Economic Committee has made in improving our federal statistics. It is extremely important that we have the best possible system for measuring where we are going and how we are getting there. And I look forward to this hearing.

I will be pursuing in today's hearing what some might regard as a side issue. I believe it to be one of the principal issues we face. And that is, how do we account for what are described as externalities in our economic system? Last year I began a three-year personal project of attempting to address this subject, and I wish to thank you, Mr. Chairman, and the Committee staff for the tremendous help the Committee has given me behind the scenes and directing me to the right people. And I also wish to thank you for the fact that, later this year, I will be able to pursue this in a more formal and structured way. I have been so impressed with the tremendous ability of this Committee staff to help organize a project of this kind. Insofar as this will be the subject of later hearings, I am just going to go with the flow today and ask the questions where they seem appropriate.

I do believe that the route of Communism in the philosophical war of the last 50 years should leave us with a feeling not just of self-congratulation but of responsibility to address the remaining residual shortcomings in this magnificent economic system, which we are now prepared to recommend as the blueprint for economic organization in the entire world, or almost the entire world. There are some serious shortcomings. And it's way past time that we can continue to ignore them as if they did not exist. So, I look forward to beginning the pursuit of those issues here today and continuing this year and next year.

Thank you, Mr. Chairman.

Senator SARBANES. Thank you very much, Senator Gore.

Mr. Boskin, we'll be happy to hear from you.

**STATEMENT OF HONORABLE MICHAEL BOSKIN,
CHAIRMAN, COUNCIL OF ECONOMIC ADVISERS**

Mr. BOSKIN. Thank you very much, Mr. Chairman.

I will ask that the entire statement be placed in the record, and I will summarize it.

I want to thank you, Mr. Chairman, and the other distinguished members of the Committee—

Senator SARBANES. I think if you'd pull the microphone closer, it would be helpful, not only to us but to the press and others in the room.

Mr. BOSKIN. I wanted to thank you in particular, Mr. Chairman, and other distinguished members of the Joint Economic Committee for the opportunity to discuss our ongoing initiatives to improve the quality of economic statistics. I am privileged to be accompanied by two colleagues and eminent professionals; Dr. Michael Darby, Undersecretary for Economic Affairs of the Commerce Department, who has responsibility for their major statistical operation in the Bureau of Economic Analysis and the Census Bureau; and Dr. Janet Norwood, Commissioner of the Bureau of Labor Statistics of the U.S. Department of Labor, who has responsibility for the Bureau's important programs in employment and prices, and a variety of other areas. They will make brief comments, if they may, pursuant to my opening remarks, and then we will be pleased to take questions.

Before I begin, however, I particularly want to thank you personally, Mr. Chairman, for your continuing interest in improving the quality of economic statistics and the support you have mentioned. It is certainly not the most sexy topic—for want of another word—but it is an issue of good government, and I think you are quite right that, with a sensible and modest investment, we can receive substantially improved benefits. You and this Committee have been a source of cooperation and an inspiration to the people inside the executive branch who have been trying to do their best to improve the quality of the statistics and develop this initiative.

We all know that federal statistics are important in a variety of ways. They are important to government in how resources are allocated; to the business community in making decisions; to private researchers; and certainly to policymakers, the Federal Reserve, and others. Therefore, it is important that they be of the highest possible quality.

I would like to briefly mention something that I think gets short shrift, something Senator Gore indicated, or at least hinted at, in his opening remarks. At their most fundamental level, our economic statistics help to provide the basic underlying intelligence to our citizens about how our economy is progressing or, as now, not progressing, unfortunately; and how it compares to that of other countries. That is, they form the basic infrastructure for making the kind of evaluation as to how the American economy is evolving over time, and how it

compares to other economies. While many of the specific details are enormously important to people who need them for better performance in their own operations, collectively, they form the basis upon which we make judgments about whether our society is progressing as we would like, what some of the problems are, what some of the challenges are, what the opportunities are, and how we compare ourselves over time to other societies.

The rapid pace of change in today's economy places a great strain on the ability of the statistical system to keep up. The emergence and maturation of the service producing sector; the rapid pace of technological innovation; the quality improvements made to products at a rapid pace; the substantial introduction of new goods and services that did not exist a decade or two ago; deregulation, which has eliminated certain automatic data collection from regulatory agencies; and the internationalization of the economy all require development of new measurement methodologies and timely improvements to the statistical system.

Over the past two years, the Administration, like this Committee, has heard the concerns of many individuals and organizations: the American Economic Association, the Council of Professional Associations on Federal Statistics, the National Academy of Sciences, and the National Association of Business Economists.

I believe it is safe to say that all of us agree that meaningful improvements to the federal statistical system are needed. I would like to say that the United States statistical system is among the finest in the world and staffed by dedicated and highly competent professionals. To be sure, the various statistical agencies have already made numerous improvements to the quality of the data and have increased the quantity of useful information provided.

To give two simple examples, the Bureau of Economic Analysis (BEA) has begun important work, pursuant to some of the funding you talked about earlier in this year's budget, to convert the national income and product accounts to what is called the United Nations' System of National Accounts (SNA). And, after much dedicated research last month, BEA introduced greatly improved data on GNP by industry. In January of this year, the Bureau of Labor Statistics (BLS) began publishing seasonally adjusted employment cost indices, which are important in understanding whether there is any wage and benefit pressure on the cost side of inflation. As a result of its commitment to long-term research, the BLS has already begun to incorporate a computer-price index into its producer-price index, which accounts for improvements in computer quality. However, much more remains to be done.

The dynamic U.S. economy poses numerous challenges for the statistical system. To be simplistic about it, when the United States produced mostly things like tons of steel and bushels of wheat, it was pretty trivial to add them all up. You just summed the tons of steel and

the bushels of wheat. But, now, it's often even difficult to define the unit of output. How should we define the output in the computer programming industry, the number of lines of computer code? Should we add a word-processing program to a spreadsheet program and call that two computer programs? How do we measure output in the education sector, the number of graduating students? How do we account for what is widely seen to be, for example, deteriorating performance in our elementary and secondary education system? How do we measure output and, therefore, productivity? How do we do that in a health-care sector that is a large and increasingly important part of our economy? For example, how do you measure the standard output of hospital services? Should it be the number of hospital patient days?

These are overly simple yardsticks. These are not necessarily the ones that are being used now, but I'm just trying to clarify this with some simple examples. They may not adequately measure output at a single point in time, let alone its evolution over time. For example, what can and is done in a hospital from day-to-day is vastly different from just a few years ago, and much of what required hospitalization then can be done faster and safer now, even on an outpatient basis. So, defining the unit of output is enormously complicated in a large and growing sector of our economy. It's further complicated when the pace of improvements and quality of products are rapid. Separating changes in product quality from pure price changes requires a high level of commitment to the basic research and methodological improvements as attested to by the recent experience of BEA in adjusting the computer price index for rapid improvements in quality, the GNP accounts, and the GNP deflator. That one change raised the growth rate of real GNP from 1982 to 1988 by three-tenths of a percent and the level of real GNP in 1988 by \$70 billion. It reduced the annual rate of inflation, as measured by the GNP implicit price deflator, by three-tenths of a percent.

Basically, you could buy more computing for the same amount of money—this is an extreme example. Of course, computers are a very important part of our economy—a growing part. For example, the price of some hypothetical standardized unit of computing a million calculations in a certain amount of time has plummeted at a very rapid rate with the improvements and increases in speed.

In other cases, the statistical system may find itself unable to keep up with the rapid introduction of new products. This is a particularly difficult problem in high technology areas where product life cycles may be relatively short. For example, in its producer-price-index program, the BLS normally resamples industries every 5 to 7 years to gather information on product changes. That is sufficient for many industries, but research at the Bureau shows that almost three generations of computers would have been introduced between benchmark surveys during the 1980s.

In still other cases, the problem may be the familiar one of balancing the tradeoff between timeliness and accuracy of data. We all want data very rapidly and news quickly. But, obviously, that means you're going to have a smaller and less accurate sample, and the need for accuracy means that you're going to have to gather more information and process it more carefully, with greater quality control. That creates a tension. That's one of the reasons the Commerce Department publishes three consecutive estimates of each quarter's GNP a month apart as more and more data become available in real time. There have been some significant attempts to improve the tradeoff between timeliness and accuracy that have begun already. For example, at the Labor Department, the adoption of automatic data collection techniques holds great promise in this regard.

As you indicated, over the past 2 years I've chaired the Working Group of the Economic Policy Council on improving the quality of economic statistics. It includes the representatives of the major producers and users of economic statistics in the Federal Government and not just in the executive branch. For example, the Federal Reserve, which produces and obviously uses federal economic statistics, was a participant. We developed a package of recommendations and, as I said last year on exactly this date, the President approved the package in late November of the preceding year. During the past year, the Working Group asked the agencies to submit detailed implementation plans, based on these general recommendations. Some modest additional funding was put in the budget for this year, and we greatly appreciate the help of the members of this Committee in assisting the beginning of some of the programs and in developing these plans.

Based on the recommendations of the Working Group, 17 major initiatives were included in the fiscal year 1992 budget. They fall into seven broad areas and I will only mention them, I won't go into detail. They are discussed in my written testimony and, perhaps, my colleagues would say a few more words about them. But I do want to mention them briefly, discuss the budget for them, and then address a couple of the issues that were raised in your introductory remarks.

First, is modernizing the national and international economic accounts to improve their accuracy, breadth, and international comparability, including improvements to the coverage and detail of international flows of funds and services. Moving to the SNA accounts, for example, will provide us an opportunity to separate out government investment from consumption expenditure, something that most other countries do and I think would be desirable from an economic and policy standpoint. Second, increasing the coverage of the service sector. Third, separating quality and inflation changes in price data and, as a result, produce better measures of inflation and real output. Fourth, improving the establishment, payroll and household surveys. Fifth, tracking changes across industries. Sixth, preparing for the future statistical workforce

needs, the human capital input that will be necessary over the coming years to implement these initiatives and to improve our statistical infrastructure. And, seventh, the sharing of statistical data.

There is a \$30 million proposal, or initiative, in this year's budget to make vital improvements in these seven areas. They're concentrated in three agencies: (1) the Bureau of Economic Analysis, (2) the Bureau of Labor Statistics, and (3) the Bureau of the Census. They're also requested for the National Agricultural Statistics Service and the National Science Foundation.

Because of lead times required to develop and implement improvements to the statistical system, funding requests are planned to increase in real terms in both fiscal years 1993 and 1994, and then level off in real terms in fiscal years 1995 and 1996. In fiscal year 1995, the Administration is proposing a real increase of over \$50 million for these initiatives. Over the 5-year period, we're proposing to spend nearly \$230 million to improve the quality of our economic statistics.

We believe these requests—after being carefully reviewed by the Interagency Working Group, OMB, etc.—represent the minimum necessary investment to make a serious improvement in the quality of economic statistics. To be sure, with far less funds we would be able to do a little bit. But a serious attempt has been made to have an integrated package in these areas. Better source data that feed into one agency's measures improves the output of other agencies' data. We believe that the package, as a whole, is consistent, coherent, and important; and, for a third of the money, we're not going to get a third of the improvements. We're going to get far less. It's an integrated package that we spent a great deal of time constructing. Without these funds, the statistical agencies would operate at funding levels that are insufficient to make adequate improvements in the present quality of their statistical programs. To be sure, they have their own plans, and they will try to do the best they could if these funds were not available. But these modest funds would give the agencies the margin to make a serious attack on improving the quality of economic statistics.

As indicated by his approval, the President places great importance on this package of recommendations. And, as you indicated, he does so in a very tight budget that's in a new regime of spending caps, when obviously there are many other claimants on public resources.

I'm going to leave the details of these seven areas aside. But I do want to address three specific things.

One is that you mentioned in your introductory remarks, Mr. Chairman, the areas of health and environment, which I know are major concerns of Senator Gore. I might add to these crime statistics: education and drug statistics, and a variety of other things. We do not mean to suggest that by focusing primarily on the core economic statistics that these areas are unimportant. Quite to the contrary. These are, indeed, important areas. This was a working group on economic

statistics, and we do not mean to suggest that improvements could not be made or may not be needed in these other areas. We just brought together the expertise from the economic agencies and focused on economic statistics. Now, there is some interrelation between the economic statistics and these other areas. There is some work on the environment that will be done in the BEA, for example, and obviously the Labor Department has a variety of initiatives in some of these other areas. But our charge was to try to improve our basic economic data.

Second, I think it's important for me to give due credit to this Committee and to the Congress, not only for making a first step in increasing funding but for one of the initiatives that came out of the President's program—a research program to better understand family income and poverty. And on that you jumped the gun on us; you put some funds into this year's budget and, indeed, there is a study that has been commissioned by the National Academy of Sciences (NAS). Perhaps, Janet would care to say a word or two more about that. But the Labor Department and the Census Bureau have a research program at the NAS, following up on that initiative. I didn't think it would be fair to claim that in discussing our budget requests for this year, since undoubtedly it would have been included had it not already been started with the initiative of the Congress. It is ongoing, and we think the work is very important, and we commend those of you who played a role in getting it started.

I would simply conclude by saying that this has been a collective, collaborative, and important effort by a large number of people. You see three of us here, but there are literally dozens and dozens of people throughout the statistical system who worked on this, represented their agencies, and developed the kinds of plans about how we could effectively use the funds.

The timing of the situation, as you recall, Mr. Chairman, was that we finished the initial set of recommendations and that they were approved as the budget process was being finalized last year. We got some initial funding with the help of the Congress. But we didn't feel it was right to go to the Congress and ask for taxpayer resources until we were sure that the agencies were going to be able to do a good job of spending and implementing them in a sensible way. We have taken that initial span of time in developing the whole package.

With those introductory remarks, which were a little longer than I intended, let me stop and thank you for your time and attention and ask each of my colleagues if they would care to make a few remarks.

Thank you.

[The prepared statement of Mr. Boskin's follows:]

PREPARED STATEMENT OF HONORABLE MICHAEL BOSKIN

Chairman Sarbanes, and distinguished members of the Committee, I appreciate the opportunity to discuss the President's ongoing initiative to improve the quality of economic statistics. I am privileged to be accompanied by Michael Darby, Under Secretary for Economic Affairs, U.S. Department of Commerce, and Janet Norwood, Commissioner of the Bureau of Labor Statistics, U.S. Department of Labor.

Federal economic statistics provide a portrait of the U.S. economy and its evolution. They help citizens and policy makers assess their country's progress and how it compares to that of other countries. It is important to government, the business community, researchers and citizens in general, that these statistics be of the highest possible quality.

As I testified before this Committee exactly one year ago, there are serious problems in the quality of the Federal Government's economic statistics. The rapid pace of change in today's economy places a great strain on the ability of the statistical system to keep up. The emergence and maturation of the service-producing sector, technological innovation, quality improvements to products, the introduction of new goods and services, deregulation, and the internationalization of the U.S. economy all require the development of new measurement methodologies and timely improvements to the statistical system.

Over the past two years the Administration has heard the concerns of many individuals such as yourself, Mr. Chairman, as well as groups such as the American Economic Association, the Council of Professional Associations on Federal Statistics, the National Academy of Sciences, and the National Association of Business Economists. I believe it is safe to say that all of us agree that meaningful improvements to the Federal statistical system are needed.

It is important to emphasize that the United States' statistical system is already among the finest in the world, staffed by dedicated and highly competent professionals. To be sure, the various statistical agencies have made numerous improvements to the quality of data and have increased the quantity of useful information provided. For example, in the last year, the Bureau of Economic Analysis (BEA) began important work on converting the National Income and Product Accounts to the U.N. System of National Accounts (SNA). And after much dedicated research, last month BEA introduced greatly improved data on gross national product (GNP) by industry. In January of this year, the Bureau of Labor Statistics (BLS) began publishing seasonally adjusted employment cost indices. As a result of its commitment to long-term research, the BLS also recently incorporated a computer price index into its producer price index that accounts for improvements in computer quality.

Much more, however, remains to be done. The dynamic U.S. economy poses numerous challenges for the statistical system. When the United States primarily produced products like steel and wheat, output was easy to count—tons of steel and bushels of wheat. However, in the service-producing sector, it is often difficult even to define the unit of output. For example, should the number of lines in a computer program be the standard unit of output of the computer programming industry; should the number of graduating students be the standard unit of output of the education sector; or should the number of hospital patient days be the standard unit of output in the hospital sector? Clearly, such overly simple yardsticks may not adequately measure output at a point in time, let alone its evolution over time. What can and is done in a hospital today is vastly different than just a few years ago. And much of what required hospitalization then can be done faster and safer now even on an out-patient basis.

Defining the unit of output is complicated further when the pace of improvements to the quality of products is rapid. Separating changes in product quality from pure price changes requires a high level of commitment to research, as attested to by the experience of the BEA in adjusting the computer price index for rapid improvements in quality. That one change raised the average annual growth rate of real GNP between 1982 and 1988 from 3.8 to 4.1 percent, raising the level of real GNP by \$70 billion in 1988. Correspondingly, the new computer price index lowered the average annual rate of inflation (as measured by the GNP implicit price deflator) from 3.6 to 3.3 percent over this period.

In other cases, the problem may be a statistical system that finds itself unable to keep up with the rapid introduction of new products, such as high technology products. For example, in its producer price index program, the Bureau of Labor Statistics normally resamples industries every 5 to 7 years to gather information on product changes. Recent research at the Bureau shows that almost 3 generations of

computers would have been introduced between benchmark surveys during the 1980s.

In still other cases, the problem may be the familiar one of balancing the tradeoff between timeliness and accuracy of data. For example, last October's preliminary payroll employment figures indicated a monthly employment decline of 68,000 workers. Revised numbers released the following month showed a more significant employment decline in October 1990—over 175,000. Although the need for timely information contributes to the problem of revisions, it is sometimes possible to significantly reduce the magnitude of those revisions. As this testimony will indicate, in the case of payroll employment, the adoption of automated data collection techniques holds great promise in this regard.

Over the past two years I have chaired a Working Group of the Economic Policy Council (EPC) on improving the quality of economic statistics. The Working Group includes representatives of major producers and users of economic statistics in the Federal Government. The Working Group developed a package of recommendations of the highest priority for improving economic statistics. The President approved this package of recommendations on November 25, 1989.

During the past year the Working Group asked the agencies to submit detailed implementation plans based on these general recommendations. Based on these plans, 17 major initiatives were included in the FY 1992 budget. These initiatives fall into the following seven broad areas:

- (1) Modernizing the National and International Economic Accounts to improve their accuracy, breadth, and international comparability, including improvements to the coverage and detail of international flows of funds and services;
- (2) Increasing the coverage of the service sector;
- (3) Separating quality and inflation changes in price data;
- (4) Improving the establishment payroll and household surveys;
- (5) Tracking changes across industries;
- (6) Preparing for future statistical workforce needs; and
- (7) Sharing of statistical data.

As a key step in implementing these recommendations, the FY 1992 budget proposes \$30 million to make vital improvements in these seven areas. The initiatives are concentrated in three agencies: the Bureau of Economic Analysis, the Bureau of Labor Statistics, and the Bureau of the Census. Funds are also requested for the National Agricultural Statistics Service and the National Science Foundation.

Because of the lead times required to develop and implement improvements to the statistical system, funding requests are planned to increase in real terms in both FY 1993 and FY 1994 and then level off in real terms in FY 1995 and FY 1996. In FY 1995, the Administration is proposing a real increase of over \$50 million for these initiatives. Overall, the Administration is proposing to spend nearly \$230 million between FY 1992 and FY 1996 to improve economic statistics.

These requests represent the minimum necessary investment to make a serious improvement in the quality of economic statistics. Without these additional funds, the affected statistical agencies would operate at funding levels that are insufficient to improve adequately the present quality of their statistical programs. These proposed funds would give the statistical agencies the opportunity to go well beyond the status quo.

By approving the package of recommendations of the EPC Working Group, the President indicated the importance he places on improving the quality of economic statistics. The realization of this goal, however, depends crucially on Congressional support for this initiative. The potential benefits from the initiative represent an investment in good government.

I would like to turn now to a discussion of the seven major areas in which the Administration is proposing initiatives to improve the quality of economic statistics. First, there is a high priority for both improving the quality of the current National Income and Product Accounts and moving toward the U.N. System of National Accounts (SNA). The adoption of the SNA will significantly improve U.S. economic accounts. For example, in the current economic accounts, all government expenditures are treated as consumption expenditures. Under the SNA, government expenditures are classified separately as either consumption or investment expenditures. The adoption of the SNA will also substantially increase the comparability of the U.S. national economic accounts with those of other major countries. This effort will also include a modernization of the international economic accounts that will follow the new International Monetary Fund guidelines.

Another improvement to the national accounts would come from reducing the lag in the preparation of the input-output (I/O) tables. Besides improving the analytic value of the tables, the speed-up of both the benchmark and annual I/O tables would reduce the size of revisions in GNP estimates.

Improving estimates of international capital flows is also essential to improving the national accounts. Budget resources are being requested to improve the coverage of capital flows, investment income, and to reduce the large statistical discrepancy in international payments between the capital account and the current account. Conceptually, the sum of the capital account and the current account should equal zero. The statistical discrepancy means that errors can exist in either or both accounts, making it very difficult to interpret data on international transactions. For example, a statistical discrepancy that is larger than the current account, as was the case in the second quarter of 1990, means that it is possible that the current account deficit was far smaller than what was officially reported. Similarly, the capital account may be in error. As a result, statistics on net foreign investment in the United States may be very misleading. It is an extremely high priority that the basic data from which the capital and current account are derived be as accurate as possible. It is now very difficult to know the extent to which data on the capital or the current account are inaccurate.

Work is also needed to close several existing gaps in the coverage of international trade in services, and to address newly emerging channels and forms of trade in services. The largest coverage gap is in financial services. The initiative provides for the Bureau of Economic Analysis to undertake surveys of bank and nonbank financial institutions' noninterest service income and to improve its survey of international trade in other services.

The Bureau of Economic Analysis plays a central integrating role for the economic accounts by collecting source data from other agencies. Funds are being requested for the Bureau of Economic Analysis to support selected improvements in these source data. These funds would be used to secure additional information from administrative records held by government agencies, to support new statistical surveys, or extensions to existing surveys, and to carry out research to determine feasible and cost-effective ways of closing gaps in source data.

In the area of improving service-sector statistics, resources are being requested that would permit the Bureau of Labor Statistics to add 110 service-producing industries to their payroll survey. Resources are also being requested that would permit the Bureau of Labor Statistics to conduct the basic research needed to develop accurate, replicable, standardized measures of output for the service sector. These measures of output would permit the introduction of new service-sector price indices into programs that generate measures of producer prices and international price comparisons.

The Census Bureau currently conducts an annual survey of services and a periodic Census of Service industries. Both are in need of increased detail and

coverage. As well, only limited data on the services purchased by industries are collected by the Census Bureau. As a result, changing industry trends such as outsourcing of legal, accounting, and other services by manufacturing firms are not accurately measured by existing economic surveys. Such data are essential for GNP estimates of individual business sectors in the preparation of the national accounts. The requested funds would permit a more detailed picture of service industries as well as provide data for improved assessment of the sources of economic growth and structural change by industry.

The importance of both the service sector and the small business community to the vitality of the U.S. economy is well established, yet comprehensive measures of the financial performance of these groups are either deteriorating or nonexistent. This initiative would provide greater precision in estimates by industry, and more comprehensive data by asset size.

As I have already discussed, in the rapidly changing U.S. economy, it is often difficult to separate pure price changes from those arising from improvements in product or service quality. The research needed to determine the best way to separate the quality change from price change is difficult enough for physical goods such as computers. It can be even more difficult for services. The initiative would provide the funds needed for essential, basic research in this important area.

Monthly estimates of payroll employment published by the Bureau of Labor Statistics are a major indicator of economic activity. As my earlier example indicates, these employment estimates are subject to revisions that are often sizeable. However, through the adoption of automated data collection techniques, substantial reductions can be achieved in the size of revisions, thereby providing policy makers with both timely and more accurate information on the direction of the economy.

The Current Population Survey is conducted using paper interview forms. Computer-assisted data collection permits storage of the questionnaire on computers. The interviewer can enter a respondent's answers directly into the computer and thereby reduce the errors that commonly occur with the use of paper interview forms. The use of computer-assisted data collection would also make it much easier to administer surveys. Use of computer technology would permit the administration of a more comprehensive questionnaire, and as a result, provide richer information on both individuals and families.

The Bureau of Labor Statistics and the Census Bureau currently maintain separate lists of business establishments for their survey programs. Although not entirely identical, maintaining two separate establishment lists results in substantial duplication of effort. The first step toward reconciling these parallel lists is taking place during the current fiscal year. The establishment list of the BLS is being used

to provide industry codes for establishments currently on the Census list--thus avoiding some of the potential duplication of effort. Beginning in FY 1992, new research will be needed to expand the matching process to other sectors and to address differences in the information required by the two agencies.

The mailing lists developed for the Census Bureau's Census of Agriculture cover only about 90 percent of farms and include a large number of nonfarm establishments. This results in underrepresenting smaller farms and overcounting all others. Funds are being requested for the National Agricultural Statistics Service to create a more complete and accurate farm list for the 1992 Census of Agriculture.

The initiative to improve U.S. economic statistics also requests funding to ensure that the Standard Industrial Classification (SIC) can monitor emerging industries and develop innovative classification methods to keep up with the rapid changes occurring across all industries. This critical need is especially important for the rapidly growing service sector of the economy.

For some time it has been extremely difficult for the Federal statistical system to recruit and retain sufficient numbers of high-quality statisticians. This seems to be due not only to the pay gap that exists between the private and public sectors but also because universities have tended to de-emphasize training in the field of survey statistics in recent years.

Funds are being requested that would improve the skills of the existing Federal statistical workforce and attract highly qualified entrants by creating a Center for Survey Methods at a Washington-area university. Under this proposal, a mixture of current and prospective Federal statisticians would be able to enter a graduate degree program in survey statistics each year. In addition to serving degree candidates, the Center would also permit current Federal workers to upgrade their skills by offering a wide variety of relevant graduate courses on a nondegree basis.

Confidentiality statutes that permit data to be seen only by employees of a single agency often present a formidable barrier to effective working relationships between statistical agencies. While such statutes aid in maintaining confidentiality, they can inhibit successful joint statistical projects. They often virtually guarantee duplication of effort and inconsistencies among related data sets collected by the affected agencies.

Legislation will be prepared, in cooperation with the affected statistical agencies, to provide a standardized mechanism for the limited sharing of confidential statistical information. Sharing would be solely for statistical purposes between statistical agencies under stringent safeguards. This would improve the accuracy, consistency, and timeliness of data throughout the Federal statistical system.

To conclude, let me reiterate the importance that the President has placed on this effort to improve the quality of economic statistics. This effort is worthy of strong support.

Mr. Chairman, and members of this Committee, I thank you for your consistent interest in, and support of, improvement in the quality of Federal economic statistics. These initiatives would provide a solid foundation for making the improvements necessary for a better and more reliable understanding of the evolving American economy.

Senator SARBANES. Undersecretary Darby, we'll hear from you next.

**STATEMENT OF MICHAEL DARBY, UNDERSECRETARY FOR
ECONOMIC AFFAIRS, U.S. DEPARTMENT OF COMMERCE**

Mr. DARBY. Thank you. Mr. Chairman, I would just like to echo Chairman Boskin's thanks to this Committee and particularly to you, Mr. Chairman, for all your efforts, not only for last year in helping to get what funding was possible. Also, we know that this hearing expresses your continuing interest and, frankly, has done much for the morale of the statistical agencies.

As the Government's principal producer of economic statistics, the Department of Commerce is an enthusiastic participant in the President's program to improve the quality of economic statistics under the distinguished leadership of the Chairman of the Council of Economic Advisers, Michael Boskin.

This government-wide initiative is intended to return the American statistical system to first place among those of all the industrialized nations. In the Economics and Statistics Administration of the Department of Commerce, this initiative means that we are at the beginning of a multiyear effort to improve statistics on the coverage of the service sector of our economy—a sector that now accounts for the bulk of our gross national product—to improve the construction statistics that figure so significantly in the economic life of our Nation, to improve data on our balance-of-payments with the rest of the world and our increasingly internationalized global economy, and to continue to keep our system of national accounts and our gross national product statistics reflective of the rapidly changing economy they represent.

Among specific initiatives that we will undertake in the service sector are programs to improve measures of consumer expenditures on services and of output of service industries, and programs to develop measures of prices of high-tech goods other than computers for use in deflating estimates of business fixed investment—imports and exports.

In construction statistics, our specific initiatives include developing methods to measure nonresidential construction prices directly by means of a statistical survey, improving estimates of expenditures for buildings and structures located at manufacturing sites, and providing a set of nonresidential building construction price indices.

We will improve the quality of our balance-of-payments estimates by programs to strengthen the measures of international capital flows and to modernize international accounts.

Finally, we will undertake to modernize and extend the international economic accounts by programs to extend the economic accounts to include integrated current and capital accounts, as well as satellite accounts for research and development, and by extending the international economic accounts to include satellite accounts for pensions and

natural resources. The latter is part of an economics' and statistics' administration-wide effort to improve our environmental statistics in response to the concerns that Mr. Gore was expressing, I believe.

Mr. Chairman, that concludes my prepared statement. I want to thank the Committee for the opportunity to appear before it and testify about this important initiative.

[The prepared statement of Mr. Darby follows:]

PREPARED STATEMENT OF MICHAEL DARBY

Mr. Chairman, Members of the Committee:

As the Government's principal producer of economic statistics, the Department of Commerce is an enthusiastic participant in the President's program to improve the quality of economic statistics, under the distinguished leadership of the Chairman of the Council of Economic Advisers, Michael Boskin. This government-wide initiative is intended to return the American statistical system to first place among those of all industrialized nations. In the Economics and Statistics Administration of the Department of Commerce this initiative means that we are at the beginning of a multi-year effort to improve statistics on the coverage of the service sector of our economy -- a sector that now accounts for the bulk of our gross national product; to improve the construction statistics which figure so significantly in the economic life of our nation; to improve data on our balance of payments with the rest of the world in our increasingly internationalized global economy; and to continue to keep our system of national accounts -- our gross national product statistics -- reflective of the rapidly changing economy they represent.

Among specific initiatives that we will undertake in the services sector are programs to improve measures of consumer expenditures on services, and of output of service industries; and programs to develop measures of prices of "high tech" goods other than computers for use in deflating estimates of business fixed investment, imports, and exports. In construction statistics our specific initiatives include developing methods to measure non-residential construction prices directly by means of a statistical survey; improving estimates of expenditures for buildings and structures located at manufacturing sites; and providing a set of nonresidential building construction price indices. We will improve the quality of our balance of payments estimates by programs to strengthen measures of international capital flows, and to modernize the international accounts. Finally, we will undertake to modernize and extend the national economic accounts by programs to extend the economic accounts to include integrated current and capital accounts as well as a satellite account for research and development; and by extending the national economic accounts to include satellite accounts for pensions, and for natural resources.

Mr. Chairman, that concludes my prepared statement. I want to thank the Committee for the opportunity to appear before it and testify about this very important Presidential initiative.

Senator SARBANES. Thank you very much.
Commissioner Norwood, please proceed.

**STATEMENT OF HONORABLE JANET NORWOOD,
COMMISSIONER, BUREAU OF LABOR STATISTICS**

Ms. NORWOOD. Mr. Chairman, it's a great pleasure as always to be here. I do not have a prepared statement. But I would like to make a comment or two.

First, I would like to take this opportunity publicly to express appreciation to the extraordinary leadership of Dr. Boskin in bringing about a real effort and results in the development of improvements for economic statistics.

As you know, I'm now in my twelfth year as Commissioner of Labor Statistics. I have worked with more than five Commissioner—Chairmen of the Council of Economic Advisers.

Senator SARBANES. I know he was flattered to be called Commissioner. [Laughter.]

Ms. NORWOOD. And all of them were certainly very interested in data. But there is none who has provided greater leadership effectively in this area. And I would just like to express the appreciation, not only of the Bureau of Labor Statistics, but I'm sure of the statistical profession.

I have provided a short handout that describes each of the programs that are included in this improvement initiative for the Bureau of Labor Statistics, so I will not go into them in detail. They are extraordinarily important to us. They are in the employment area; they are in the price area; and they are also in the area of the development of new data in the service-producing sector. And I think I will leave it at that.

[The handout of Ms. Norwood follows:]

HANDOUT OF MS. NORWOOD

**BLS Activities to Improve
Federal Economic Statistics
beginning in FY 1992**

**Janet L. Norwood
Commissioner of Labor Statistics
U.S. Department of Labor**

March 1, 1991

**BLS Activities to Improve
Federal Economic Statistics
FY 1992**

<u>AMOUNTS</u> (millions)	<u>ACTIVITIES</u>
\$ 3.9	Increase accuracy of employment estimates
3.7	Expand coverage of employment, hours, and earnings in service sector
2.3	Provide additional measures of price change in the service sector
1.8	Improve price data through better adjustments for quality change
3.0	Improve unemployment measures through application of automated data collection
1.4	Enhance BLS business establishment list and work toward sharing this list with other major statistical agencies
<hr/> 16.1	

**BLS ACTIVITIES TO IMPROVE
FEDERAL ECONOMIC STATISTICS**

Beginning in FY 1992

Improve accuracy in the initial monthly employment estimates from the business survey. Introduce automated data collection methodology to speed up receipt of reports from business establishments. This will increase substantially the proportion of establishments included in the preliminary estimates released at the beginning of each month, thereby eliminating sizeable revisions. Policy makers will then have more accurate data to monitor the economy and the accuracy of the national accounts, industrial production index, and other indicators based on the BLS monthly estimates will be improved.

Expand coverage of employment in the service sector. Develop and publish employment, hours, and earnings estimates for 110 additional service sector industries, a 50 percent increase in published service sector industry detail. This enhancement, based on expansion and refocusing of the survey sample, will provide users with a full profile of service sector employment. The new industries will be phased in over a five year period; 30 will be available by 1992, and others will be added each year reaching 110 new industries by 1995.

Provide additional measures of price change in the service sector. Develop and publish new Producer Price Indexes in the areas of health services and commercial real estate. For example, price indexes for hospitals will be introduced in 1992; physicians in 1993; medical laboratories, nursing care facilities, and dentists in 1994. Several commercial real estate price indexes will also be introduced over this time period.

In the International Price Program, coverage will be completed for all transportation industries in imported and exported services--for exports, air freight and ocean liners in 1993 and air and water port fees and ocean tramp services in 1994 and ocean tramp services for imports in 1993. Transportation services represent about one-fifth of imported services, and one-fourth of exported services.

Improve price measures by developing better quality adjustment procedures. The measurement of price change for high-tech products requires new approaches to sampling, data collection, repricing, and quality adjustment, as well as the use of sophisticated econometric estimation techniques.

Two weeks ago, when the BLS issued the January 1991 Producer Price Index, we introduced an index for electronic computers, which reflected extensive research and testing. We intend to apply what we have learned in the development of the computer

price index to other industries. About a dozen industries have been identified that develop new products at a very rapid rate. For these industries, over a phased period beginning in 1992, the Producer Price program will conduct resampling on a two-year cycle, rather than the every six-to-seven years that current resources permit. In addition, hedonic techniques will be used to separate quality change from price change.

In the Consumer Price Index Program, initiatives will be undertaken in a number of areas to improve quality adjustment procedures for specific components of the index. Two areas in which research seems especially promising are housing and apparel. In both areas, price determining characteristics will be quantified and regression techniques will be applied to improve the quality adjustment models. Improvements in consumer electronics will follow; in this area, sample sizes will be expanded and statistical techniques to produce appropriate quality adjustment procedures will be developed.

Improve unemployment measures in the labor force survey through application of automated data collection techniques. The Bureau of Labor Statistics and the Census Bureau are continuing the comprehensive multi-year redesign of the Current Population Survey. In addition to the drawing of a new sample to incorporate up-to-date population information, the redesign will involve the development, testing and introduction of a new questionnaire, improvements in the longitudinal capability of the

survey, and a better data processing system. Adoption of the new questionnaire requires the use of computer-assisted interviewing. We believe that the new questionnaire will improve the accuracy of the data collected by permitting more complex patterns in questionnaire format. This proposal will fund the purchase of laptop computers to be used in data collection, staff support for the development of the central control system, and research to document the effects of computer-assisted interviews on the data.

Enhance the Business Establishment List (BEL) project to improve the BLS universe file. BLS will improve its universe file, a comprehensive list of U.S. business units used as the sampling frame for all BLS establishment surveys. Currently, the Bureau is engaged in a multi-year BEL project to improve the file structure, local identifiers, and coding of business establishments.

The project involves: 1) improved coding of multi-location businesses, 2) more frequent updating of the entire list, and 3) improved methods for the handling of newly formed establishments and those who go out of business. A concordance between company organizational structures and individual business establishments will be developed to permit analysis of the employment effects of mergers and acquisitions. Establishments will be tracked longitudinally so that analysis of changing business formation can be undertaken.

The Business Establishment List project is a Federal-State cooperative program in which the State Employment Security agencies are working with BLS to improve and expand the basic file and its structures. Initial results of this effort will be produced in FY 1993 with the publication of new enterprise statistics, including statistics on employment and wage changes in single versus multiple establishment enterprises, and statistics detailing employment and wages by enterprise size class.

This effort will improve the quality of every survey program conducted by the Bureau of Labor Statistics and has the potential for improving the quality of business surveys in other major statistical agencies as well, since BLS is also working on computer systems and administrative procedures to share the list with them.

Senator **SARBANES**. Thank you very much. We thank the panel.

First of all, Chairman Boskin, you provided us last year, subsequent to the hearing, with a list of the members of the Working Group on Economic Statistics. I wonder if you could update that and submit it to us.

Mr. **BOSKIN**. Sure. Certainly.

Senator **SARBANES**. We are going to hear later from Dr. Martin Fleming, who is Chairman of the Statistics Committee of the National Association of Business Economists. By that time, you will be gone and we won't have an opportunity to ask you about what he says. So, I'm going to reach forward and pull out of his statement—I'm assuming he will say what is in his statement——

[Laughter.]

Senator **SARBANES**. He's on the record in any event. I'm going to reach forward and pull out of his statement some things I want to ask you about.

First of all, just to show you where they are coming from, let me just quote this: "Over the past year, members of the National Association of Business Economists and its Statistics Committee have reviewed in great detail Chairman Boskin's effort. We have concluded that, while the effort of Chairman Boskin will not solve all of the problems of the economic statistical system and more work is needed, his initiative is a major step forward in the journey down the path toward rebuilding our economic statistics system."

Now, in this statement, they then go on to make a very interesting observation about the information that was available at the time that the Federal Open Market Committee in 1989 and 1990 was making its decisions. This had to do with the growth rates, the GNP figures, and so forth. They then show that the revisions of those statistics, which came later, after they acted off of the earlier figures, gave a different picture in terms of the growth rates. It was a difference in the strength of the growth, and it might have otherwise, if they had had the more realistic picture, affected the sort of judgment that they made. Of course, that raises the issue of timeliness versus accuracy, and I wonder what observations you might have.

Let me put the question to you this way. Is it possible through your initiatives and further initiatives that we diminish the supposed clash between timeliness and accuracy so that we are able to get more accuracy with existing timeliness, or are we going to have to yield on timeliness to get accuracy? And if we do that, what does that do in terms of being able to operate off of our statistics-making policy judgments?

Mr. **BOSKIN**. Well, I think it's impossible to reduce the revisions to zero because you're always going to be getting more data in real time and, in our primarily private enterprise economy, we're primarily relying on voluntary information being provided primarily; and sometimes it

comes in later rather than sooner. But, with that said, there are serious efforts in this initiative, and some have already been underway in various agencies to try to reduce the tension between timeliness and accuracy.

I might allude to one example of an FOMC situation, around the turning point when the economy started to head into recession. In the fall or late summer, early autumn, as near as we can tell, when the economy started to head into recession, the October employment decline was originally estimated—correct me if I'm wrong, Janet—as minus 65,000, and then when it was revised the next month to something like minus 175,000 or minus 180,000. That is, it was a much more dramatic decline in employment than had been originally thought.

There are a variety of initiatives the Labor Department has already taken, and there are funds requested here to improve automated data collection, as well as a variety of other things. I want to commend the BLS for its efforts in this regard. And in other areas, such as more frequent and speedier introductions of input-output tables, the size of revisions will undoubtedly be reduced. There are a variety of things of this sort and improvements in source data. For example, substantial improvements in the producer-price index, the extension of the payroll survey by 110 service industries, and the focus on a variety of ways to try to get quicker and more accurate data should help reduce that tension. But I think people will always want the data as soon as they are ready and more data will always mean that there will be some revisions.

I think what we can do, among many other things we are trying to do, is to provide more accurate data on a more timely basis and reduce, in some of the major series, the size of the revisions relative to what they otherwise would have been. But I think that tension is inevitable, and if we were to announce, for example, we wouldn't publish the first two estimates of GNP for the previous quarter and only wait for the final one, there would be a howl. And if we'd only publish the first one and never revised it and got it much more accurate until, say, the end of the year, there would be a howl. So, tension is always going to exist but we're hoping to reduce it substantially.

I might see if Janet or Michael would comment.

Mr. DARBY. Well, I think, in terms of the GNP accounts that you specifically mentioned, the initiatives aim to do two things; one of which is by improving the speed and accuracy of the source data, reduce the size of the revisions, and that's very much a part of this. The other is to reduce biases and errors that have persisted largely because we don't have any source data throughout, from the earliest report to the latest. So we're trying to do both, and I think that it will be substantially improved.

The Census Bureau produces a lot of the source data, and BLS has an integrated program to also improve what we use. So, I think that the

total effect from all of these things together would be to substantially reduce the size of the revisions.

Ms. NORWOOD. Mr. Chairman, I'd just like to make one comment. And that is that I think there is a very important role for this Committee in this whole process. This is an integrated set of improvements. If the national accounts, for example, are really going to be improved, it means that the data from the Census Bureau and the Bureau of Labor Statistics also need to be improved. We have separate appropriations Committees, and I think that's enough.

Mr. BOSKIN. That speaks for itself. [Laughter.]

Senator SARBANES. Well, let me make just a couple of observations.

First of all, Dr. Fleming says in his statement that, "it is not without irony that with the exception of purchases by state and local governments, the 1989 revisions"—this is making reference back to what I was describing earlier—"occurred among data items for which the Boskin initiative has indicated significant shortcomings exist and corrective action is required." So you are, at least from Dr. Fleming's perspective, working in the areas that led him to make this very point, which gives me some encouragement that we can, indeed, enhance the accuracy without having this slip on the timeliness. That is certainly the approach, I think, we need to follow.

At this point, I'm going to put in the record, an article by Wassily Leontief, the Nobel Prize winner, which I'm sure you are all familiar with. This was last fall, and it is entitled "Federal Statistics Are in Big Trouble." He is talking particularly about the lag in the input-output.

[The article by Wassily Leontief follows:]

ARTICLE BY WASSILY LEONTIEF

Federal Statistics Are in Big Trouble

By Wassily Leontief

The problems with the recent census are shocking not just because of their impact on regional apportionment but also because they show the sad state of the Federal statistical system.

The publication in 1790 of the first census, compiled under Thomas Jefferson's direction, showed how serious our Founding Fathers were about being able to gauge the changing state of society and the economy. Indeed, in the next 200 years the census became a model for the development of similar statistical systems throughout the world.

In the 1980's, when government came to be viewed in some influential quarters as an enemy of the people, the census and entire Federal statistical system fell on hard times.

While our system employs very dedicated, highly qualified individuals, the budgetary appropriations provided for their task fall far short of what's needed. Moreover, with a rapidly changing economy, the job has become more complex. Today's census difficulties testify to this.

To give another example, in my field — the compilation of the input-output tables that describe the flow of goods and services between the different sectors of our economy in a given year — the state of affairs is equally bad. Those of us at the New York University Institute for Economic Analysis are far from happy about this situation.

The Federal input-output unit has been reduced to 22 people, including office help. There is also a hiring freeze. No wonder the input-output tables for 1972 have not yet come out.

Wassily Leontief was awarded the Nobel Memorial Prize in Economic Science in 1973.

With the changes in our economy, these figures, when published, will be only of historical interest.

By contrast, in Japan the compilation of input-output tables is done by 200 economists and statisticians under the direction of the powerful Administrative Management Agency. A four-volume table for 1975 was published in March 1979. The 1985 table has already been published.

Moreover, the Japanese published a U.S.-Japan table showing the dependence of each U.S. industry on each Japanese industry, and vice-versa. Therefore, I wasn't surprised

The Japanese
know more
about our
economy
than we do —
and sooner.

NYT 10/1/90

when a member of the U.S. team negotiating trade matters with the Japanese told me that his Japanese counterparts seemed to know more about our economy than we do.

Some proponents of privatization suggest that diminished support for Federal statistical services will eventually be compensated by private corporate data-gathering organizations. This solution seems about as effective as replacing the klieg lights in a baseball stadium with player-held flashlights. As the U.S. struggles to maintain its competitive position in the world, we can ill afford further deterioration in the data base indispensable to the efficient conduct of all public and private business. □

Mr. BOSKIN. He was the inventor of input-output.

Senator SARBANES. I understand that. So, he has a vested interest.

Mr. BOSKIN. He's correct on the problem. I wouldn't agree necessarily with everything he has to say, but he's certainly correct in identifying that as a serious problem.

Senator SARBANES. And he makes a very striking contrast. He says, "The Federal input-output unit has been reduced to 22 people, including office help. There is also a hiring freeze. No wonder the input-output tables for 1972 have not yet come out." And then he says, "By contrast, in Japan the compilation of input-output tables is done by 200 economists and statisticians under the direction of the powerful Administrative Management Agency. A four-volume table for 1975 was published in March 1979. The 1985 table has already been published." And then he goes on to say, "Moreover, the Japanese published a U.S.-Japan table showing the dependence of each U.S. industry on each Japanese industry, and vice-versa. Therefore, I wasn't surprised when a member of the U.S. team negotiating trade matters with the Japanese told me that his Japanese counterpart seemed to know more about our economy than we do."

It leads me to the second point of Dr. Fleming's, and that is that if long-term improvement is to be truly realized, the statistical system must be organized in a more efficient manner. He then says, "the position of Chief Statistician is currently part of the Office of Management and Budget Office on Information and Regulatory Affairs. This organizational structure should be changed. The Office of Chief Statistician should be created and it should report to the director of OMB." And he goes on to say that that would enhance the importance of the function and that it would give a strong advocate of the statistical program. You would have an unbiased and impartial, nonpartisan statistician. In fact, they want to give it an extended fixed term here. He notes that you have assumed the advocacy role over the past 2 years, but it is not in a sense a defined part of the role of the Chairman of the Council of Economic Advisers.

I wonder whether you think we need some kind of—I'm actually trying now to even think beyond—I have two other questions to get you beyond—I mean, the more you do, the more people want you to do, obviously. And——

Mr. BOSKIN. That would be a lot better than the more you did, the more people wanted you to stop. [Laughter.]

Senator SARBANES. What do you think about changes in the government structure and enhancing the statistical function within the Office of Management and Budget?

Mr. BOSKIN. Well, let me make three simple points. I have not thought deeply about this proposal. It came to my attention yesterday,

actually, and it's one that I will take under advisement and discuss with my colleagues and try to get some evaluation of.

There are two things that we did do in the Working Group that covered, perhaps, more grandiose organizational issues. One was to conduct a substudy of the statistical organizations in other countries—what was good and what was bad about it—as well as their statistics. Several of those countries—several that have very good statistics, as well as some that have very poor statistics—have one central statistical office—Statistics Canada, for example—is one that has a very good statistics system. We asked ourselves, does it make sense to try to have a Statistics America or have one large statistical enterprise rather than the large number we have; many of which are in economic statistics, some in other areas but scattered through 70-odd agencies. We saw a lot of pros and cons in all of that. But in the end, we decided that at this time the advantages of decentralization, generation of ideas, competition among the agencies and so on, was beneficial and that, if we could work out a greater degree of cooperation among them, that would go a long way to solving some of these problems—although not the one that Janet mentioned about each having a separate appropriations and oversight committee. So, we decided that the move we thought would be desirable would be to have a much greater degree of cooperation among the agencies. One of those is with very, very careful safeguards on improved data sharing on an important, necessary basis—let me repeat, with very stringent safeguards between the agencies. That is the proposal we came up with in this regard. I will take the one you mentioned and the one that apparently will be proposed later this morning, or this afternoon, under advisement.

Senator SARBANES. I am going to yield to Senator Gore.

Let me just mention two very quick things to you. One is, now that you're moving on the economic statistics, has any thought been given to broadening the charge of the Working Group to bring under it the education, environmental, and health statistics that we've—as I understood your response before, you perceive them to be outside of the charge of the Working Group? is that correct?

Mr. BOSKIN. With some minor modification. There are some; for example, the Natural Resources and Environment satellite account within the broader National Standard System of National Accounts that will be going on in BEA.

In this year's *Economic Report to the President*, we give a lot of emphasis to education and human capital and to the importance of today's elementary and secondary education to tomorrow's workforce. So, I am very sympathetic. I don't think education is unrelated to economics. But the traditional sources of data on education and in other similar areas generally do not feed directly into the core economic statistics. Also, the way our Cabinet councils are organized in the executive branch, health, environment, crime, and a variety of these

other issues have Cabinet secretaries who sit on the Domestic Policy Council primarily, as opposed to the economic policy council. And with the interaction between the two groups, we have discussed making improvements in those areas. I participated in those.

Senator SARBANES. Do you sit on the Domestic Policy Council, as well?

Mr. BOSKIN. Yes.

Senator SARBANES. That certainly gives us an opening, doesn't it?

Mr. BOSKIN. That's correct.

Senator SARBANES. Could you give some thought as to whether there is some way to get a charge to address the statistics in those areas with comparable—

Mr. BOSKIN. I will certainly do that and explore that in more detail.

The point I was trying to make was that the relevant people and expertise has a modest, but not gigantic, overlap and that's why you would be looking at more people from some other agencies, from the Education Department, from HHS, etc. While they equate some role in this, it would be less than the Federal Reserve, BEA, Commerce, Labor, Agriculture, and so on.

Senator SARBANES. The other question is now that the Working Group has, in effect, developed a thought-out program—last year we were catching up, and we tried to move in and get both your recommendations and our efforts some appropriations—has the Working Group given any thought to a strategy for addressing the appropriations requests in which the Working Group itself might be in direct contact with the appropriating subcommittees to bring home what you are trying to do?

Mr. BOSKIN. Well, we have discussed how to make sure that this, which is an administration-wide presidential initiative, does indeed get an—pardon the expression—appropriate hearing before the appropriators. I don't know that it would be sensible for the Working Group to be deal with each of the subcommittees and so on, but we're working on a strategy to do that. I've talked with relevant Cabinet secretaries to make sure that they understand that this cuts across the various departments and agencies and is a presidential initiative, and we will be working with their budget officers and so on to carry forward that idea.

Senator SARBANES. Well, maybe together we can give some thought to that and see what we think would be a more effective approach.

Mr. BOSKIN. Very good. We'd be anxious to do that.

Senator SARBANES. Senator Gore.

Senator GORE. Thank you, Mr. Chairman. I have certainly enjoyed the dialogue I have been listening to here. And that op-ed piece by Mr. Leontief is really very troubling and, yet, I am also encouraged at the progress that's obviously being made. And Mr. Boskin, we know

Commissioner Norwood well enough to recognize that when she gives a commendation, it means something. [Laughter.]

Mr. BOSKIN. It was very flattering and she was being somewhat humble and downplaying her own role. It's been—

Senator GORE. Well, that's not unlike here. But it said a lot about what you're doing in this area, too. And I'm impressed.

Let me turn now to the issue that I mentioned in my opening comments. I don't believe that this is an issue that is collateral to the way we collect, analyze, and interpret our economic statistics. I think it is central to the way we deal with economic statistics.

I believe that we have a deeply ingrained myopia—and I'm not talking about the present team in the White House. I'm talking about the entire method used for accounting for things like economic progress, national income, productivity, etc.

I believe that our way of thinking was shaped during an era 50 years ago and even earlier in this century when natural resources were assumed to be virtually limitless. It was a time when the industrial world was exploiting the freely available natural resources of countries that were then in the colonial phase of their national existence, and it appeared that we were justified in concluding that natural resources are not scarce. As a result, John Maynard Keynes and others emphasized labor inputs and capital inputs almost to the exclusion of any effort to be precise in paying attention to the way we deal with natural resource inputs.

Now, because the power of our civilization to exploit the resources of the earth is beginning to push us up against the limits—not in absolute terms but in terms of the limits of natural systems to renew their annual yield at a rate that matches our annual demand from those natural systems—we face the challenge of going back to rectify this massive oversight that began at least a half century ago.

One of the best known examples of this problem is the way we account—the way we measure gross national product. There has been a study by a team of economists led by Robert Repetto of Indonesia. Their gross national product continued to increase according to the standard measure and then suddenly fell off a cliff. Every time they cut down another 100,000 acres of rain forest, it was counted as income. There was no depreciation of that natural resource in their system of accounts, or in that used by the World Bank, or the other bodies that look at these things and used them as the basis for making loans and determining whether or not something is going to move a country like Indonesia forward or backward.

Now that's Indonesia. What about California?

Mr. BOSKIN. It could use some rain. [Laughter.] I'm a Californian. I don't mean to be flip.

Senator GORE. It could use some rain. It could also use a way to accurately measure the economic significance of natural resources,

because if we assume that natural resources are not scarce and that it is unnecessary for the economics profession to be precise in telling us the economic significance of the way we use natural resources, we can fall off a cliff economically just as Indonesia did. California—I hope this is not the case, but many fear that if this continues California is in the process of doing that right now.

We're using allegedly free water to grow our rice for 10 cents a pound and sell it on the world market for 3 cents a pound. Eighty-five percent of the water in California is used by 85,000 farmers, while 32 million other water consumers get by on the remaining 15 percent. Now, this is not the fault of the farmers. But, we are not providing accurate economic statistics. We're not giving them adequate measurements.

To take another example. Your team analyzed the effect of the Clean Air Act when it was proposed as almost certain to diminish our national productivity. The companies that make cars, among others, will have to spend more money per unit of output in order to deal with the stringency of the Clean Air Act. And to the extent their reporting feeds into the national calculation, productivity goes down. The fact that less pollution is put into the air means that other companies spend less money to cope with its consequences. Your analysis completely ignored those expenditures that would be foregone. Now, again, this is not an accusation aimed at you and your team of economists. It is an accusation leveled at the entire method we now use for calculating productivity.

To take another example, the discount rate, when applied to natural resources, assumes that those who will use goods in the present always have absolute priority over those who will use them in the future; at least in those cases where application of the discount rate results in a choice in the present to completely destroy a natural resource that might otherwise be available for use by future generations.

Any business that counts the liquidation of inventories as income faces the danger of bankruptcy. But that is precisely what we do in our current system of economic accounting where statistics governing natural resources are concerned. Any business that fails to deduct for depreciation of capital equipment faces the danger of bankruptcy. But, again, that is precisely what we do in our current way of accounting for natural resources.

What about the Ogallala Aquifer which underlies much of the High Plains? In some areas, the water table has been drawn down a hundred feet. When will that area fall off a cliff? Sometime in the next century? We don't know. But, at some point, if the present way we use that natural capital is continued, there could be massive bankruptcies of all the agri-industry depending upon that resource that we now assume is not scarce.

What about the top soil in Iowa? In the last 150 years, 50 percent of that top soil has floated past Memphis, Tennessee. The decisions made on what kinds of agricultural techniques are chosen attempt to maximize

profit and minimize loss, as those terms are currently defined and measured. If a new technique can maximize, can increase profit as we currently define it at the expense of more top soil being loosened and lost and more pesticide residue being filtered down into the underground water table, that is described in our current economic statistics as an intelligent choice. According to the measuring system that you are now reviewing, that will be indicated as the right choice. If, in the next generation or the generation after that, the land becomes fallow and the water becomes unusable, they will look back and say: "Why did they make that choice? That was really dumb."

Insofar as you are now engaged in what is otherwise recognized as an exemplary effort to look at things that have been too long ignored and bring them up-to-date in accordance with the new knowledge available, how in God's name can we continue to ignore this massive oversight in the way our economic statistics are collected and used?

Mr. BOSKIN. Senator, let me make first a general remark and then try to respond to your examples and specific concerns that I was able to keep track of.

First, it's precisely because of a concern about natural resources and the environment that one of the major features of the switch to the SNA from our current system of national accounts is going to feature better measurement of the environment. I'll come back to that in a second and ask Dr. Darby if he would like to comment.

The general notion of externalities, I think, is a very important one. There are examples that are important and you, by identifying the environment, have indicated that one where social costs won't necessarily equal the private costs in the market and market prices, unless something is done to adjust for it, won't adequately reflect the cost to society of certain activities. The same is also true on the benefit side. If we clean up the environment and, if we have cleaner air, that's valuable and we ought to figure out a way to value it. I'll come back to that, but let me just try to take these in order.

You mentioned Indonesia and the World Bank Lending Program. The Administration has worked with the World Bank to have environmental concerns placed in a much higher priority in their lending decisions. I think that that is all to the good.

Senator GORE. May I interject on that point?

Mr. BOSKIN. Yes.

Senator GORE. The United Nations (UN) reviews its system of national accounts every 20 years. They're in the midst of that review now. Their response to these concerns has been that, yes, these concerns sound absolutely valid. And 20 years from now, at our next review, we'll have to address this. They don't have the resources to address it now, they say, because the United States, unique among all the nations participating, has taken the position that we cannot spend any money at

all on the kind of review needed to change the UN system of national accounts.

Mr. BOSKIN. Well, I will look into that.

Senator GORE. I know that. I've met with your people on that. And they're doing good work, but ... anyway, go ahead.

Mr. BOSKIN. And I would say, while I'm not aware—and I will try to find out about the concern you expressed—Carol Carson from the Commerce Department is, if you'll pardon the expression, kind of The Czarina of the United Nations efforts in this regard.

Mr. DARBY. That happened last month.

Mr. BOSKIN. That happened last month. So, I think perhaps our leadership position in this may evolve to be somewhat better. But, certainly, we are working on our own system of accounts for the United States.

You mentioned California. I'm a Californian. And I didn't mean at all to be flippant about water. It's a major problem. And when farmers are provided water at a few cents an acre foot when it can sell for many dollars—especially in drought times—then, clearly, the valuation is not being reflected in all of their decisions on exactly how to irrigate and on what types of crops to plant. I would note that there are some innovative discussions of allowing more flexibility of farmers for selling their water, given the much greater value in urban uses in the drought conditions California now faces.

I'd like to just say something. I grew up in Southern California, or at least I tried to, and lived in California almost my entire life, with the exception of a year when I taught at Harvard, until I moved to Washington. And it's not coincidental, having grown up in Los Angeles, which has the worst urban pollution by an order of magnitude of any large city in the United States, that that influenced me in my thinking. And it's not coincidental that, while the media accounts emphasize my role in trying to make sure that, for any given environmental objective, the costs to the economy were as small as possible, I was a strong advocate and worked closely with Administrator Riley and everyone else actively involved in the Administration's team in the development of the Clean Air Act. And had I not believed that the benefits of decreased pollution, acid rain, and toxins were worth the investment in the traditional way we measure lost productivity and so on, I would have opposed it. And, indeed, I was a strong proponent. So, I do want to say that, while you raise some legitimate accounting problems on the cost side, we also have the flip side in those areas where we've made environmental progress, and some of those have been documented. It's not across-the-board; there's some retrogression in other areas. We're not doing a very good job of valuing and adding it and that's one of the things that, hopefully, the Commerce Department will be trying to do in its environmental program. I would also mention that this is an issue that has long concerned me. I wrote an article in the *American*

Economic Review a few years ago on ways to try to get the value, for example, of mineral rights and things of that sort, given that they weren't actively traded on markets.

Your point about future voters not being adequately represented, not having a vote except to the extent that their parents and grandparents' conscience was reflected in how they voted in making these decisions in the marketplace and in the public arena, is legitimate. It's also reflected in how we've been able to run very large budget deficits for a long time. And one of the reasons for that is that we're not actively reflecting the concerns of future taxpayers. So, I agree with that generically. We may or may not agree on every specific application.

I know little about the Plains Aquifer. I've forgotten its name. That's an embarrassment to all of my friends——

Senator GORE. Ogalala.

Mr. Boskin. ——from the Middle West. But I'm aware that the water table has been declining. I would make the general statement that one thing that has to be integrated into all of this is a reasonable sense of the extent to which technology will be able to work with these shifts to offset some of the environmental and other concerns. So, it may be that there are costs and technological limits to getting water from deeper in the ground. You can't go to the center of the Earth or anything of that sort. We need to know the limits of technology to enable us to deal with some of these concerns.

And, finally, I'd just like to make a comparison to the centrally planned economies to take the extreme opposite of the concern you indicated where there is no—where there has been traditionally no—price systems for expanding the system to account for externalities. There's no way with pollution fees, or charges, or things of that sort to do very much about it. And we see countries, the ones whose environments are literally poisoned, where the firms only produced output—measured in some physical unit—quite aside from whether the people even wanted the output, that the central planners dictated. And if the easy way to dispose of their industrial waste was to dump it in the river, they dumped it in the river. Bill Riley tells me that some large fraction of the lakes in the Soviet Union burn at night because of how much stuff has been dumped in them.

So, I think you've raised a legitimate set of concerns, and I didn't mean, by tossing the ball to Michael Darby, that this wasn't a concern that we shared and one that we understand is a legitimate one. We are trying to make progress here.

Senator GORE. Mr. Chairman, I will cease and desist because, as I acknowledged earlier, I'm aware that this is not in the center of the main topic today. And, again, I appreciate the opportunity, which I will take advantage of later this year, to talk about these issues. And, perhaps, Mr. Boskin, you can come back at that time.

Mr. BOSKIN. Sure.

Senator GORE. Just very briefly to comment on a couple of the points you made in response, I don't think technology will save us. It will solve some of the problems we are creating. But I believe it's high time we recognize the phenomenon of technological hubris that tempts us to go farther and farther into a destructive relationship with Nature on the assumption that we will be able to work our way back out again.

I've heard Fritz Hollings say, "When you're in a hole, stop digging." And I think, at some point, we need to reach that conclusion here.

With respect to planned economies, I fully agree. One of the great lessons when the Iron Curtain lifted was the horrible devastation that has been caused there. I went personally and visited the Ural Sea, which now has two-thirds of its water gone, and I won't take the time to describe the other consequences that have come about there.

But, again, to conclude with the comments I opened with at the beginning of the hearing. Now that we've won the war with central planning and communism, we have an obligation to go farther and to recognize how we are not addressing some of these same problems. For example, you talked about cooperating with Bill Riley on the Clean Air Act. I was discussing the tougher proposal, which was rejected. And, on another occasion, we'll talk about your role in helping to frustrate any meaningful response to the global warming problem, which is the biggest of these. But that's for another hearing.

Mr. BOSKIN. I'll be happy to discuss with you publicly or privately, Senator.

Senator GORE. Good.

Mr. BOSKIN. I don't know that I agree with the characterization but, in any event, it's an important issue and one we should discuss.

Could I please ask Dr. Darby if he would want to add something since his agency is going to be doing the environmental work?

Mr. DARBY. Thank you.

I actually felt a little bit with both the Chairman and with you, Senator, that I was the choir being preached to, which is probably useful because the choir is usually the ones most sympathetic to the preacher's sentiments and might actually do something. So, let me tell you about something we're doing. First, in an effort to get the advantages of integration that were discussed earlier by the Chairman, we have made a real effort within what's now called the Economics and Statistics Administration to integrate the efforts and the thinking into a real team of the Census Bureau, the Bureau of Economic Analysis, and the smaller offices in the Administration. We've been working very hard not only to share data in very limited areas, permitted by Congress last year within the ESA, but also with the Bureau of Labor Statistics. We plan to go forward with that.

One of the unifying themes of our budget proposal this year, which cut across all the agencies of the ESA, is the environmental one. It is our belief that the issues you've spoken to, and you've also heard from

Senator Kasten and others, are very real ones and ones that we must deal with.

We're participating very actively in the ongoing professional debate on exactly how you measure the cost of pollution and resource depletion and the benefits of abatement and technological innovation, which makes, let's say, oil resources recoverable. How do you actually account for those in a professional, precise way?

I don't think this Committee would be happy to have any political appointee, even me, basically deciding how much GNP grew this year arbitrarily. It's fine for an outside scholar to make largely arbitrary decisions and come up with useful figures. Repetto has done that. I've done that in several monographs in other areas, and those are useful. But, as a responsible policymaker, I have to say that it is really important that we do this right and that we do it in a reproducible way, so that Congress, GAO, and everyone can hold us accountable for year after year following sound methods. That is our intention. So, we have a program to gather more data in the Census Bureau, to use that data to develop accounts, and we intend to take a leadership role in terms of the—by adopting the System of National Accounts—which, after all, is a balance sheet and an income statement that has to be related. And we're going to have those natural resource accounts underlying that. We're intending to take a leadership role for the world. Some of the areas are relatively simple. And those are particularly important for some of the less developed countries you spoke to. It's our belief that, as we adopt those methods and show how they can be done, other countries will quickly follow. They certainly won't wait 20 years. Indeed, I think that we could encourage that.

There's an ongoing discussion at the UN on this issue, and since last month, our Deputy Director of the BEA has been given special powers to get things moving on the SNA and get things going. I think that I know her well enough to know both her leadership and commitment to these issues. So, I think everything that can be done at the U.N. in terms of leadership will be done.

Thank you, Senator.

Ms. NORWOOD. If I may just make a comment, Senator, I wouldn't like you to believe that the statistical system has not been working hard on some of these issues. I agree with Dr. Darby that they are extremely difficult to quantify. But way back in the early 70s, the Bureau of Labor Statistics struggled with the issue of how to treat in our Consumer Price Index the development of antipollution devices on automobiles. Was that a quality improvement? Was it a price change?

I'm rather proud of the leadership that the Bureau took. I was then Chief of the Consumer Price Index Division. Unfortunately, we were overruled at a later time. But the point is that there is a great deal of interest in these issues that relate exactly to the kinds of things you're talking about. What we're really getting at is the measure of output.

And the other point I'd like to make is that in our productivity program we are moving forward in the development of multifactor productivity, which goes beyond capital and labor to energy and other raw materials of various types so that we will be able to look at some of those issues.

Mr. DARBY. If I can just follow up and tie it back to remarks made by both Senator Sarbanes and Chairman Boskin.

When I first arrived at the Commerce Department in early 1989, I had the picture of a statistical system under great stress in which, by and large, people were able to continue doing the things that they had been doing until they were unacceptable, that no resources to adapt techniques, adapt methodologies to the changing economy and our changing knowledge and understanding of the economy.

The movements that we've seen in the last year are moving toward letting us have the resources to think about doing things better. So, I would say that this is an example of exactly the sort of thing that this initiative is permitting us to deal with in a serious way as hasn't been possible for a decade.

Senator SARBANES. I know Chairman Boskin has another meeting he has to get to, and I do want to put a couple of questions before you get away, but I do think that Senator Gore has raised a very far-reaching and fundamental issue. And I agree that we must find some way to build it into the system itself and not have it external, because it doesn't get weighed in the balance the way it ought to be as a consequence. And we end up making the sort of decisions that he made reference to which, under the existing system, seem to make a lot of sense. But, with any perspective, it would be found to actually be short-changing the future. And I'm pleased to hear some attention is being given to it and more will come.

There's one area I wanted to ask about very specifically before I let you go. As we are now entering a recession, I'm concerned about the transitioning in and out of the workforce. I understand we used to do research on the flows between employment and unemployment and in and out of the labor force, but that's now not being done. Is that correct? I mean—

Ms. NORWOOD. No, that's not quite correct, Mr. Chairman. As you're well aware of all of the employment measures we have and of the improvements that we're bringing about, I think perhaps what you're referring to is the National Longitudinal Survey.

Senator SARBANES. Well, I was going to lead into that because I am interested in that. I think we need some good data that track the same people over a sustained period of time. It seems to me that gives us some dimension about the labor market that would otherwise not be available. Where are we on those national longitudinal surveys?

Ms. NORWOOD. We're really, I think, doing well in many areas. In this initiative there are funds for extending the Survey of Income and

Program Participation that the Census Bureau does, which follows people for, oh, 2½ to 3 years. There are also plans underway in the budget this past year for continuing redesign of the Current Population Survey that will provide for a longitudinal aspect to the CPS, using the same survey and carrying that forward for 2 years, to be able to look at the durations and flows into and out of on a monthly basis the employment and unemployment strains. And then we have the National Longitudinal Survey (NLS), which was begun many years ago by the Employment Training Administration—then the Manpower Administration that was transferred to the Bureau of Labor Statistics a few years ago. We have in the NLS an older women's ... it started out as young women 21 years ago. We have followed that group of people for 21 years now. We also have a youth supplement to our youth survey that was started 10 years ago, in 1979, I believe. So it's more than 10 years ago. These surveys are an attempt to get at labor issues. We have ... there are longitudinal surveys done at the University of Michigan, the PSID, for example, which are very valuable for looking at some of the poverty population, and other things.

What is extraordinarily valuable about the NLS is the opportunity to look not just at those parts of the population but at the employment experience in great detail, so that we can get at those people who are on the margin of poverty and who are working with very low income—what we in BLS call the working poor and which you and I have discussed many times.

So, we do have those two surveys, and we are looking at the NLS to see whether it might be possible sometime in the future to develop another youth cohort. These are age cohorts. They differ from some of the other surveys, like SIPP and others. They have a very important place, I believe, in the whole system of labor-market data.

Senator SARBANES. I am encouraged to hear that, and I hope we can continue to develop it.

Chairman Boskin, your group has recommended, as I understand it, a multiyear budget investment.

Mr. BOSKIN. That's correct.

Senator SARBANES. I take it that that doesn't mean the group has ended its labors. Will it continue to be an ongoing group and continue to focus on the statistical area?

Mr. BOSKIN. Yes, it will. Among other things, we're going to try to monitor the followup and deal with trying to make sure that the resources—human and financial—are there. And then, as things are going, make sure that the integration across the agencies occurs, make sure that we're on track and, as other issues arise, become more important than we were able to anticipate, that we missed or it became obvious, we will continue to do that.

Senator SARBANES. Well, I'm pleased to hear that.

Mr. BOSKIN. It is not disbanding.

Senator SARBANES. I look forward to further hearings. We commend you again on the effort that you have undertaken. We think it is an important one. It's already made a contribution. It has the potential of making an even more significant contribution. And while it's not a large area in the total scheme of things, you know, we can do things better there. It has a very important impact, and we appreciate your efforts very much.

Mr. BOSKIN. Thank you very much, Mr. Chairman.

Senator SARBANES. I thank the panel.

Mr. DARBY. Thank you.

Senator Sarbanes. If our next panel would now come forward, we would be happy to hear from you.

The Committee will now hear from Dr. Martin Fleming, who chairs the Statistics Committee of the National Association of Business Economists. He, himself, is the Vice President of Planning Cahners Publishing Company. And Mr. William Hawkes is the Vice President and Chief Statistical Officer of the Nielsen Marketing Research of A.C. Nielsen and Company.

Gentlemen, we are very pleased to have you with us. I think you can summarize your statements. We've already used a good part of yours, Dr. Fleming, this morning in an effort to get some response out of Chairman Boskin on some of the points you were making. We would be very pleased to hear from you now.

**STATEMENT OF MARTIN FLEMING,
CHAIRMAN, STATISTICS COMMITTEE,
NATIONAL ASSOCIATION OF BUSINESS ECONOMISTS,
VICE PRESIDENT, PLANNING CAHNERS PUBLISHING COMPANY**

Mr. FLEMING. Thank you, Mr. Chairman.

I appreciate the opportunity to present my views and the views of the National Association of Business Economists to the Committee today. I also appreciate the interest of the Committee, as well as your personal interest, Mr. Chairman, in the issue of economic statistics.

Improving the quality of economic statistics is a task that the National Association of Business Economists believes should be of the highest priority for the Bush Administration and the 102nd Congress. Structural economic change, such as the growth of the service sector and the internationalization of markets, has diminished the ability of the statistical system to measure economic activity. This diminished ability has put effective economic decisionmaking at risk in both the public and private sectors. Action by the Administration and Congress is now required to repair, rebuild and restructure the economic statistical system.

Decisionmaking in the decade ahead and in the next century must be guided by an accurate representation of the U.S. economy, its growth and changing structure. As we have heard again this morning, improving the quality of economic statistics has also become a high priority of Michael Boskin, Chairman of the President's Council of Economic Advisers.

His effort has become known as "The Boskin Initiatives." Over the past year, members of the National Association of Business Economists and the Statistics Committee have reviewed Chairman Boskin's effort in great detail. We have concluded that, while Chairman Boskin's efforts will not solve all the problems of the statistical system and more work is needed, his initiative is a major step forward in the journey down the path to rebuilding our economic statistics system.

The result of our work is contained in a report that we are releasing today to the press and to the public, and we are submitting the report to you for the record.

Senator SARBANES. We are very pleased to have the benefit of the report, and I have had a chance to look at it. I want to commend your Committee for its obvious efforts in that regard.

Mr. FLEMING. Thank you, Mr. Chairman. Despite the lengthy recitation of the many problems related to the quality of economic statistics and the recent proposals for solving some of these problems, many remain unconvinced of the need for action.

Because of the conflicting priorities that the Congress must confront, only the most pressing problems are likely to receive increased funding. Therefore, it has become incumbent upon the users of economic statistics to show that significant problems can be attributed to economic statistics and that by using these data public and private decisionmaking has been fundamentally misdirected.

Errors that may be made in policy judgment are inherently unobservable. It is impossible to know how economic outcomes would have been different had a particular policy taken a different course at a particular point in time. The unknown efficacy of public policy is, in large part, responsible for the unobservable nature of policy errors. The effects of individual policy actions are generally not unambiguous and are subject to well-known disagreements among professional policy analysts.

Measurement is further complicated by concomitant policymaking activity on a variety of policymaking fronts. Thus, isolating the role that the lack of complete information plays is virtually impossible.

These difficulties, notwithstanding, our report reviews the GNP data of the quarters of 1989, which were available on the various dates that the Federal Open Market Committee met during 1989 and early 1990.

Figure 1 in my prepared statement, Mr. Chairman, shows quarterly growth rates for GNP over the period. The figure shows generally slowing growth that was occurring during 1989 and 1990. Figure 2 shows GNP growth rates, which were available for the March 27, 1990

FOMC meeting, compared to the current estimates of 1989 GNP growth. The complete set of figures in my prepared statement show that, as growth slowed over the year, monetary policy was eased.¹

For instance, as a result of the December 18-19, 1989 meeting, a directive was issued to reduce reserve pressure slightly during the intervening period. However, by late 1989 and early 1990, despite the easing of policy, growth was slowing to an even greater extent than was known at the time. By March 27, 1990, when all 1989 quarterly data were final; that is, with the third release of the quarterly data, growth in the last three-quarters of the year was estimated to be 83 percent stronger than it now appears to have been. How the appearance of stronger than actual growth influenced monetary policy will never be completely understood.

It is also fair to observe that members of the FOMC were concerned about the high rate of inflation over the period in 1989 when growth was slowing. While real growth may have been overestimated, monetary policy might have achieved the appropriate degree of ease if the rate of inflation had been equally underestimated. However, a review of the Bureau of Economic Analysis data releases shows that the final quarterly estimates of the GNP implicit price deflator were very close to the current estimates. And Figure 3 in my prepared statement shows these estimates. Thus, rates of inflation were fairly accurately understood at the time monetary policy was being set.

Revisions to the 1989 National Income and Product Account data that resulted in the large revisions to GNP quarterly growth rates were in two well-defined areas. The single largest revision, which accounts for two-thirds of the total revision, was in personal consumption expenditures. Nearly all of this change occurred in spending by consumers for medical care.

The other revision, which accounted for the remaining one-third, was in government purchases. Again, nearly all the revisions occurred in one area, which was spending by state and local governments. In addition, downward revisions were also made in spending for information processing, related equipment, and residential remodeling.

As you have pointed out, Mr. Chairman, it is not without irony that, with the exception of purchases by state and local government, the 1989 revisions occurred among data items for which the Boskin initiative has indicated significant shortcomings exist and corrective action is required.

One difficulty associated with the current method of estimating GNP is that the estimation process relies on the use of annual data surveys for components which, as a result of structural economic change, have become a much larger part of the total.

¹ See Figures 1-4 in Mr. Fleming's Prepared Statement on pp. 63-66.

Three decades ago, expenditures by consumers on services were approximately 25 percent of total GNP. In 1989 spending by consumers for services was over 35 percent of total GNP. Similarly, spending by state and local governments over the same period rose from 9 percent of total GNP to 12 percent of total GNP. As a result of these increases, annual surveys are no longer adequate to measure these components of GNP. Expenditures by consumers for services and spending by state and local governments now account for nearly ½ of total GNP. Thus, more extensive quarterly surveys are necessary. This is a good example of structural economic change and inadequate funding combining to reduce our ability to measure economic activity.

Mr. Chairman, the problem of funding for the statistical system is now more than a decade old. It must be solved if progress toward the goal of improving economic statistics is to be made.

Our report presents measurement of spending on core economic statistics programs. Figure 4 in my prepared statement shows the core economic statistics funding index. The index demonstrates the declining share of economic statistics programs in total federal spending. The figure shows that during the 1980s, the core economic statistics programs have grown at a much slower pace than government as a whole and, consequently, their share in total federal budget authority has declined by nearly 10 percent.

Mr. Chairman, the recommendations contained in the Boskin Initiative are viewed as those items which can be implemented most expeditiously. The proposed recommendations are both long-term and short-term in nature. The success of the initiative should not be measured only by those items that are successfully implemented in this fiscal year, or even the next.

Despite the longtime horizon of some of these items contained in the initiative, even more fundamental change in restructuring of the statistical system is necessary. On a fundamental level, two very important changes are necessary: (1) more flexibility in adjusting to the changes in the structure of the U.S. economy is necessary and increased coordination of statistical policy and agency budgeting is also necessary; and (2) the statistical system must adopt more flexibility. The system, designed to be rigid and well structured, cannot accurately reflect a U.S. economy that is dynamic, ever-changing, and subject to massive technological change in product innovation. The substantial revisions made to the 1989 GNP data in July 1990, in part, reflect developments in the economy that are occurring at such a high rate of speed that the statistical system cannot keep pace.

The very nature of the U.S. statistical system is at odds with the very nature of the U.S. economy. If long-term improvement is to be truly realized, the statistical system must be organized in a more efficient manner. The current balkanized structure results in an inefficient expenditure of funds in an era when funding levels are inadequate at the

outset. Therefore, it is essential that the activity of the economic statistics-producing groups be better coordinated in their activity of streamlining.

The position of Chief Statistician is currently part of the Office of Management and Budget's Office of Information and Regulation Affairs. This organization's structure should be changed. The Office of Chief Statistician should be created, and it should report to the Director of OMB.

It is important that a central statistical coordinating function be a separate function reporting to the Director. Such a structure will make clear the importance of the function, provide access to the Director, as well as access to the President; and provide visibility to the public and to policymakers. Further, the agency should be headed by a strong advocate of statistical programs. Such an individual would serve as an unbiased, impartial, and nonpartisan statistician. The position would be an appointed one and, as with a member of the Federal Reserve Board, would have a term perhaps as long as 14 years. Over the past 2 years, this advocacy role has been assumed by Michael Boskin.

The Office of Chief Statistician must have legally mandated responsibilities and should not be considered part of the regulatory/de-regulatory process. The Office must be able to set standards in data collection and publication; work with Congress, the economic statistics agencies, and the Administration. The Office must also be able to set priorities for economic data and information programs. Most important, the Office must have budget review responsibility for economic statistics agencies. Further, the office should not be considered part of the regulatory and paperwork reduction process. While regulatory agencies are an important source of economic statistics, in addition to the data that they collect through the regulatory process, it is best to consider the collection of economic data as a voluntary activity. The collection of economic data is best thought of as voluntary because the collected data provide significant benefits to the business sector. The business sector—both the financial and nonfinancial segments—require data to uncover the needs and structures of markets and to forecast future levels of activity.

With or without data, business judgments are made. Better judgments can be made with more and better data, and if economic welfare can be increased as a result, economic data takes on the properties of a public good. Like construction of highways and bridges, economic statistics are part of the public infrastructure.

The increased coordination of policy and budgeting for economic statistics programs can be expected to have many benefits. First, because of improved private and public decisionmaking, economic growth can be expected to be enhanced. Second, increased coordination can be expected to reduce duplication of statistical activities and thereby reduce costs. And third increased coordination can also be expected to provide

an advocacy position so as to ensure the continued quality of economic statistics.

To achieve these objectives in the most expeditious manner, the National Association of Business Economists proposes that Congress separate provisions affecting statistical policy from legislation reauthorizing the Paperwork Reduction Act. This reauthorization should focus on provisions relating to regulatory activity. Separate legislation should be enacted that would address the needs of economic statistics programs.

In 1989, Mr. Chairman, the Office of Technology Assessment report on the "Quality of Economic Statistics" concluded:

An adequate response to these challenges of improving the quality of economic statistics also requires coordinated approaches to budgeting and, undoubtedly, more money. The need for resources, however, cannot be established without a clear view of the needs and priorities of the system taken as a whole. Such a perspective is not now available from any source. It is clear, however, that the price paid for public policy mistakes that stem from defects in national statistics can be many times higher than the entire national statistical budget.

Thus, even though policy errors are inherently unobservable and very difficult to measure, there is reason to think that economic outcomes would be different if the quality of economic statistics is improved. Such improvement can only occur as a result of increased funding, the implementation of the Boskin Initiative, and the increased coordination of policy and budgeting for economic statistics agencies.

Thank you very much.

[The prepared statement of Mr. Fleming, together with a report, follows:]

PREPARED STATEMENT BY MR. FLEMING

Thank you, Mr. Chairman. I appreciate the opportunity to present my views and the views of the National Association of Business Economists to the committee today. I also appreciate the interest of the committee as well as your personal interest, Mr. Chairman, in the issue of economic statistics.

Improving the quality of U.S. economic statistics is a task that the National Association of Business Economists (NABE) believes should be of the highest priority for the Bush Administration and the 102nd Congress. Structural economic change, such as the growth of the service sector and the internationalization of markets, has diminished the ability of the statistical system to measure economic activity. This diminished ability has put at risk effective economic decision making in both the public and the private sector. Action by the Administration and Congress is required now to repair, rebuild and restructure the economic statistical system. Decision making in the decade ahead and in the next century must be effectively

guided by an accurate representation of the U.S. economy, its growth and its changing structure.

Improving the quality of economic statistics has also become a high priority of Michael Boskin, Chairman of the President's Council of Economic Advisors. Chairman Boskin's effort has focused on maintaining and improving the quality of "core" economic statistics, that is, statistics which measure concepts in three broad areas -- productivity, output and prices; investment, saving and wealth; and employment, income and poverty. This effort has become known as the "Boskin Initiative".

Over the past year, members of the National Association of Business Economists and its Statistics Committee have reviewed in great detail Chairman Boskin's effort. We have concluded that, while the effort of Chairman Boskin will not solve all of the problems of the economic statistical system and more work is needed, his initiative is a major step forward in the journey down the path to rebuilding our economic statistics system. The result of our work is contained in a report which we are, today, releasing to the press and the public and submitting to you for the record.

Our report has four major conclusions.

First, we have observed that many Members of Congress remain concerned about why the quality of economic statistics matter. While policy errors are inherently unobservable, nebulous and difficult to quantify, logic dictates that policy decisions taken by both the private and the public sector would be different if the available data were more accurate and comprehensive.

Second, if the quality of public and private decision making can be improved as a result of better and more timely statistical information, then increased funding received by the statistical agencies will be well spent.

Despite the substantial increase in the federal budget deficit and the rapid growth in federal government spending over the past decade, spending by the major statistical agencies has generally not kept pace and its share of total budget authority has declined. Notwithstanding the tremendous increase in the demands for additional economic data and information, spending by these agencies, over the past decade and a half, has grown at one percentage point less than the rate of nominal GNP growth.

Third, if funding for the statistical agencies is to be increased, a strategy is needed. A major conclusion of our report is that the recommendations contained in the Boskin Initiative should be implemented immediately.

Fourth, since the recommendations contained in the Boskin Initiative are short term in focus, more work is required in a number of areas. Thus, there is a continuing need for attention to fundamental long term changes. Planning for the necessary long term changes should also begin as soon as possible.

I. Policy Making in the Absence of Complete Data

Mr. Chairman, despite the lengthy recitation of the problems related to the quality of economic statistics and the recent proposals for solving some of those problems, many remain unconvinced of the need for action. Because of the conflicting priorities which the Congress must confront, only the most pressing problems are likely to receive increased funding. Therefore, it has become incumbent upon the users of economic statistics to show that significant problems can be attributed to economic statistics and that public and private decision making has been misdirected in a fundamental and

significant way.

Policy errors which may be made in public policy are inherently unobservable. It is impossible to know how economic outcomes would have been different had a particular policy taken a different course at a particular point in time. The unknown efficacy of public policy is in large part responsible for the unobservable nature of policy errors. The effects of individual policy actions are generally not unambiguous and are subject to well known disagreements among professional policy analysts. Measurement is further complicated by concomitant policy making activity on a variety of policy making fronts. Thus, to isolate the role that the lack of complete information plays is virtually impossible.

These difficulties notwithstanding, our report reviews the Gross National Product (GNP) data for the quarters of 1989 that were available on the various dates that the Federal Open Market Committee (FOMC) met during 1989 and early 1990. Figure I shows quarterly growth rates of GNP using currently available data. The figure shows generally slowing growth over the period. Figure II shows GNP growth rates which were available for the March 27, 1990 FOMC meeting compared to current estimates of 1989 GNP growth rates.

The complete set of figures in our report show that as growth slowed over the year, monetary policy was eased. For instance, as a result of the December 18-19, 1989 meeting a directive was issued to reduce reserve pressure slightly during the intermeeting period. However, by late 1989 and early 1990, despite the easing of policy, growth was slowing to an even greater extent than was known at the time. By March 27, 1990, when all 1989 quarterly data were "final", growth in the last three quarters of the year

was estimated to be 83% stronger than it now appears to have been. How the appearance of stronger than actual growth influenced monetary policy will never be completely understood.

It is also fair to observe that the members of the FOMC were concerned about a high rate of inflation over the period in 1989 during which growth was slowing. Thus, while real growth may have been overestimated, monetary policy may have achieved the appropriate degree of ease if the rate of inflation had been equally underestimated. However, a review of the Bureau of Economic Analysis data releases shows that the "final" quarterly estimates of the GNP Implicit Price Deflator were very close to the current estimates. Figure III shows these estimates. Thus, rates of inflation were fairly accurately understood at the time monetary policy was being set.

Revisions to the 1989 National Income and Product Account data, that resulted in the large revisions to the GNP quarterly rates, were in two well defined areas. The largest single revision -- which accounts for two thirds of the total revision -- was in personal consumption expenditures. Nearly all of this change occurred in spending by consumers for medical care. The other revision -- which accounted of the remaining one third -- was in government purchases. Again nearly all the revision occurred in one area which was spending by state and local governments. In addition, downward revisions also were made to spending for "information processing and related equipment," the major component of producers durable equipment and residential remodelling.

It is not without irony that, with the exception of purchases by state and local governments, the 1989 revisions occurred among data items for which the Boskin Initiative has indicated significant shortcomings exist and

corrective action is required. One difficulty associated with the current method of estimating GNP is that the estimation process relies on the use of annual data surveys for components which, as a result of structural economic change, have become a much larger part of the total. Three decades ago, expenditures by consumers on services were approximately 25% of total GNP. In 1989, spending by consumers for services was over 35% of total GNP. Similarly, spending by state and local governments, over the same period rose from 9% of total GNP to 12% of total GNP. As a result of these increases, annual series are no longer adequate to measure these components of GNP. Expenditures by consumers for services and spending by state and local governments now account for nearly one half of total GNP. Thus, more extensive quarterly surveys are necessary. This is a good example of structural economic change and inadequate funding combining to reduce our ability to measure economic activity.

II. Funding For The Economic Statistics Agencies

Mr. Chairman, the problem of funding for the statistical system is now more than a decade old. It must be solved if progress toward the goal of improving economic statistics is to be made. Our report presents a measurement of spending on "core" economic statistics programs. Figure IV shows the "Core" Economic Statistics Funding Index. The index demonstrates the declining share of economic statistics programs in total U.S. federal spending. The figure shows that during the decade of the 1980s the "core" economic statistics programs have grown at a much slower pace than government as a whole and, consequently, their share in total federal budget authority has declined by nearly 10%. Over the period 1977 to 1990, nominal

GNP increased at an average annual rate of 8.0%, total budget authority increased at an annual rate of 8.5% and budget authority of the economic statistics agencies increased at a 7.0% annual rate. Over this same time period, inflation, as measured by the Implicit Price Deflator rose at an average annual rate of 5.3%.

The principle near term objective of the Boskin Initiative is to begin to rebuild the level of funding received by the federal statistical agencies despite existing federal budget constraints. The existence of budget constraints has many ramifications, including: the need to cancel some statistical programs if minimum quality standards are to be maintained in others; a reduced ability to attract, hire, and train top quality professionals in the field; and an absence of the latest computer and information technology in some agencies.

The funding problem has inevitably lead to a resource allocation problem. The statistical agencies must view their primary mission as one of producing current economic statistics of acceptable quality. In times of reduced funding, the agencies have responded by selectively paring back the production of lower priority data series and by reducing research and development spending. However, just as research and development cutbacks in manufacturing lead to deteriorating product quality, research and development cutbacks in economic statistics programs cause a cancerous erosion of the quality of economic data. If the problems that face the statistical system are to be solved, increased research and development is critical.

III. Long Term Improvement And Change

Mr. Chairman, while the recommendations which are contained in the Boskin Initiative are viewed as those items that can be implemented most expeditiously, the proposed recommendations are both long term and short term in nature. The success of the initiative should not be measured only by those items which are successfully implemented in this fiscal year or even the next. Despite the long time horizon of some of the items contained in the initiative, even more fundamental change and restructuring of the statistical system is necessary. On a fundamental level two very important changes are necessary -- more flexibility in adjusting to the changes in the structure of the U.S. economy and increased coordination of statistical policy and agency budgeting.

The statistical system must adopt more flexibility. The system, designed to be rigid and well-structured, can not accurately reflect a U.S. economy that is dynamic, ever changing and subject to massive technological change and product innovation. The substantial revisions which were made to the 1989 GNP data in July 1990, in part, reflect developments in the economy that are occurring at such a high rate of speed that the statistical system cannot keep pace. The very nature of the U.S. statistical system is at odds with the very nature of the U.S. economy.

If long term improvement is to be truly realized, the statistical system must be organized in a more efficient manner. The current balkanized structure results in the inefficient expenditure of funds in an era when funding levels are inadequate at the outset. Therefore, it essential that, at least, the activity of the economic statistics producing groups be better coordinated and their activities streamlined.

The position of Chief Statistician is currently part of the Office of Management and Budget's (OMB) Office on Information and Regulatory Affairs (OIRA). This organizational structure should be changed. The Office of the Chief Statistician should be created and it should report to the Director of OMB. It is important that a central statistical coordinating function be a separate function reporting to the Director. Such a structure will make clear the importance of the function, provide access to the Director as well as to the President and provide visibility to the public and to policy makers. Further, the agency should be headed by a strong advocate of statistical programs. Such an individual would serve as an unbiased, impartial, nonpartisan statistician. The position would be an appointed one and, like a Federal Reserve Board member, would have a term of perhaps as long as fourteen years. Over the past two years, this advocacy role has been assumed by Michael Boskin.

The Office of the Chief Statistician must have legally mandated responsibilities and should not be considered part of the regulatory/deregulatory process. The Office must be able to set standards in data collection and publication. Working with Congress, the economic statistics agencies and the Administration, the Office must also be able to set priorities for economic data and information programs. Most importantly, the Office must have budget review responsibility for the economic statistics agencies. Further, the Office should not be considered to be a part of the regulatory and paperwork reduction process. While regulatory agencies are an important source of economic statistics, in addition to data that are collected for regulatory purposes, it is best to consider the collection of economic data as a voluntary activity.

The collection of economic data is best thought of as voluntary because the collected data provide significant benefits to the business sector. The business sector, both the financial and nonfinancial segments, requires data to uncover the needs and structures of markets and to forecast future levels of activity. With or without data, business judgments are made. If better judgments can be made with more and better data and if economic welfare can be increased as a result, economic data take on the properties of a public good. Like the construction of highways and bridges, economic statistics are part of the public infrastructure.

Business sector information requirements should drive data needs. Heavy reliance on data resulting from regulatory activity has left many private sector data needs unmet. By removing economic data collection activity from the Information Collection Budget and by allowing the private sector to advise the Chief Statistician on the direction of economic statistics programs, the private sector can better discern opportunities for economic growth and its benefits, such as increases in employment. The maintenance of the close connection of statistical policy and deregulatory activity in OMB has, ironically, hurt, not helped, the development of economic statistics programs. The manufacturing sector, which is somewhat more heavily regulated, has relatively more data available than the service sector, which is more lightly regulated. However, the service sector is growing in importance while the manufacturing sector has been declining in importance.

The increased coordination of policy and budgeting for economic statistics programs can be expected to have many benefits. First, because of improved private and public decision making, economic growth can be expected to be enhanced. Second, increased coordination can be expected to reduce

duplication of statistical activities and, thereby, reduce costs. Third, increased coordination can also be expected to provide an advocacy position so as to ensure the continued quality of economic statistics.

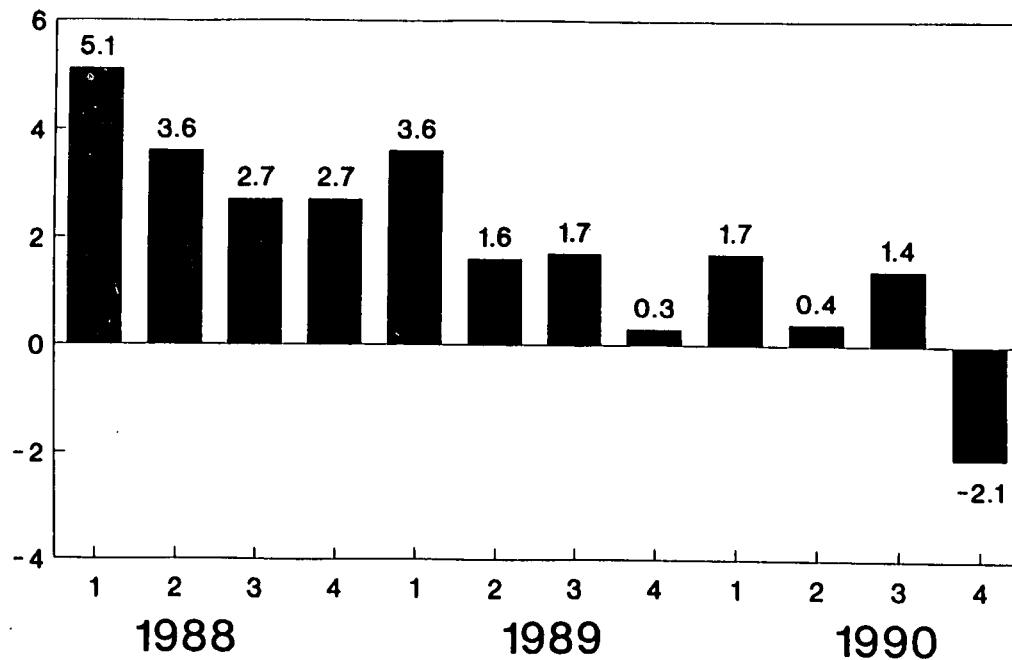
To achieve these objectives in the most expeditious manner, the National Association of Business Economists proposes that Congress separate provisions affecting statistical policy from the legislation reauthorizing the Paperwork Reduction Act. This reauthorization should focus on provisions relating to regulatory activity. Separate legislation should be enacted which would address the needs of economic statistics programs.

Mr. Chairman, the 1989 Office of Technology Assessment report on the quality of economic statistics concluded:

An adequate response to these challenges [of improving the quality of economic statistics] also requires coordinated approaches to budgeting and undoubtedly more money. The need for resources, however, cannot be established without a clearer view of the needs and priorities of the system taken as a whole. Such a perspective is not now available from any source. It is clear, however, that the price paid for public policy mistakes that stem from defects in national statistics can be many times higher than the entire national statistical budget.

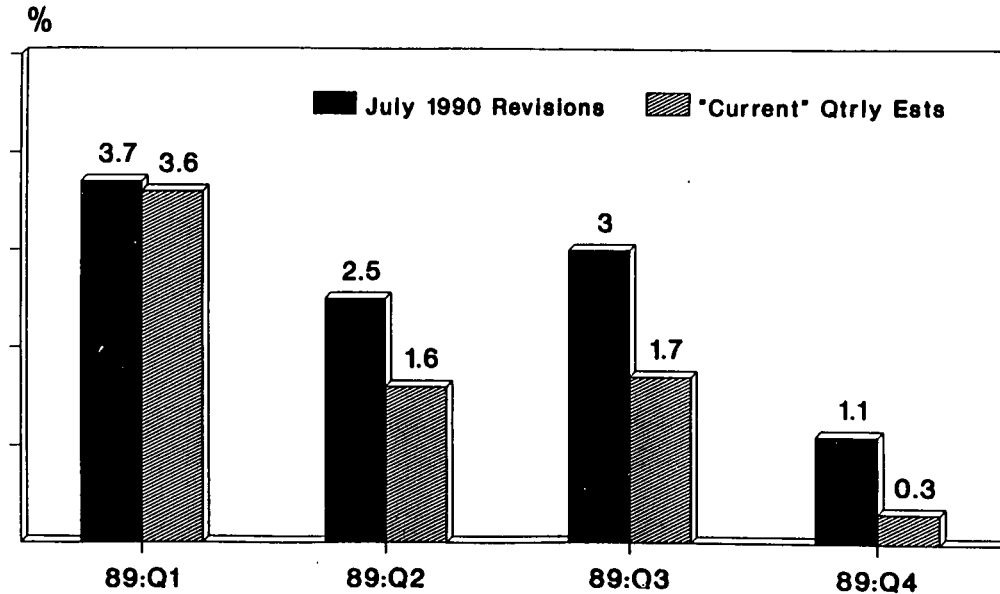
Thus, even though policy errors are inherently unobservable and very difficult to measure, there is reason to think economic outcomes would be different if the quality of economic statistics is improved. Such improvement will only occur as a result of increased funding, the implementation of the Boskin Initiative and the increased coordination of policy and budgeting for the economic statistics agencies.

Figure I
GNP Growth 1988:Q1 to 1990:Q4



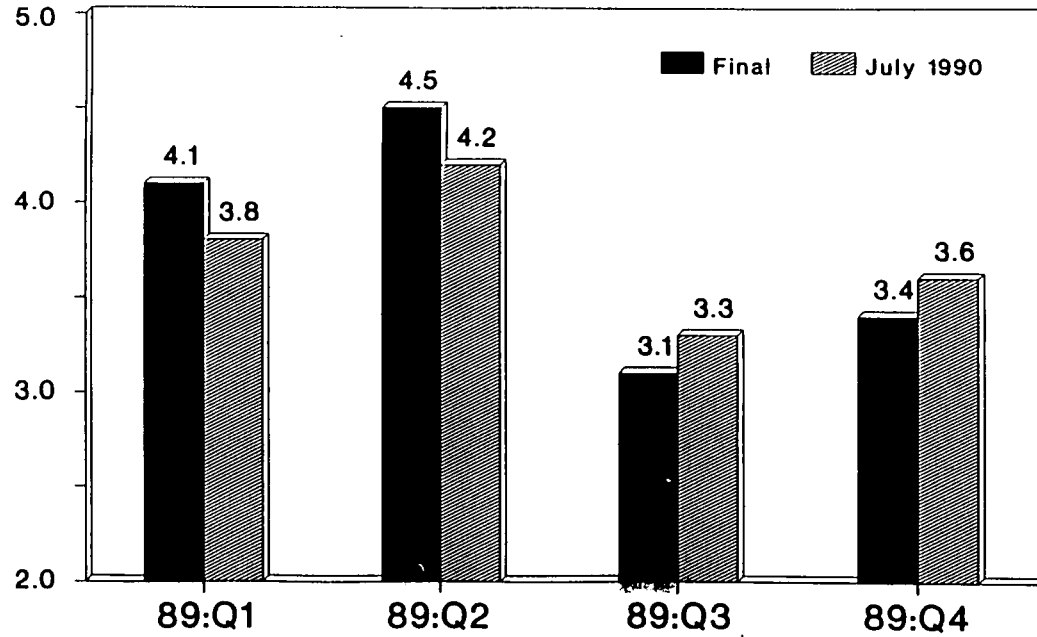
Source: Bureau of Economic Analysis,
Department of Commerce, Most Recent Data

Figure II
GNP Growth Estimates Available to FOMC
on March 27, 1990



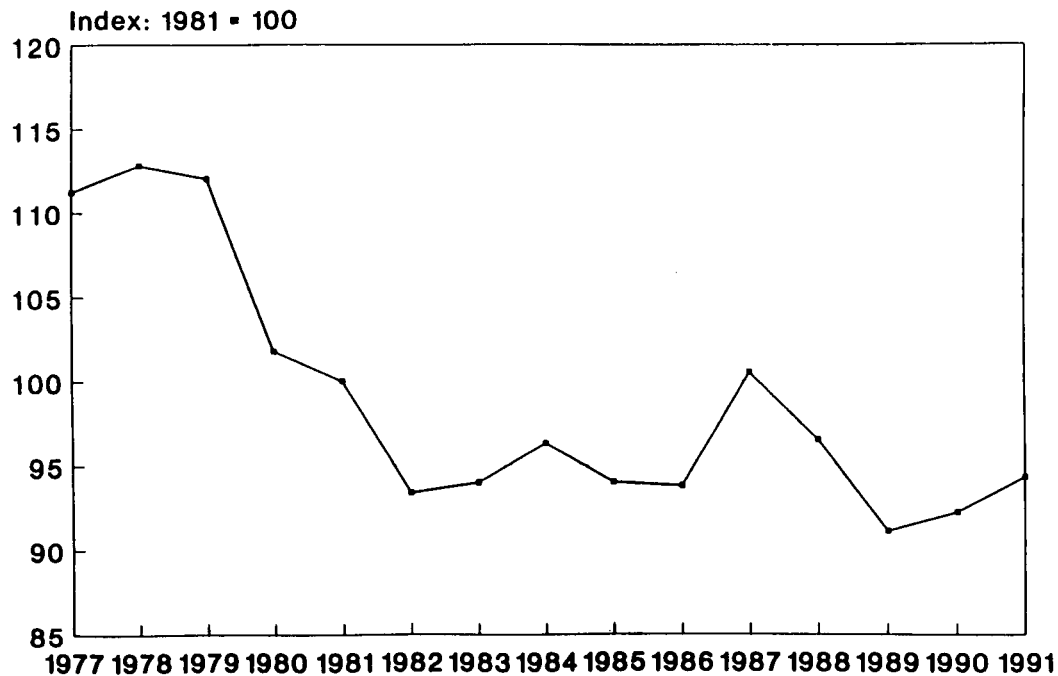
Source: Bureau of Economic Analysis, Department of Commerce.
FOMC Info: FOMC minutes, various dates.

Figure III
Implicit Price Deflator 1989
"Final" Quarterly Estimates and July 1990 Revisions
%



Source: Bureau of Economic Analysis, Department of Commerce.

Figure IV
"Core" Economic Statistics Funding Index



IMPROVING THE QUALITY OF ECONOMIC STATISTICS

Dr. Martin Fleming

Chairman,
Statistics Committee
National Association of Business Economists

and

Vice President, Planning
Cahners Publishing Company

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IMPROVING THE QUALITY OF ECONOMIC STATISTICS

Improving the quality of U.S. economic statistics is a task that the National Association of Business Economists (NABE) believes should be of the highest priority for the Bush Administration and the 102nd Congress. Structural economic change, such as the growth of the service sector and the internationalization of markets, has diminished the ability of the statistical system to measure economic activity. This diminished ability has put at risk effective economic decision making in both the public and the private sector. Action by the Administration and Congress is required now to repair, rebuild and restructure the economic statistical system. Decision making in the decade ahead and in the next century must be effectively guided by an accurate representation of the U.S. economy, its growth and its changing structure.

Improving the quality of economic statistics has also become a high priority of Michael Boskin, Chairman of the President's Council of Economic Advisors. As a result of Chairman Boskin's efforts, the President has approved the funding of several major statistical policy initiatives which are intended to result in a significant improvement in the quality of economic statistics. As reported in Appendix B of the 1990 Economic Report of the President, this effort has focused on maintaining and improving the quality of "core" economic statistics, that is, statistics which measure concepts in three broad areas -- productivity, output and prices; investment, saving and wealth; and employment, income and poverty. This effort to improve the quality of economic statistics has become known as the

"Boskin Initiative".

The problems of the federal statistical system have been widely documented.¹ The Boskin Initiative is an effort which begins to focus on solutions. It is by no means a master plan or a panacea for all of the problems of the federal statistical system. Rather, the initiative is based on the premise that small improvements now, are better than plans for a major restructuring of the system in the indeterminate future. The initiative is also based on the premise that small increases in funding and real levels of activity are better than maintaining the status quo or permitting further erosion. The initiative is an attempt to reverse the decline in funding and quality of economic statistics which has occurred over the past decade. It is viewed as a first step not a long term solution.

¹ See for instance: Juster, F. Thomas; The State of U.S. Economic Statistics: Current and Prospective Quality, Policy Needs, and Resources; (Prepared for the 50th Anniversary Conference, Conference on Research in Income and Wealth, Washington, D.C., May 12-14, 1988). National Association of Business Economists; Report of the Statistics Committee of the National Association of Business Economists; February 1988. Office of Technology Assessment; Statistical Needs for a Changing U.S. Economy; September 1989.

In addition, the American Economics Association devoted a session to the problems of the federal statistical system at their December 1989 Annual meeting. The National Bureau of Economic Research also devoted a session of the Conference on Research in Income and Wealth in May 1988. The National Association of Business Economists held a session on the federal statistical system in February 1986 after forming its statistics committee in July 1985.

Also, numerous instances of congressional testimony on the problems of the federal statistical system can also be found. See: Statement of Courtenay Slater, President, CEC Associates before the Joint Economic Committee, U.S. Congress, March 17, 1986 and Hearings before the Joint Economic Committee, U.S. Congress, March 1 and 29, 1990.

I. Summary and Conclusions

This paper reviews four issues which are important for the future of economic statistics programs.

The first issue to be addressed in this paper concerns the reasons that the quality of economic statistics matter for economic policy making. While the problems associated with various economic statistics programs have been debated at length and the Boskin Initiative is at least a first step toward a solution, many Members of Congress remain concerned about why the quality of economic statistics matter. While policy errors are unobservable, nebulous and difficult to quantify, there is some reason to think that policy decisions taken by both the private and the public sector would be different if the available data were more accurate and comprehensive.

The second issue to be addressed in this paper is the need to place in proper perspective the resource cuts that the major statistical agencies have experienced over the past decade. If the quality of public and private decision making can be improved as a result of better and more timely statistical information, then increased funding received by the statistical agencies will be well spent. Despite the substantial increase in the federal budget deficit and the rapid growth in federal government spending over the past decade, spending by the major statistical agencies has generally not kept pace and its share of total budget authority has declined. Notwithstanding the tremendous increase in the demands for additional economic data and information, spending by the agencies, over the past decade and a half, has grown at 1.0 percentage point less than the rate of growth of nominal GNP.

The third issue to be addressed is the recommendations which are part

of the Boskin Initiative. If funding for the statistical agencies is to be increased, a strategy is needed. A major conclusion of this paper is that the recommendations contained in the Boskin Initiative should be implemented immediately.

Since the recommendations contained in the Boskin Initiative are short term in focus, more work is required in a number of areas. Thus, the fourth issue which this paper addresses is the need for attention to fundamental long term changes. Planning for the necessary long term changes should also begin as soon as possible.

II. Policy Making In The Absence of Complete Data

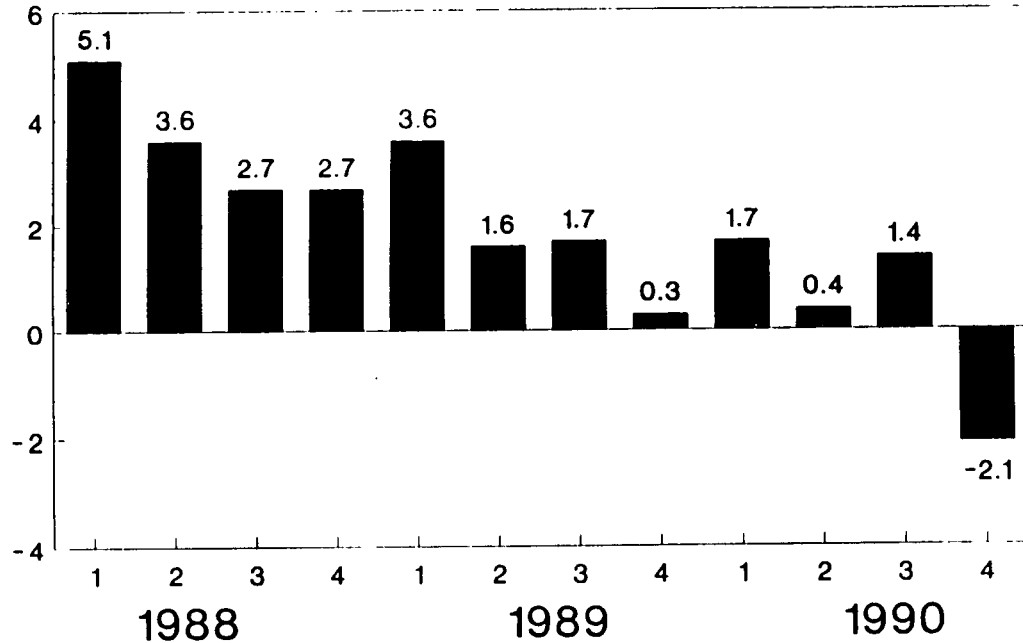
Despite the lengthy recitation of the problems related to the quality of economic statistics and the recent proposals for solving some of those problems, many remain unconvinced of the need for action. Because of the conflicting priorities which the Congress must confront, only the most pressing problems are likely to receive increased funding. Therefore, it has become incumbent upon the users of economic statistics to show that significant problems can be attributed to economic statistics and that public and private decision making has been misdirected in a fundamental and significant way.

Policy errors which may be made in public policy are inherently unobservable. It is impossible to know how economic outcomes would have been different had a particular policy taken a different course at a particular point in time. The unknown efficacy of public policy is in large part responsible for the unobservable nature of policy errors. The effects of individual policy actions are generally not unambiguous and are subject to

well known disagreements among professional policy analysts. The traditional public policy model views policy making as a four step process; problem identification, reaction, implementation and economic response. Information plays a vital role in all four steps of the process but it is especially important in identifying the problem and in measuring the response. However, there are likely to be time lags and operational difficulties at any point in the process. Measurement is further complicated by concomitant policy making activity on a variety of policy making fronts. Thus, to isolate the role that the lack of complete information plays is virtually impossible. These difficulties are further compounded by the fact that, with hindsight, it is often much easier to see which public policy track might have been more favorable.

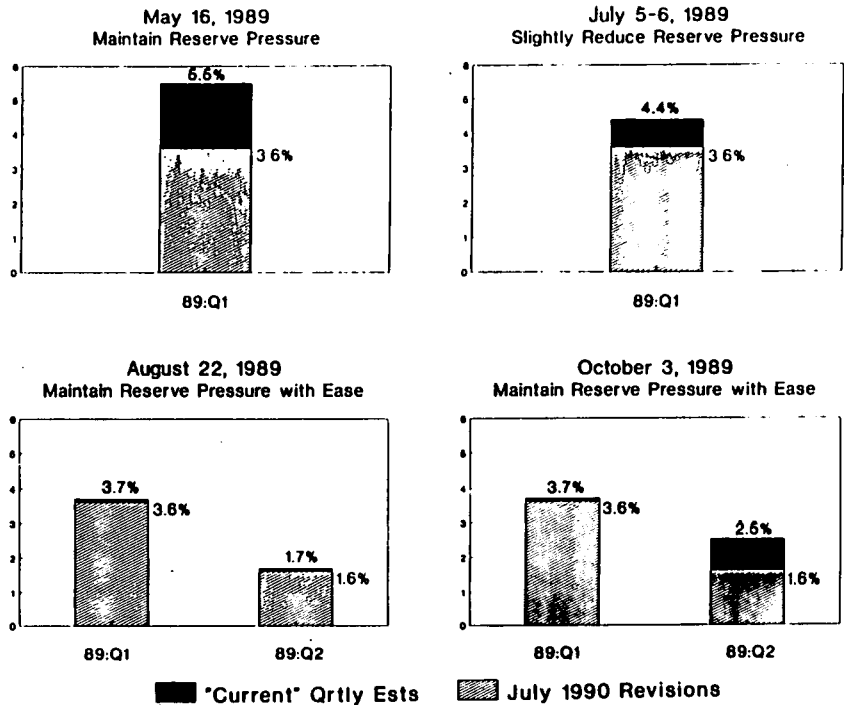
These difficulties notwithstanding, it is instructive to review the Gross National Product (GNP) data for the quarters of 1989 that were available on the various dates that the Federal Open Market Committee (FOMC) met during 1989 and early 1990. Figure I shows quarterly growth rates of GNP using currently available data. The figure shows generally slowing growth over the period. Figures II-A and II-B show -- in the solid bar -- the growth rates as reported and available at the time the FOMC met. The figures also show current quarterly growth estimates -- in the hatched bars. For instance, when the FOMC met on May 16, 1989, growth in the first quarter of 1989 (89:Q1) was believed to have been at an annual rate of 5.5%. However, current estimates place growth in 89:Q1 at an annual rate of 3.6%. Figures II-A and II-B also provide a very brief summary of the directive issued by

Figure I
GNP Growth 1988:Q1 to 1990:Q4



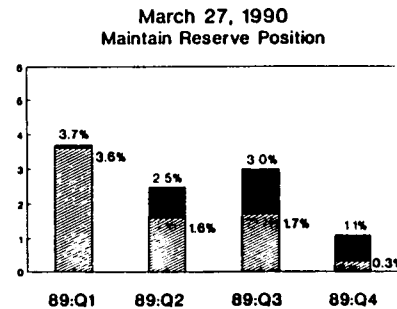
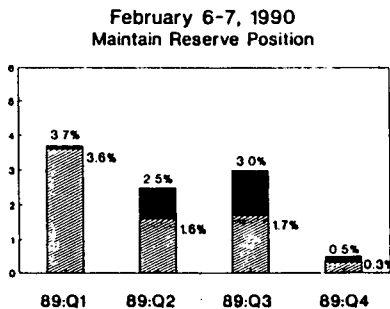
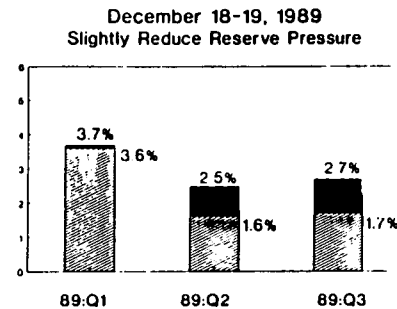
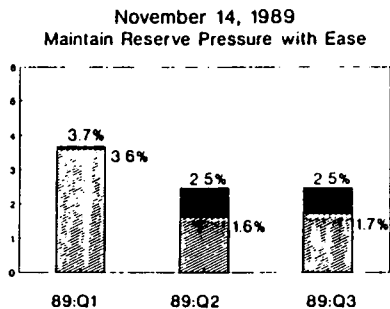
Source: Bureau of Economic Analysis,
Department of Commerce, Most Recent Data

Figure II-A GNP Growth Estimates Available on FOMC Meeting Dates



Source: NIPA Data, Bur. of Econ. Analysis, Dept. of Commerce
FOMC information: FOMC minutes 1989, various dates

Figure II-B
GNP Growth Estimates Available on FOMC Meeting Dates



■ "Current" Qrtly Ests ▨ July 1990 Revisions

Source: NIPA Data, Bur. of Econ. Analysis, Dept. of Commerce

the FOMC on the date of the meeting.²

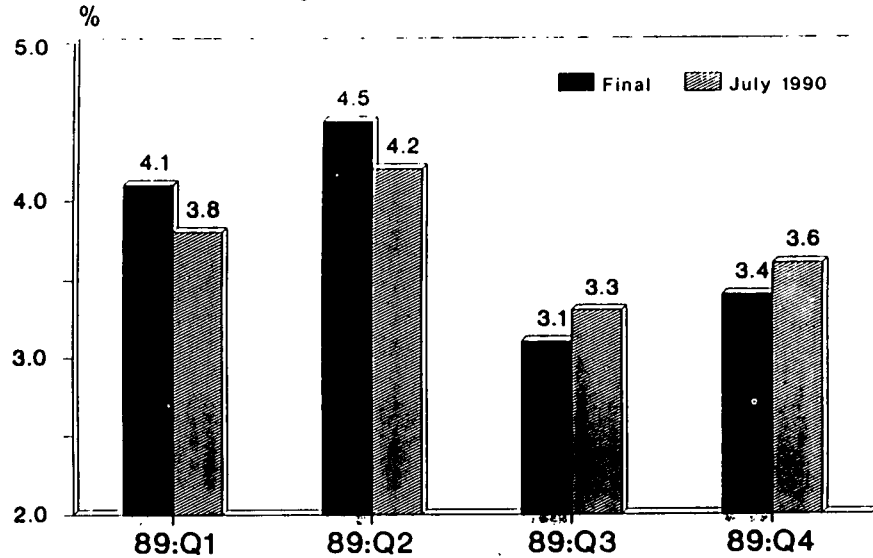
The figures show that as growth slowed over the year monetary policy was eased. However, as can be seen from Figure II-B, as a result of the December 18-19, 1989 meeting a directive was issued to reduce reserve pressure slightly during the intermeeting period. However, by late 1989 and early 1990, despite the easing of policy, growth was slowing to an even greater extent than was known at the time.³ By March 27, 1990, when all 1989 quarterly data were "final", growth in the last three quarters of the year was estimated to be 83% stronger than it now appears to have been. How the appearance of stronger than actual growth influenced monetary policy will never be completely understood.

It is also fair to observe that the members of the FOMC were concerned about a high rate of inflation over the period in 1989 during which growth was slowing. Thus, while real growth may have been overestimated, monetary policy may have achieved the appropriate degree of ease if the rate of inflation had been equally underestimated. However, a review of the Bureau of Economic Analysis data releases shows that the "final" quarterly estimates of the GNP Implicit Price Deflator were very close to the current estimates. See Figure III. Thus, rates of inflation were fairly accurately understood at the time monetary policy was being set.

² The phrase "with ease" in Figure II refers to the expectation of the committee that, depending on developments, policy may have to be eased somewhat during the intermeeting period. For a summary of FOMC actions in 1989, see: Garfinkel, Michelle R.; "The FOMC in 1989: Walking a Tightrope"; Federal Reserve Bank of St. Louis Review; March/April 1990, pp.17-35.

³ As a result of the San Francisco earthquake, the South Carolina hurricane and the Boeing strike, growth slowed substantially in 89:Q4 but rebounded in 90:Q1. As can be seen in Figure I, between 89:Q3 and 90:Q2, the average annual growth rate of GNP was 0.8%. This is consistent with slowing growth over the period.

Figure III
Implicit Price Deflator 1989
"Final" Quarterly Estimates and July 1990 Revisions



Source: Bureau of Economic Analysis, Department of Commerce.

Revisions to the 1989 National Income and Product Account (NIPA) data, that resulted in the large revisions to the GNP quarterly rates, were in two well defined areas. See Table One. The largest single revision -- which accounts for two thirds of the total revision -- was in personal consumption expenditures. Nearly all of this change occurred in spending by consumers for medical care. The other revision -- which accounted for the remaining one third -- was in government purchases. Again nearly all the revision occurred in one area which was spending by state and local governments. In addition, downward revisions also were made to spending for "information processing and related equipment" which is a major component of producers durable equipment and residential remodeling.⁴

It is not without irony that, with the exception of purchases by state and local governments, the 1989 revisions occurred among data items, for which the Boskin Initiative has indicated significant shortcomings exist and corrective action is required. One difficulty associated with the current method of estimating GNP is that the estimation process relies on the use of annual data surveys for components which, as a result of structural economic change, have become a much larger part of the total. Three decades ago,

⁴ In commenting on a previous draft of this paper, Joel Popkin commented: "It should be pointed out that statistical agencies do publish measures of the reliability of their monthly and quarterly data. BEA regularly provides such information in its press releases on GNP. Policy makers typically look at a number of measures partly in recognition of such measurement error; for example, the Federal Reserve Board maintains its own indexes of industrial and service output and the BLS provides two measures of employment. Nonetheless, over the 30 years during which I have been both a producer and user of economic data, I have seen instances in which policy makers seemed eager to place the blame for unintended policy outcomes on errors in economic statistics. That should not, however, detract from recommendations in this report that additional funding is necessary to bring about a reduction in the range of error associated with key statistical estimates, particularly preliminary ones."

TABLE ONE

1989

National Income and Product Account Revisions
Selected Component Detail

Billions of Dollars

	<u>Revised Level</u>	<u>Revision</u>
Gross National Product	5200.8	-33.2
Personal Consumption Expenditure	3450.1	-21.0
Goods	1604.6	8.0
Services	1845.5	-28.9
Fixed Investment	742.9	-3.4
Nonresidential Structures	146.2	1.3
Producers Durable Equipment	365.7	-1.0
Residential Investment	231.0	-3.6
Change In Business Inventories	28.3	1.2
Net Exports	-46.1	1.0
Exports	626.2	0.3
Imports	672.3	-0.7
Government Purchases	1025.6	-11.0

Source: Bureau of Economic Analysis, Department of Commerce; "The U.S. National Income and Product Account: Revised Estimates;" Survey of Current Business; July 1990, pp. 8-37.

expenditures by consumers on services were approximately 25% of total GNP. In 1989, spending by consumers for services was over 35% of total GNP. Similarly, spending by state and local governments, over the same period rose from 9% of total GNP to 12% of total GNP. As a result of these increases, annual series are no longer adequate to measure these components of GNP. Expenditures by consumers for services and spending by state and local governments now account for nearly one half of total GNP. Thus, more extensive quarterly surveys are necessary. This is a good example of structural economic change and inadequate funding combining to reduce the ability to measure economic activity.

Beyond, GNP there are other statistical concepts that are subject to mismeasurement and impact economic policy.

Productivity is an area which is thought to be subject to significant mismeasurement and is an area in which accurate measurement is very important for policy purposes. Bailey and Gordon have argued that productivity mismeasurement which affect the aggregate economy and which have contributed to the post-1973 slowdown in productivity growth will effect the estimated size of the overall productivity slowdown.⁵ Both purchases by consumers of services and residential and nonresidential remodelling and modernization are types of expenditures which have grown in importance in the past two decades and are final products that effect aggregate economic activity. The rate of growth of productivity is an important consideration for Congress, the Administration and the Federal Reserve in setting economic policy. Improved economic statistics for both

⁵ See: Bailey, Martin Neil and Robert J. Gordon; "The Productivity Slowdown, Measurement Issues, and the Explosion of Computer Power;" Brookings Papers on Economic Activity; 1988:2.

the services and the construction industries are part of the Boskin Initiative.

Saving, both national saving and private saving, is another example of an instance in which statistical mismeasurement can impact public policy. As measured in the National Income and Product Accounts, there are a number of issues related to the measurement of saving which are important. These include the treatment of purchases of consumer durables as consumption instead of savings, the measurement of personal taxes on a cash instead of on a withholding basis and finally the treatment of net contributions to government retirement funds as government instead of household savings. At the national level, each year it seems the national savings rate is regularly revised upward with the annual benchmarks. Primarily, this reflects upward revisions in income data which are based on company reports to the IRS and are available with a lag of several years. Accurate estimation of the pool of savings available for investment is an important determinant of the level of interest rates, foreign funds which need to be attracted to the U.S. and ultimately, the size of the federal budget deficit which can be safely accommodated by the financial markets.

Foreign debt is also a concept which can be subject to mismeasurement. The International Investment Position (IIP) of the U.S. economy has worsened considerably over the past half dozen years. However, the magnitude of the "net debt" position of the U.S. economy is overstated to the extent that non-U.S. investors have acquired U.S. assets more recently than U.S. investors have acquired foreign assets. Since fixed assets are recorded at book value and not market value, the value of "older" assets tends to be understated. Because there is no accurate market valuation process for

fixed assets which are not sold, a more accurate measure of the U.S. IIP is very difficult. Because an accurate measure of the U.S. IIP is vitally important for economic policy and because academic researchers have questioned whether the U.S. is a debtor nation at all, the Bureau of Economic Analysis (BEA) is undertaking a research project to develop estimates of market values using perpetual inventory and equity price methods. The outcome of this effort is extremely important to Congress and the Administration. The desirability of a federal deficit and its impact on the U.S. economy will differ depending upon whether or not the U.S. is a debtor nation.

Finally, the Consumer Price Index (CPI) is also a very important measure of economic performance. As a policy tool, the CPI is used to assess changes in households' cost of living and to adjust income or other compensatory payments to households, including wages, salaries, and pensions. Since 1985, federal income tax brackets, exemptions, and deductions have been indexed to the CPI. In the CPI the cost of owning a home accounts for about 20% of the total -- the single most important item in the index. For all of 1990, this component rose by 5.4%. While the increase in the fourth quarter of 1990 was at an annual rate of only 0.8%, the second quarter increase was 7.2%. Given the weakened state of housing and real estate markets in 1990, the rather significant increase for the first nine months of 1990 has been questioned by many analysts. Because the CPI housing sample includes changes in rents over a one month period and a six month period, this lagged or averaging procedure, in a declining market, will slow the recognition of the decline in the monthly data and make the rate of inflation appear to be higher than in fact it is. A significant

overstatement of the cost of homeownership can increase the overall rate of inflation by as much as 1.0 percentage point.

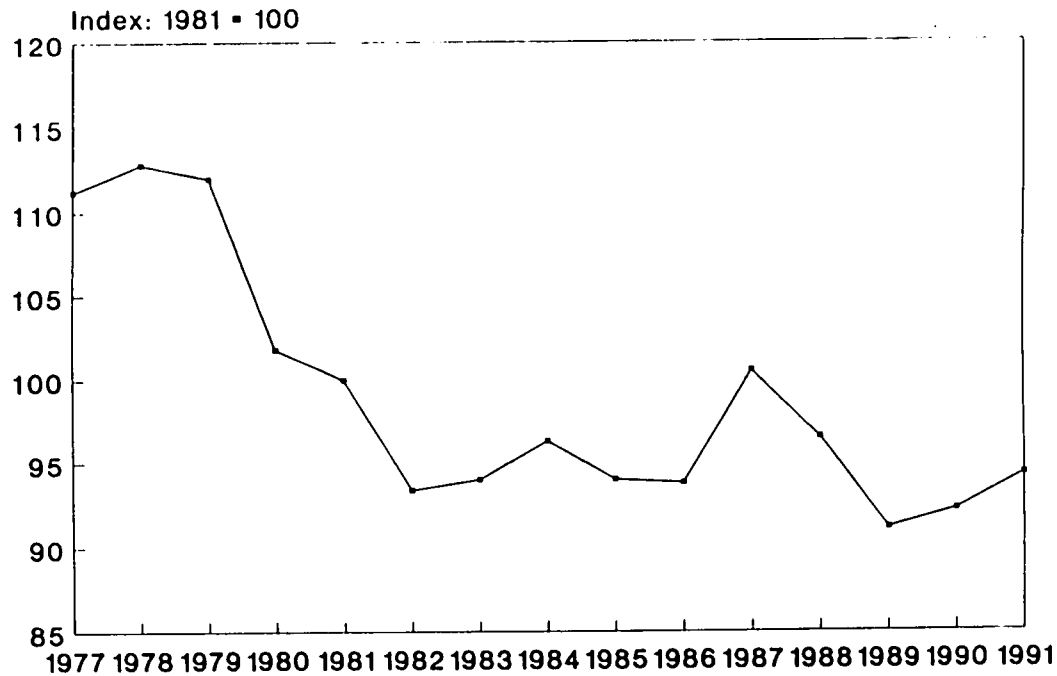
III. Funding For The Economic Statistics Agencies

The problem of funding for the statistical system is now more than a decade old, but, it must be solved if progress toward the goal of improving economic statistics is to be made. Three years ago, the NABE Statistics Committee observed that, when measured in real terms, spending on federal statistical programs declined during the first half of the 1980s.⁶ The 1988 NABE report utilized analysis based on adjusted data from the Office of Management and Budget's Statistical Policy Office. The NABE analysis created a "constant program approach" which isolated major economic statistics programs and removed the effects of new or temporary programs. After adjustment for inflation, the "constant program approach" found that spending had declined sharply between 1976 and 1987.

Because of the difficulty associated with measuring the "constant program approach" and because of the need to measure total levels of activity, not just those programs which have remained unchanged, an attempt has been made to measure spending on "core" economic statistics programs. Figure IV shows the "Core" Economic Statistics Funding Index. The index demonstrates the declining share of economic statistics programs in total U.S. federal spending. The index compares the budget authority for (1) the Bureau of Economic Analysis, (2) the Salaries and Expenses Account of the Census Bureau (this excludes funding for the periodic census programs) and

⁶ See: National Association of Business Economists, Report of the Statistics Committee of the National Association of Business Economists, February 1988.

Figure IV
"Core" Economic Statistics Funding Index



(3) the Bureau of Labor Statistics with the total budget authority of the U.S. government. The index uses fiscal year 1981 as a base. The figure shows that during the decade of the 1980s the "core" economic statistics programs have grown at a much slower pace than government as a whole and, consequently, their share in total federal budget authority has declined by nearly 10%. Over the period 1977 to 1990, nominal GNP increased at an average annual rate of 8.0%, total budget authority increased at an annual rate of 8.5% and budget authority of the economic statistics agencies increased at a 7.0% annual rate. Over this same time period, inflation, as measured by the Implicit Price Deflator rose at an average annual rate of 5.3%.

The principle near term objective of the Boskin Initiative is to begin to rebuild the level of funding received by the federal statistical agencies despite existing federal budget constraints. The existence of budget constraints has many ramifications, among which are: the need to cancel some statistical programs if minimum quality standards are to be maintained in others; a reduced ability to attract, hire, and train top quality professionals in the field; and an absence of the latest computer and information technology in some agencies.

The funding problem has inevitably lead to a resource allocation problem. The statistical agencies must view their primary mission as one of producing current economic statistics of acceptable quality. In times of reduced funding, the agencies have responded by selectively paring back the production of lower priority data series and by reducing research and development spending. However, just as research and development cutbacks in manufacturing lead to deteriorating product quality, research and

development cutbacks in economic statistics programs can cause a cancerous erosion of the quality of economic data.⁷ If the problems that face the statistical system are to be solved, increased research and development is critical.

IV. The Boskin Initiative

The efforts of Chairman Boskin and others to address the needs of public and private decision makers for economic statistics have resulted in recommendations in twelve separate areas. NABE believes that these recommendations should be implemented as soon as possible. The following is a summary of the background and rationale for each of the recommendations. A more detailed discussion of each is contained in the Appendix.

IV.A. Productivity, Output and Prices

The measurement of output, prices and productivity in the service sector has serious problems. Available data are often flawed conceptually and, in many cases no concept or measurement process exists. Improvement of service sector data should have the highest priority. The President's Fiscal Year 1992 budget begins the process of reallocating resources to accelerate these desperately needed improvements. Improvements in service sector data require significant improvements in the concepts as well as the available raw data.

The agencies should begin work immediately on the needed long term improvements and, for industries that have the most significant problems,

⁷ See: Triplett, Jack E.; "The Federal Statistical System's Response To Emerging Data Needs;" Journal of Economic and Social Measurement; (forthcoming).

work should be accelerated. Among the improvements which are the most important are better concepts and definitions. Many segments of the service sector are not now identified -- output, prices and wages in these segments are not measured because they theoretically do not exist. The statistical agencies must begin immediately to expand the industries identified in the Standard Industrial Classification and expand data collection in these unmeasured segments.

Input-output tables are very important in the calculation of output and productivity, as well as, measuring the inter-related structure of the U.S. economy. Nonetheless, at present, input-output tables are seven years out of date when they are published. The compilation and publication of input-output tables should be substantially accelerated. Similarly, foreign trade data must also be improved. Despite recent improvements, additional detail on trade in services is needed for improvements in trade policy.

Current data on construction have been shown to significantly underestimate the true level of activity. This underestimate has reduced measures of overall national productivity, reduced the measured level of productivity in the construction industry and reduced the measured contribution the sector makes to overall economic activity. Work should begin immediately to improve data on the construction industry.

IV.B. Investment, Saving and National Wealth

The data that are currently collected for investment, saving and, consequently, national wealth are conceptually flawed, inaccurate and internationally inconsistent. The statistical agencies should begin work

immediately to improve these data.

As a first step, the U.S. should step up the pace of the major initiative which is now underway to modernize and extend U.S. national accounts to bring them into line with the international guidelines contained in the United Nations System of National Accounts (SNA). The SNA provides a more comprehensive view of the economy with particular emphasis on investment and saving. Budget authority for the BEA should continue to provide adequate funding so the move to the revised SNA can be successfully completed as part of the 1995 comprehensive revision of the national accounts.

Second, direct investment in the U.S. and investment by U.S. firms abroad should be measured using market values or replacement costs, rather than on a historic cost basis as they currently are. While work to make this improvement is currently underway, it should be completed as soon as possible.

Third, data on domestic saving and investment must be improved. As measured in the Flow of Funds statistics and the National Income and Product Accounts (NIPA), there is a well known difference in the measurement of personal saving. There is also a very pressing need to improve the data which is collected on financial flows. The problems which many Savings and Loan Associations have experienced, as well as certain elements of the commercial banking sector, suggest that more data on debt and capital structure could be of enormous value to policy makers. The collection, coverage and processing procedures for financial flow data should be improved as quickly as possible.

Fourth, the quarterly plant and equipment survey yields data which are

incomplete in coverage, subject to nonresponse bias and are no longer used in the NIPA estimates. The Bureau of the Census should undertake the proposed annual investment survey so as to improve the quality of data collected and to provide additional detail of nonresidential fixed investment.

Fifth, current measures of interest, rents and saving do not adjust appropriately for inflation. These measures of the return to capital do not separate between real and inflation components. The NIPA should report real as well as nominal components of the return to capital.

IV.C. Employment, Income and Poverty

Employment and poverty data are subject to a number of difficulties. There are several steps that the statistical agencies should take immediately to correct these problems.

First, current measures of the U.S. poverty standard are based on research done in the 1950s. Over the past twenty five years, life styles, tastes and the demographic structure of the population have changed to such an extent that these estimates are no longer a true measure of deprivation. Research should begin immediately to develop a benchmark for poverty appropriate to the 1990s.

Second, several lists of business establishments are maintained by various statistical agencies but are not shared due to concerns over confidentiality. This duplication results in increased costs and in inconsistencies in published data. The agencies should begin the process to eliminate unnecessary duplication but unique data should not be lost in the

rocess and confidentiality should be maintained. The Bureau of Labor statistics currently has a project underway to create a Standard Statistical Establishment List that will overcome Census law limits.

Third, the Survey on Income and Program Participation (SIPP) has proven to be a valuable source of information and data about income and poverty of individuals and households over time. However, its usefulness has been diminished in recent years because budget constraints have resulted in the delayed implementation of the original plan. The usefulness of SIPP will be increased if sample sizes are increased and if the SIPP data are linked with other administrative records and published in aggregate form. The agencies should begin to research such linkages immediately.

Fourth, the appropriate statistical agencies should continue their efforts to improve the Current Employment Statistics and the Current Population Survey. Differences which exist in estimates of employment between the household and establishment surveys should also be reconciled and reduced.

V. Long Term Improvement And Change

While the recommendations which are contained in the Boskin Initiative are viewed as those items that can be implemented most expeditiously, the proposed recommendations are both long term and short term in nature. The success of the initiative should not be measured by those items that are successfully implemented in this fiscal year or even the next. Despite the long time horizon of some of the items contained in the initiative, even more fundamental change and restructuring of the statistical system is necessary. On a fundamental level two very important changes are necessary-

- more flexibility in adjusting to the changes in the structure of the U.S. economy and increased coordination of statistical policy and agency budgeting.

The statistical system must adopt more flexibility. The system, designed to be rigid and well-structured, can not accurately reflect a U.S. economy that is dynamic, ever changing and subject to massive technological change and product innovation. The substantial revisions which were made to the 1989 GNP data in July 1990, in part, reflect developments in the economy that are occurring at such a high rate of speed that the statistical system cannot keep pace. The very nature of the U.S. statistical system is at odds with the very nature of the U.S. economy. Two examples will illustrate the point.

First, in the financial services industry many new types of instruments have been created in recent years. Commercial paper issued by nonfinancial corporations has grown from about \$7 billion in the early 1970s to \$125 billion today. Mortgage-backed securities were created in the mid-1970s, and by the end of 1988 approximately \$810 billion in these securities was outstanding. High yield or "junk" bonds were developed in the late 1970s and by 1988 \$130 billion of new debt had been issued. Finally, Standby Letters of Credit have grown very rapidly in recent years -- a 26% annual rate from 1980 to 1988.⁸ The federal statistical system must be able to respond to changes and innovations of this type if the flow of funds throughout the economy is to be adequately tracked and if the supply of and demand for funds is to be accurately measured.

⁸ See Council of Economic Advisers, Economic Report of the President, (Government Printing Office, Washington D.C., February, 1990), pp.100-102.

Second, until recently the Standard Industrial Classification (SIC) code system categorized semiconductor manufacturing equipment into a 4-digit "not elsewhere classified" category, along with broom making machinery, buttonhole and eyelet machines, cotton ginning machines, cement making, hat making and other miscellaneous specialized machinery. The 1987 SIC revision created 26 categories of semiconductor manufacturing equipment.⁹ This change occurred in 1987 despite the fact that semiconductor technology was widespread throughout the U.S. economy as early as the mid-1970s.

If long term improvement is to be truly realized, the statistical system must be organized in a more efficient manner. The current balkanized structure results in the inefficient expenditure of funds in an era when funding levels are inadequate at the outset. Therefore, it is essential that, at least, the activity of the economic statistics producing groups be better coordinated and their activities streamlined.¹⁰

The position of Chief Statistician is currently part of the Office of Management and Budget's (OMB) Office on Information and Regulatory Affairs (OIRA). This organizational structure should be changed. The Office of the Chief Statistician should be created and it should report to the Director of OMB. It is important that a central statistical coordinating function be a separate function reporting to the Director. Such a structure will make clear the importance of the function, provide access to the Director as well

⁹ See Cole, Rosanne; Reviving the Federal Statistical System a View from Industry; A paper presented at the Annual Meeting of the American Economic Association, Atlanta, December 29, 1989.

¹⁰ Work on this paper has independently arrived at conclusions which are very similar to those expressed in Slater, Courtenay; "A New Outlook for Federal Statistical Policy;" The Service Economy; (The Coalition of Service Industries, Vol. 4, No. 4, 1990).

as to the President and provide visibility to the public and to policy makers. Further, as proposed by Juster (1988) and others, the agency should be headed by a strong advocate of statistical programs. Such an individual would serve as an unbiased, impartial, nonpartisan statistician. The position would be an appointed one and, like a Federal Reserve Board member, would have a term of perhaps as long as fourteen years. Over the past two years, this advocacy role has been assumed by Michael Boskin.

The Office of the Chief Statistician must have legally mandated responsibilities and should not be considered part of the regulatory/deregulatory process. The Office must be able to set standards in data collection and publication. Working with Congress, the economic statistics agencies and the Administration, the Office must also be able to set priorities for economic data and information programs. Most importantly, the Office must have budget review responsibility for the economic statistics agencies. Further, the Office should not be considered to be a part of the regulatory and paperwork reduction process. While regulatory agencies are an important source of economic statistics, in addition to data that are collected for regulatory purposes, it is best to consider the collection of economic data as a voluntary activity.

Many types of economic statistics originate with regulatory activities. At present, statistical programs of the U.S. government are spread over many agencies. By a wide margin, the largest single set of statistical programs are the decennial and other periodic censuses conducted by the Census Bureau. After the censuses, the next largest area of activity is the economic statistics programs which account for about 20% of budget authority for all statistical programs. Another 20% of budget authority is for

statistical programs in the agriculture, education, energy, health and justice fields. The remaining 60% is for statistical programs in agencies whose mission is not primarily statistical. More often than not, these statistics programs result from regulatory activity of various types. Table Two shows a breakdown by agency. Thus, while economic statistics programs are the largest single set of statistical programs in the U.S. government, regulatory and other agencies are very important sources of economic statistics. These statistics should continue to be collected as part of the regulatory process but they should be supplemented by voluntary data collection activity where relevant economic data are missing.

The collection of economic data is best thought of as voluntary because the collected data provide significant benefits to the business sector. The business sector, both the financial and nonfinancial segments, require data to uncover the needs and structures of markets and to forecast future levels of activity. With or without data, business judgments are made. If better judgments can be made with more and better data and if economic welfare can be increased as a result, economic data take on the properties of a public good. Like the construction of highways and bridges, economic statistics are part of the public infrastructure.

Business sector information requirements should drive data needs. Heavy reliance on data resulting from regulatory activity has left many private sector data needs unmet. By removing economic data collection activity from the Information Collection Budget and by allowing the private sector to advise the Chief Statistician on the direction of economic statistics programs, the private sector can better discern opportunities for economic growth and its benefits, such as increases in employment. The maintenance of

TABLE TWO

Direct Funding for Major Statistical Programs
Fiscal Year 1990

	<u>Millions of Dollars</u>
Economic Statistical Agencies	
Bureau of Economic Analysis	25.6
Census Bureau - Current Programs	99.9
Bureau of Labor Statistics	193.3
Total	318.8
 Other Statistical Agencies	
Agriculture	117.6
Education	48.8
Energy	64.3
Health and Human Services	67.5
Justice	22.8
Total	321.0
 Other Statistical Programs	
Agriculture	133.8
Commerce	46.3
Defense	9.2
Energy	33.4
Health and Human Services	418.8
Housing and Urban Development	15.5
Interior	107.8
Justice	6.8
Labor	38.7
Transportation	46.2
Treasury	26.9
Veterans Affairs	30.7
Other	139.7
Total	1053.8
Total without Periodic Census	1693.6
Periodic Censuses	1406.4
Total	3100.0

Source: Office of Management and Budget; Statistical Programs of the United States Government Fiscal Year 1991; (Government Printing Office, 1991).

the close connection of statistical policy and deregulatory activity in OMB has, ironically, hurt, not helped, the development of economic statistics programs. The manufacturing sector, which is somewhat more heavily regulated, has relatively more data available than the service sector, which is more lightly regulated. However, the service sector is growing in importance while the manufacturing sector has been declining in importance.

The increased coordination of policy and budgeting for economic statistics programs can be expected to have many benefits. First, because of improved private and public decision making, economic growth can be expected to be enhanced. Second, increased coordination can be expected to reduce duplication of statistical activities and, thereby, reduce costs. Third, increased coordination can also be expected to provide an advocacy position so as to ensure the continued quality of economic statistics.

To achieve these objectives in the most expeditious manner, NABE proposes that Congress separate provisions affecting statistical policy from the legislation reauthorizing the Paperwork Reduction Act. This reauthorization should focus on provisions relating to regulatory activity. Separate legislation should be enacted which would address the needs of economic statistics programs.

The 1989 Office of Technology Assessment report on the quality of economic statistics concluded:

An adequate response to these challenges [of improving the quality of economic statistics] also requires coordinated approaches to budgeting and undoubtedly more money. The need for resources, however, cannot be established without a clearer view of the needs and priorities of the system taken as a whole. Such a perspective is not now available from any source. It is clear, however, that the price paid for public policy mistakes that stem from defects in national statistics can be many times higher than

the entire national statistical budget.¹¹

Thus, even though policy errors are inherently unobservable and very difficult to measure, there is reason to think economic outcomes would be different if the quality of economic statistics is improved. Such improvement will only occur as a result of increased funding, the implementation of the Boskin Initiative and the increased coordination of policy and budgeting for the economic statistics agencies.

¹¹ See Office of Technology Assessment (1989) p. 40, Op. Cit.

In the attached Appendix, the twelve recommendations which constitute the Boskin Initiative are reviewed. The review has been completed with contributions of many members of NABE, including members of the NABE Statistics Committee. The contributors are:

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Hill and Knowlton Economics

Courtenay Slater,
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Products

A. Productivity, Output, and Prices

1. Service Sector: Explore alternative methods for estimating constant-dollar output; accelerate and rearrange timetable for service sector improvements; expedite the compilation of input-output data; increase cooperation between the statistical establishment and academic researchers; and consider the efficacy of mandatory versus voluntary surveys.

In 1950, more than half, fully 59%, of total employees on non-agricultural payrolls were employed in service producing industries. Today 76% of employees are in service industries.

The large size of the service sector and its rapid growth indicates the importance of measuring output and prices in the service industries to the accuracy and relevance of national economic statistics. Yet, it is clear that the measurement problems are much greater than in the goods producing sectors. In the goods sector, physical measures of output, such as numbers of automobiles produced and tons of steel, are more generally available, as are price lists. Also, information on changing characteristics of products which can be used to measure quality changes are more generally available.

In part because of the greater availability of data and ease of use, our statistical system was largely designed around the needs of the goods sectors. For all these reasons, coverage of economic activity in the service sector is much less complete than it is in the goods sector. For example, there is no data set for services comparable to the industrial production indexes for goods.

During the last three decades, services have grown much faster than goods production. This requires research into proper definitions of output and prices which can be very complicated in service industries. In addition, the rapid rate of technological change and changes in business organization puts tremendous burdens on the statistical system to adapt if quality of economic series are to be maintained. These needs have come at a time when funds have not been available for the necessary research and development of new approaches and new data sources.

Some examples of complications in the service sector will illustrate the difficulties for the statistical system.

1. Medical care has increased from 3 1/2% of personal consumption expenditures to 12% during the past 30 years. Measuring output, prices and quality change are extremely difficult issues. New treatments and drugs are more expensive, but are also more effective. New ways of delivering services, including HMO's and specialized clinics, have been developed. The Bureau of Labor Statistics has a project underway to improve price data for the CPI, but more work will be needed to improve coverage of this important sector.

2. The computer software industry is one of the fastest growing and presents difficult problems for pricing and definition of output.

3. Measurement of productivity in education and government have always been difficult issues. More research will be needed to improve economic information for these sectors of the economy.

4. With the downsizing of industrial companies during the 1980's, many services and functions that had previously been handled in-house moved to new small firms providing business services, from janitorial and maintenance to design, planning and accounting. In many cases the same employees were continuing to perform the work, however, manufacturing employment is artificially reduced. To maintain coverage of economic activity, the statistical system must quickly identify and cover these new firms, a difficult and costly process since new firms are constantly entering and exiting the market. Weak industrial activity reported in the mid-1980's may have reflected in part the inability to trace the new firms being formed.

5. In the area of business services, unfortunately, the principal measure of real economic activity is often "billable hours," or hours actually billed to clients. Thus, an actual measure of the productivity of these hours is lacking. Although innovative measurement techniques could be devised to measure actual output resulting from the expenditure of these billable hours, care must be used to make sure that such measurements reflect reality.

One problem with using billable hours as a measure of output is the current trend in the business services industry toward direct billing of research assistant and secretarial time, as well as out-of-pocket expenses. This shows up as an increase in both billable hours and in total dollar billings. Since input costs and employment do not increase, this shows up as an improvement in factor productivity. Such improvement is, of course, entirely fictitious and is due solely to the change in billing methodology.

6. The service industry, particularly business services, is much less concentrated, at least on a nation-wide basis, than is manufacturing. This means that there are many small firms involved, including a large number of individual proprietorships. This increases the problem of gathering data on the industry.

The importance of the service sector and the difficulties of proper statistical measurement should not be underestimated. As an example, the problems of handling housing costs in the CPI led to serious distortions in government programs during the 1970's. Improper treatment of mortgage interest caused the CPI to exaggerate the underlying inflation. This fed the spiral of higher wages and prices. Another result was an unexpected rise in real social security benefits, leading to basic changes in social security which may have provided only a temporary solution to this important program.

The combination of the decentralized structure of the industry, the

absence of statistics-gathering trade groups, and the lack of a tradition of good aggregate market information results in a low response rate for voluntary government-sponsored information-gathering efforts. The alternative of mandatory-response surveys should be investigated, where necessary. However, care should be used in designing the surveys, to keep compliance costs to a minimum. Most service firms do not have the in depth staff to assist in compliance efforts -- thus, the activity of data collection can be accomplished only by sacrificing billable hours and dollar revenues.

In addition, it is also very easy to overstate the importance of the compulsory versus voluntary data collection issue. Statistical agencies have a responsibility to work with business establishments to describe the importance of the survey and to help respondents use the resulting data. The agencies also have a responsibility to use the latest available data collection techniques to reduce the reporting burden. There is no proof that mandatory reporting would raise response rates significantly.

Improving measure of output of the service sector will not be quickly accomplished and will not be inexpensive. Nevertheless, if the quality of information for analysis of the economy is to be maintained, the effort is very important. The research staff at the Federal Reserve Board has developed an index of activity for the service sector. This effort should be continued and expanded.

The paucity of service sector data not only reflects the absence of output data but it also reflects the need to better understand the manner in which the service sector inter-relates with the balance of the economy. The U.S. input-output table represents the industrial structure of the U.S. economy. The Table is produced by the BEA for Census years. Although tables were produced prior to 1958, subsequent tables (1963, 67, 72, 77) were more comprehensive and covered many more sectors. The 1982 table, scheduled to be released in 1991, will contain over 500 sectors and significant disaggregation among the service sectors. This table, like past tables, will present information at approximately the four digit SIC level of detail in manufacturing and three and four digit in non-manufacturing. Accompanying this table will be a capital flows matrix which breaks down capital spending by two and three digit industries by type of plant and equipment.

The major applications of this information center on cost and productivity analysis -- that is the consumption of materials, labor, services and capital relative to output -- and which sectors of the economy purchase goods and services from each of the identified industries. This latter application has become the domain of market planners looking to identify new markets and a way to gauge how a company's market share in a particular product line may be rising or falling. The uses to which these data are put has given rise to a growing concern about whether the quality of what the government produces is satisfactory and whether firms and researchers can draw meaningful conclusions from the analysis of these data. Major concerns about the input-out table center on three issues:

Timeliness: The input-output tables are published as part of the quinquennial censuses. However, there are very long lags between the year of a particular table and when it is published. For example, the 1982 table is expected to be published in 1991. Moreover, the capital flows matrix is usually not published until six months after the release of the table, so one will not be able to use the 1982 table until late 1991-early 1992. Hence, by the time market planners and other researchers can usefully analyze the table it will be close to ten years out of date.

Estimation Methods: Most of the cells of an input-output matrix are estimated by BEA. While survey information on input use is available in some detail for manufacturing, agriculture, construction, mining and trade, data are available for only selected service industries.

Overall Data Quality: Much of the data used in the table, particularly for the service sectors, are based on studies that are often outdated. These data are used in lieu of having more up to date information. In short, the tables are subject to a great deal of error.

The most compelling reason to use the I/O table is related to the detail it provides. This is particularly critical to businesses and their need to identify new growth opportunities as well as discern the degree to which foreign markets represent new business opportunities. Given increased economic integration, increased competitiveness facing U.S. business and the rapidity with which structural change is taking place, any tool that allows business to better understand and prepare for change will increase the probability that U.S. firms will be more successful competitors. This requires that the government significantly increase its support so that the I/O table can be published on a more timely basis. Given current data gathering efforts, there is little reason that the table could not be released at a minimum of three years after the Census year. A more aggregate table (three digit SIC) could be published on a more frequent basis; once a year perhaps. Although the BEA currently releases an 85 order table for each year between the quinquennial censuses, they are subject to most of the same criticisms that were noted above.

The other major use for the I/O tables is the construction of productivity indices. Private sector and government analysts have increasingly focused on the appearance of the decline in U.S. productivity growth relative to that of our major trading partners. The ability to measure productivity accurately at the macro and the industry level particularly, depends on the quality of the factor data and how factor costs have changed. In this regard, the government should support efforts that improve the quality of industry data so adequate benchmarks of industry productivity can be established. This would provide a standard that U.S. firms can use to gauge their own progress within a particular business segment. This would also provide a yardstick to evaluate the progress that U.S. industries were making relative to the productivity of foreign industries. Moreover, adequate bench marks would also provide a basis for establishing appropriate economic policies.

2. International Trade: Accelerate improvements in estimates of trade in services; extend efforts to reconcile import and export data to Mexico, the European Community, South Korea, and Japan; continue work to increase automation of export and import data collection; and increase the ease of access to trade data.

As the U.S. economy has become more tied to global forces, the statistics used to measure this expansion of activity have not fully kept pace. For example, in 1960, the simple aggregate of imports and exports in 1982 dollars as a percent of total U.S. GNP was 12.1%. By the fourth quarter, of 1989, this same measure stood at 30.0%. Linked to this internationalization of economic activity was the rise in the U.S. of the services sector. In 1960, the services component of real GNP made up around 60% of our total output; by the fourth quarter of 1989, services comprised 67% of total output. These simple facts are rather widely known.

Yet the official U.S. government statistics have frequently lagged considerably behind the major shifts in the source of output growth and the new sources of output growth. It is important that economists and policy makers both in the public and private sector have good measures of the changes in economic activity as they occur.

The question can be framed around 1) the depth of quality of the international statistics and 2) the breadth of coverage of those data. Measurement of domestic industrial and agricultural activity in the U.S. is more than adequate. Indeed, one could very easily argue that the statistical apparatus in the U.S. over measures the farm sector. That aside, the statistical agencies must be prepared to enhance both increased depth of our international trade accounts -- more sector specific services data in the business, legal, health sectors. The statistical agencies must be willing to fund increased breadth of the statistics by expanding our ability to measure exports to developing countries like India and Thailand.

The official U.S. statistical community is to be applauded for the changes we have already witnessed. Benchmarking our export data with Statistics Canada's numbers yielded both more precision and improved timeliness. The statistical agencies should be encouraged to use export data as measured by Her Majesty's Statistical Office (HMSO) in Great Britain, for instance. Our export data to Europe should undergo the same treatment we developed with the Canadians.

It is unfortunate that the financial markets are obsessed with the U.S. balance of trade in goods. As pointed out earlier, the services component in both the overall U.S. economy and also in the international components has grown significantly over time. The Department of Commerce should consider releasing the balance of goods and services at the same time. Dramatic improvements in the services sector yielded a surplus in the services account of nearly \$24 billion at the end of last year.

3. Construction: Complete ongoing methodological and data collection improvements and incorporate these in the 1991 GNP revisions.

The methodological shortcomings for measurement of output in the construction industry have resulted in data that are inconsistent and imply plunging productivity. While productivity in the U.S. economy has slowed considerably over the past few decades, the construction industry has fared much worse than the overall economy. Blame is frequently placed on construction techniques, which particularly for home building, have not changed much over the years.

Productivity in construction may not have kept up with the rest of the economy, but there are clearly serious problems in attempting to determine its precise level. The most serious problem is the measurement of activity in the repair, maintenance, and upgrading of existing facilities.

Residential remodeling and nonresidential reconstruction are two areas where there is concern that ongoing surveys may be missing substantial portions of activity. In the past six years, special studies by the U.S. Department of Commerce have called into question their own estimates of the size of these markets.

In 1984, the Department of Commerce changed its data collection procedures that estimated the size of the residential remodeling market. That year, it overlapped the two procedures to determine if they produced comparable results. The results indicate that they did not:

1984 Residential Remodeling Spending
(Billions of Dollars)

	Old	New	Difference
Total	63.2	69.8	+10.4%
Maintenance and Repairs	23.8	28.9	+21.4%
Additions and Alterations	23.6	27.8	+17.8%
Major Replacements	15.8	13.1	-17.1%

Not only was there a \$6.6 billion discrepancy between the two surveys, but the components showed even greater percentage differences. If there was a consensus that the new survey format was accurate, there would be no problem. The industry seems uncomfortable with the reasons for the differences, and therefore unsure of the reliability of the database.

While the residential remodeling database may be a bit rough around the edges, there are much more serious questions regarding spending on the existing nonresidential building stock. The Department of Commerce

estimates spending for improvements to nonresidential buildings. For 1986, the estimate was \$25.7 billion in spending for improvements compared to \$70.0 billion of spending for new construction.

The Department of Commerce conducted a special survey to get more detail on spending for nonresidential improvements during 1986. Their results indicated that actual spending for nonresidential improvements was \$49.4 billion, with an additional \$28.6 billion being spent on upkeep for these buildings.

This \$23.7 billion dollar discrepancy (\$49.4 billion minus \$25.7 billion) for the one year that data are available has implications extending far beyond productivity in the construction industry. That figure is over 5% of the total construction industry, and over 0.5% of the total U.S. economy that year. Conventional wisdom in the industry is that the special study more accurately reflects the true size of the nonresidential reconstruction market.

Similar issues are present for maintenance and upgrading of facilities in the \$90 billion per year heavy construction market (streets and highways, water and sewer projects, utilities, and so forth). Solid estimates are even more difficult to obtain for this market.

Several major steps are needed to improve data on construction. First, the monthly survey of industrial construction needs to be benchmarked annually. The coverage of the sampling frame is very poor and there are problems with the overhead cost data reported in the survey. Current efforts to use the quinquennial census of construction industries as the primary source of such benchmarks should be completed for incorporation into the 1991 GNP benchmark. To improve the quality of these benchmarks, the census questionnaire should be reviewed to determine whether new inquiries are needed for this purpose. In addition, an annual survey of construction industries similar to those now conducted for manufacturing, trade and services is needed to provide up-to-date benchmarks. Second, improvements can be made for other types of construction, such as utilities, by making relatively minor changes in existing reporting requirements.

4. Prices: Expand and seasonally adjust the employment cost index and accelerate the Bureau of Labor Statistics program to expand and improve producer, consumer, and international price indexes to measure service prices more accurately.

The accurate measurement of wage and price trends is vital to the sound management of fiscal and monetary policy. In addition, the measurement of productivity trends, and the implication that such trends have for taxation and other dimensions of public policy, is also critically reliant on the accurate measurement of wage and price trends. The Employment Cost Index and price indexes in the service sector are two areas where improvement is necessary.

Over the past decade, the Employment Cost Index (ECI) has become an important tool for measuring compensation trends. The Medicare system uses the ECI in establishing its cost containment policies and in determining the allowable increases in hospital charges. In the private sector, the ECI is used to forecast wage trends, and in wage and benefit cost planning. It is also an important tool in collective bargaining, and is increasingly being used as a labor cost escalator in long-term purchasing and service contracts.

With these and other important functions, the Employment Cost Index must provide an intelligent appraisal of labor costs. It does, however, fall short in a number of critical areas. First, the Bureau of Labor Statistics estimates that 6.4% of workers are not covered by the ECI. These workers are employed in the Federal Government, agriculture, and private households. The ECI should be expanded to completely cover the U.S. economy, including the sectors difficult to measure.

In addition to more complete coverage, the ECI should undertake special studies of wage and benefit costs in important industries that are experiencing particular problems with inflationary pressure. The health care industry is a prime example of an industry whose inflationary pressures have captured attention and concern across the entire economy.

Finally, the Employment Cost Index will be seasonally adjusted as of January 1991. This makes it possible to measure the cyclical trends in inflation from month-to-month or quarter-to-quarter. For early detection of building inflationary pressure and improved planning ability, a seasonal adjustment factor can be usefully applied to the ECI. Both seasonally adjusted and unadjusted data will be available to the public for the widest application purposes.

The Boskin Initiative focused first on the measurement of the output of the service sector. However, beyond the measurement of the output, the measurement of the prices of services is also important. The heterogeneous industries categorized as the service sector account for roughly two-thirds of private sector GNP. Reliable price indexes exist for very few of these

industries. For some there are no price indexes. The absence of reliable price indexes for these industries frustrates the analysis of their contribution to inflation. Seemingly, the contribution is large and not very tractable to anti-inflation policies. Rightly or wrongly, some characterize the current inflation as service sector dominated. The lack of price data also limit our ability to develop reliable indexes of output of the service sector industries. And, if output cannot be measured accurately, neither can productivity. Statistics available currently suggest that much of the productivity slowdown is in industries that are part of the service sector. But, because of measurement error, one cannot be sure that such a hypothesis is true. Further, if the hypothesis is true, it not at all clear the reasons for the slowdown in service sector productivity.

The initiative to improve service sector price indexes and add new ones is a long run task, work on which can no longer be deferred. The task is long run because it requires going back to the basics of economic measurement. If it was easy to measure service sector prices, it would have been accomplished by now. But, in many service industries there are basic unresolved issues. In medical care, what is output? How can the output of computer software be measured? A characteristic typical of services is that their purchase usually requires an input of time by the purchaser. If that input is changed by changes in the nature of the service, how should that be reflected in the price index for the service.

There are a host of basic issues that must be resolved before price index coverage of the service sector industries is complete and adequate. The task should be funded adequately and the work should begin. Budget and staff are needed to accomplish this.

B. Investment, Saving, and National Wealth

1. The System of National Accounts (SNA): Revise the U.S. National Income and Product Accounts to be consistent with the major components of the United Nations System of National Accounts, which are used by most of the major industrialized nations of the world.

The proposed U.S. move to the U.N. System of National Accounts promises major benefits for data users. First, the SNA approach provides a more comprehensive, better-integrated picture of the economy. In particular, it integrates financial flow data into the national accounting system, providing an improved basis for analysis of crucial questions relating to savings and investment. Second, with the move to the SNA, U.S. data will become more comparable with that of other countries. Most countries with centrally-planned economies, the Soviet Union and most East European countries, are accompanying their transitions to market-oriented economies with moves to the SNA.

For many data users, the surprise may be that the United States does not already conform to the SNA. The origins of the SNA parallel the origins of the U.S. national accounts, and U.S. experts participated in the drafting of the original SNA system, which was adopted by the U.N. Statistical Commission in 1953. Revision of the SNA in 1968 extended it to include input-output accounts, flow of funds accounts, and balance sheets. It is this expanded system to which the United States has not yet conformed.

With today's integrated world economy, U.S. conformity to the SNA takes on increased importance. Indeed, it seems almost inconceivable that the United States -- for so long a world leader in national accounting -- would allow itself to lag in developing a comprehensive, internationally-oriented economic accounting system. Ironically, many countries who have adopted the SNA conceptually, do not have the data developed to implement the SNA. The U.S., by contrast, has more of the basic building blocks.

Funding is needed next year (and is provided in the Administration's FY1991 budget request) to begin the process of moving to the SNA by 1995. This schedule is designed to take advantage of the forthcoming revisions in the U.N. guidelines for the SNA. Draft revisions in these guidelines are available now, and the final approval by the U. N. Statistical Commission is expected early in 1993.

Among a number of concrete benefits that should stem from the U.S. move to the SNA are:

Improved comparability of the U.S. accounts to those of other countries, including the ability to more-meaningfully compare savings rates, inflation, and economic growth;

A break-out of governmental capital expenditures, providing enhanced information for fiscal policy analysis and better understanding of overall national savings and investment;

"Satellite" accounts covering health, education, the environment, and other economic concerns to supplement the traditional national accounts. The United States plans to begin its "satellite" work with efforts to develop a research and development account.

The requirements of the SNA are requirements for national account improvements that are badly needed in any case. The focus on SNA is an opportunity for major strengthening of the statistical framework that forms the basis for economic analysis and forecasting by both government and private economists.

2. International Investment: Estimate direct investment using market values or replacement cost rather than historical cost and address problems with the measurement of international portfolio investment and other capital flows.

As a result of the large U.S. current account deficit, the U.S. international investment position (IIP) has declined substantially over the past seven years. However, the true magnitude of the IIP is largely unknown. The uncertainty surrounding this estimate is, in large part, the result of the estimate of direct investment, which is carried at book value as opposed to the current market value of assets.

The direct investment estimate which consists of both foreign direct investment in the U.S. and U.S. direct investment abroad, are maintained at book value. By definition, these asset values reflect prices at the time of acquisition as opposed to the current period. As a result of book valuation, both inward and outward direct investment positions are understated in comparison to market value. It is thought that the understatement of outward investment is probably significantly larger because these investments are more "mature". The time profile of these investments suggests that the U.S. is less of a "debtor nation" than the data make it appear.

Book values are used in the measurement of direct investment primarily because they are the only values available. Historic cost is the accepted basis of maintaining accounting records in the U.S. and many other countries. Thus, book value estimates are the only ones available and they facilitate international comparison. In addition, an estimate of market values is very difficult to obtain. Estimates can be obtained from "exit" or sale values or from independent appraisals. However, the existence of this information represents the exception rather than the rule. More often, book values of foreign affiliates are subsumed as part of the book values of other assets -- making an independent estimate impossible for a company to report.

While marketable securities are more readily valued at current prices, several problems prevent precise valuations. First, the coverage of capital flows may be incomplete because a tendency of funds to flow through marketable securities as opposed to bank loans. Second, price change adjustments may not be accurate because of mismatches between stock price indexes applied, the actual mix of securities held, the interest rates applied and the rate appropriate to actual maturities held. Third, mismatches are also possible between the price and exchange rate changes and the securities held because transactions attributed to an important international financial center may not be in the securities which originated in that country.

Finally, U.S. official gold holdings are presently valued at \$42.92 per ounce. The current market price is approximately nine times that amount. Because of the need to maintain consistency with other U.S. Treasury accounting and reporting to the IMF, changing these estimates is a problem.

Improving the estimate at the IIP will be very difficult. The solution will require construction of appropriate price indices for capital goods and equities, construction of net flows of plant and equipment and equity, and use of replacement cost and equity price methodologies similar to those recommended by the SNA.

In addition to these problems with the valuation, there are significant problems with the measurement of international portfolio and other capital flows which should be addressed. The statistical system has had increasing difficulty keeping up with the rapid pace of financial innovation and increasing integration of world capital markets. Capital flows are extremely large and volatile and in the first six months of 1990, the statistical discrepancy between the current and the capital account was \$50 billion. Statistical discrepancies of this magnitude make analysis of changes in capital flows into and out of the U.S. very difficult.

3. Domestic Investment and Saving: Accelerate work to improve measures of investment and saving and to the extent possible reconcile differences between the various measures of saving; improve the collection, coverage, and processing procedures for the financial flow data used in the Federal Reserve Board flow of funds accounts; and undertake the proposed annual investment survey at the Census Bureau.

Household savings rates have declined sharply during the current recovery. Meanwhile, concerns about U.S. under-investment and international competitiveness abound. Unfortunately we don't know enough about how much we really do save and invest.

Household saving statistics come in two forms. First, the National Income and Product Accounts (NIPA) estimates personal saving indirectly: data are collected on income and spending, with the difference serving as an estimate of saving. Alternatively, the Flow of Funds estimates saving based upon changes in household assets and liabilities. In essence, we have a current account (NIPA) and a distinct capital account (Flow of Funds) measure of saving. This distinction is particularly key given our poor record in handling foreign transaction where differences in export/import estimates have their match in savings/investment flows across borders.

Even with the NIPA estimates there are a number of issues. These include the treatment of purchases of consumer durables as consumption instead of saving, the measurement of personal taxes on a cash instead of a withholding basis and finally the treatment of net contributions to government retirement funds as government instead of household saving. At the national level, each year it seems the national savings rate is regularly revised upward with the annual benchmarks. Primarily this reflects upward revisions in income data which are based on company reports to the IRS and are available with a lag of several years.

Investment, particularly construction, needs better benchmark and survey methods. The sensitivity of housing starts data to large seasonal factors, the sensitivity to CPI data due to homeowner equivalent rent calculations and the large revisions in investment data every July with the annual NIPA benchmark revisions, all suggest a need for an improved data base which is currently too dependent upon building permits and the Dodge survey.

In general, the data used to estimate business investment expenditures are inconsistent and incomplete. Estimates of equipment investment are constructed from producers' shipments, not measures of investors' purchases. Investment expenditures from the Plant and Equipment Survey are not detailed enough to estimate the nonresidential fixed investment component of the national accounts. Plant construction expenditures from the Value of New Construction Put-In-Place Survey (VIP) are based on a sample of selected construction projects, not a sample of all businesses. The VIP data are never benchmarked to a comprehensive survey of business investments.

The Census Bureau should undertake the Annual Investment Survey immediately. Such a survey should be designed to integrate, consolidate and develop a statistically defensible investment survey program which includes quarterly, annual and periodic surveys. The program should provide more detail by type of asset in the annual and periodic surveys that are needed for the nonresidential fixed investment component of the NIPA. The program should also improve the consistency of capital expenditure estimates across all investment data collection programs and it should consolidate the capital expenditure questions that are now contained in several different periodic surveys.

As a result of the lack of existing investment spending data, it is hard to determine how our investment goods are being used and whether there is enough saving to support the type of investment we need to improve America's competitiveness.

4. Inflation Adjustments: Add supplementary series to the National Income and Product Accounts that separate the real and inflation components of the return to capital. Currently this is done only with the corporate profits series.

Part of the interest payments from a debtor to a creditor merely compensate the creditor for the decrease in the real value of the asset caused by inflation. Only the real component of interest payments, the part over and above that necessary to compensate for inflation, belongs in the creditor's real income - that which can be consumed while keeping real wealth intact. This dichotomy clearly implies that the inflation component of interest payments should be excluded from interest income.

Assuming a rate of inflation greater than zero, both physical and financial assets have the common property that their values decline over time. The value of physical assets decline because of depreciation and obsolescence. This loss of value has conventionally been offset by payments out of operating expenses to a depreciation fund which is built up over time to replace the completely obsolete physical asset. In the case of financial assets, a rate of inflation greater than zero causes the funds invested in those assets to lose value. Over time the original funds can only be used to acquire a smaller quantity of goods or services and real wealth is thereby decreased. Thus, interest payments, like depreciation, must at least offset the depreciation in the value of financial assets caused by inflation.

Despite the similarity of the dynamic nature of physical and financial assets, the National Income and Product Accounts (NIPA) treat these two asset types differently. As the NIPA are presently structured various sources of income are adjusted for various accounting abnormalities. Proprietors income, rental income and corporate profits are all adjusted for capital consumption. These components of income are increased by an amount which offsets the excess of depreciation permitted under tax law and economic depreciation. Similarly, corporate profits and proprietors income are adjusted for inventory valuation which is the amount generally accepted accounting principles permit to exceed (fall short of) economic appreciation (depreciation) of inventory values.

In the case of rental and interest income in NIPA, a methodology should be developed to separate income between the inflation compensation component (ICC) and the real income component (RIC). Such a methodology would be applied to both interest earned directly and imputed interest earned from various financial services. Depending upon which economic entity earns the interest, the ICC would become part of the compensation of employees, corporate profits and proprietors income, while the RIC would be reported as rental or interest income. The methodology would also account for interest paid and received to government and foreigners. Such a methodology would permit rental and interest income to reflect only income which can be consumed while keeping real wealth intact.

C. Employment, Income, and Poverty

1. Family Income and Poverty: Begin research on developing a new benchmark estimate of poverty appropriate to prices, consumption patterns, and family composition in the 1990's; and continue publication of the experimental estimates of real family income and poverty.

Most of our measurement of poverty and income date from the early to mid-1960s. Given the social and economic changes that have occurred since then it is not surprising that some of these measures need to be reevaluated. The most fundamental change which has occurred over the past three decades are changes in the underlying consumption patterns that the poverty level estimates assume. Current measures of the poverty level have their origins in the 1960's when it was observed that the average family spent one-third of their income on food. The Department of Agriculture's least expensive recommended food plan was multiplied by three to define the poverty level. Today, families spend a much smaller proportion of their income on food while they spend a much larger proportion of their income on housing and childcare.

In addition, current poverty level estimates do not consider non-monetary benefits -- such as public housing and medicaid which the poor receive. The absence of these measures results in over-estimates of the extent of poverty in the U.S. The many and offsetting sources of bias in the poverty level estimates -- both positive and negative -- make the true nature of poverty subject to significant error.

The following are just a few of the steps that could be taken to improve upon these measures:

Currently the federal government uses the consumer price index for urban areas (CPIU) to adjust the poverty threshold -- the income below which one is officially considered to be poor. The problem is that the CPIU is a national index of prices and may mask substantial regional variation in prices. Using regional prices to adjust the level of income at the poverty level for price changes would be more accurate. The Labor Department already collects price information for a number of metropolitan areas. However, the metropolitan area samples are not large enough or complete enough to support the use of this data as a metropolitan area poverty threshold adjustment index. Moreover, what is really needed is a place-to-place living cost comparison, which is different from a consumer price inflation index. Such data would be difficult and expensive to produce.

The CPIU is designed to capture the consumption patterns of a typical urban family. That pattern may, however, not accurately reflect the consumption pattern for a family close to the poverty level. For example, the CPIU assumes that food makes up about 17 percent of a family's

expenditures. It is very likely that food makes up a far bigger portion of a poor family's budget than the CPIU indicates. If that is the case, a jump in food prices will actually reduce this family's purchasing power more than the CPIU would suggest. The solution may be to use a separate index that better captures the basket of goods consumed by poorer families.

The Department of Health and Human Services (HHS) guidelines used to calculate the income needed to qualify for various government assistance-- such as Headstart and the Food Stamp Program -- are adjusted for price changes once a year. However, the guidelines use the income adjusted for price changes from the previous year to qualify families. For example, for 1990 the HHS is using the 1989 income estimates from the Census Bureau in their guidelines. By lagging the income measures by one year, some families just above the poverty level are being denied access to these programs. A better way would be to eliminate this procedure and use current prices to adjust income.

Lastly, although the mismeasurement in the housing components of CPIU- which pushed up the overall inflation rate -- has been corrected, the data have only been revised back to 1967. It is not possible to go back further because of changes in the Consumer Price Index system in the 1978 revisions and lack of data.

2. Business Establishments: Continue work toward the goal of eliminating unnecessary duplication, but avoid the loss of unique and important alternative data; and explore ways for the Census Bureau to share its establishment data with the Bureau of Economic Analysis, for use in improving the national accounts.

Currently, several government agencies, including the Census Bureau, the Internal Revenue Service, the Bureau of Labor Statistics and the Bureau of Economic Analysis, compile lists of businesses for specific uses. These lists represent a vast storehouse of economic information of use to a variety of analysts. Because of confidentiality restrictions under which most of this data was collected the information from these business lists must be aggregated before it can be disseminated. This creates two problems. First, because of the large volume of data involved, the results of these aggregations are released infrequently and with very long delays. Second, because of the lack of comparability among sources and the inability to get at the specific micro-elements of this data, it is difficult to combine information from one source with any other source.

Being able to quantify the characteristics of the business population can open the way toward understanding many intricacies of the U.S. economy. Business starts and closures and the growth of new and small businesses are major factors in predicting employment growth at the national and local levels. Analysts could make crucial distinctions between employment growth versus employment displacement, an issue that has not yet been well-handled by empiricists. The same data often can explain changes in corporate and sales tax revenues for many government jurisdictions.

Because a vast majority of firms are small, this data can permit more detailed studies on the general business climate, i.e., how well business sector fiscal and monetary policies are working. For example, if there is indeed a "credit crunch" occurring in today's economy, its evidence would show quickly on smaller firms, whose ties to credit markets are often tenuous.

In order for these types of analyses to be performed, efforts must be taken to share data sources. Beyond the proposal contained in the Boskin Initiative data should be shared among the Census Bureau, the Bureau of Economic Analysis, the Bureau of Labor Statistics and the National Agricultural Statistical Service. This would eliminate duplication of effort among several public and private agencies and ensure that the coverage of the business population is as comprehensive as possible.

A daunting problem concerns the standardization of this data. Even the definition of what exactly constitutes a business has not been resolved. The IRS includes in its files many entities not counted by the SBA or Dun & Bradstreet because these "businesses" would likely be classified as one or a group of self-employed individuals. Add in the possibility of corporate

subsidiaries, which can be wholly or partially owned, or branch offices, and the dimension of this problem increases. Time adds another layer of complexity: how does one treat a time series on a business if a merger or acquisition has occurred?

Because no single set of definitions or specifications would serve all users, many types of data aggregations would have to be performed. In addition, this information needs to be made available to the public on a more timely basis and with greater frequency. The SBA publishes its biannual results only after a two-year period has elapsed. The Census Department has just released the results of their 1987 business tabulations, which are performed every five years.

This type of business demographic data, if standardized and made available with a greater periodicity, can play as important a role in the framework of U.S. economic statistics as demographics on individuals do today. Business demographics are a rich and unique source of information because they can be analyzed by region, industry and firm size. These data are the natural complement to the existing array of economic statistics.

3. The Survey on Income and Program Participation: Explore the possibility of carefully linking the data from the Survey on Income and Program Participation (SIPP) to administrative records, while taking great care to safeguard confidentiality.

The Survey of Income and Program Participation (SIPP) provides comprehensive information on the economic resources of the U.S. population and how public transfer and tax programs affect the financial circumstances of members of the population. SIPP is intended to provide policy makers with a means to measure the efficiency of government tax and transfer programs, for estimating future program costs and coverage, and for assessing the effects of proposed policy changes. SIPP was created in response to the need to replace the March Income Supplement of the Current Population Survey (CPS) as the primary source of data on the distribution of personal and household income. One of the limitations of the CPS is its inability to provide linkages to administrative records for analysis. The goals of SIPP in the use of administrative records was to increase sampling efficiency, compare survey data for validation and to supplement survey data with administrative record data for items that are difficult to obtain in a survey.

At the present time, data from both Social Security Administration (SSA) files and Internal Revenue Service (IRS) federal tax files have been linked to SIPP for the 1984 survey panel. The data from SSA include amounts of monthly benefits paid under OASDI, monthly benefits paid by the Supplemental Security Income (SSI) program, selected items from the Summary Earnings Record files, including quarterly earnings amounts up to the FICA taxable maximum. The data from the IRS includes a small number of items including amounts of adjusted gross income, wages, interest, dividends and rental income and other items such as the number of exemptions and type of return.

There are a number of issues that arise from SIPP that can best be addressed by the use of a linkage between SIPP and administrative records. While taking care to guard the confidentiality of survey respondents, the Census Bureau should begin, immediately, addressing these issues.

The Census Bureau should implement its plans to evaluate nonsampling error related to income data collected in SIPP. With the use of administrative records, the research should examine the general trend toward underestimation of income amounts and decompose the overreporting and underreporting of amounts into false positive and false negative income receipt. The research should also identify which types of income and which areas of the income distribution suffer from the largest problems of nonsampling error and which subgroups of the population are subject to the largest error. The results, which would also provide badly needed national aggregate of SIPP data, should be used to guide the development of procedures to adjust the survey responses in order to substantially reduce the levels of errors in the income data.

4. Labor Force: Continue the Bureau of Labor Statistics and Census Bureau efforts to improve and modernize the Current Population Survey and the Current Employment Statistics Program; and continue Bureau of Labor Statistics efforts to reconcile and reduce discrepancies between the employment series arising from the household and the establishment survey.

From the time that the specific concepts of labor force, employment, and unemployment were first introduced during the latter stages of the Great Depression, data derived from the Current Population Survey (CPS)--conducted by the Bureau of the Census for the Bureau of Labor Statistics (BLS) -- have been an integral part of economic decision-making. In today's increasingly complex and fast-changing economy, social, and economic characteristics take on ever-greater importance.

Although the current scientifically-selected sample of approximately 60,000 households yields a great deal of valuable data, the CPS has not evolved sufficiently in recent years to meet the information needs of today's society. Government economic policy and business decision-making would be enhanced through a program of modernization and expansion -- an initiative long-discussed within the Federal statistical community. In response to the recommendations coming out of the 1979 Levitan Commission report, the BLS developed plans to expand the CPS sample size -- an expansion which was designed to yield national estimates with a higher degree of statistical reliability and with expanded detail on the demographic, social, and economic characteristics of the labor force. Unfortunately, the funding necessary to accomplish even the modest first-stage goals of the BLS initiative has not been forthcoming because of Federal budget constraints -- and because sufficient priority has not been accorded the proposals.

The BLS should continue its efforts to improve the usefulness of data coming out of the CPS. Specific enhancements to the CPS data base should include, but not be limited to:

1. Augmented sample which would yield higher quality (smaller sampling errors) monthly estimates for the currently published level of detail;
2. Sample sufficiently large to allow publication of monthly labor force estimates for all states and Regions (instead of the currently published data for only the 11 largest states);
3. Expansion in the number and frequency of CPS supplementary information reports for particular labor force segments or regarding particular characteristics of the population (e.g., occupational mobility, displaced workers, working mothers, family earnings, etc.).
4. Development of a longitudinal component of the CPS -- perhaps 5,000 households -- to be kept separate from but along side the CPS to permit

study of both cross sectional data as well as such longitudinal issues as duration of unemployment, unemployment spells and movement into and out of unemployment.

A modernized CPS would ensure that economic policy is based upon an accurate accounting of the labor force status of the population, and would provide sufficient detail to allow for an assessment of special labor force problems confronting segments of the population. Increased demographic and geographic detail would ensure that employment and training program initiatives meet the needs of the nation, and that funding is distributed efficiently on the basis of greatest local need.

The BLS should also redouble its efforts to expand and reorient the Current Employment Statistics (CES) Program -- the monthly establishment-based survey of about 300,000 employers. The employment, hours, and earnings information collected by industry and geographic location is extremely important in helping economic decision-makers to identify changes in industry employment levels, and to pinpoint regional variations in employment growth and earnings.

Since its origins in 1915 as one of the BLS's first monthly statistical programs, the CES has focused predominantly on the employment and earnings trends of manufacturing industries. Despite the continuing evolution of the U.S. economy away from goods-producing industries and towards service-producing industrial sectors, the overwhelming majority of 3-digit and 4-digit SIC's for which CES data are published are in the manufacturing sector.

Although the BLS has long-recognized the need to broaden and expand the base of the CES monthly sample, and indeed has made some modest progress in developing monthly estimates for a few large nonmanufacturing industry groups, much remains to be done. Specific enhancements to the CES data base which should be funded and accorded priority by the BLS include:

1. Augmentation of, and/or adjustments to, the current size and industrial stratification of the CES sample which would provide industry estimates more closely approximately the economic significance of specific SIC's. Published estimates are developed for 11 three- and four-digit SIC's within the fast growing 5.9 million-employee "Business Services" industry versus the 18 detailed industries published for the 720,000-worker "Textile Mill Products" manufacturing industry group.

2. Provide increased funding to States for the purpose of developing more detailed regional hours and earnings data. Currently, statewide employment estimates are often produced for only 2-digit SIC groups, and hourly earnings data are unavailable for Metropolitan Statistical Areas in States as large as New Jersey and Indiana.

The CES Program as currently structured is, from the standpoint of sound economic decision-making, dangerously out-of-date. Between 1988 and 2000 -- according to the BLS's own projections -- employment in manufacturing industries will decline by 1.6%, while employment in the

Services industry division will expand by 35%. Work is now underway to define 30 additional service industries. Greater industry detail would help economic policy makers develop educational and retraining programs most appropriate for the industrial and occupational needs of this decade and beyond, and greater geographic detail would help Federal, State, and local funding sources better target the distribution of their limited training and retraining resources.

Data from the household employment survey (CPS) and the establishments employment survey (CES) differ from each other because of differences in definitions and coverage, sources of information, methods of collection, and estimating procedures. However, in recent years, the magnitude of differences and, occasionally, the direction of movement, have suggested problems beyond the purely conceptual.

The BLS should intensify its ongoing efforts to reconcile the two employment series, and continue to make the improvements in quality and sample coverage which would serve to reduce the discrepancies between the two series which are not otherwise explainable. A commitment towards implementing the recommendations outlined above represents the single greatest step that can be taken towards reconciling the non-conceptual differences between the CPS and the CES. The household and establishment data supplement one another, with each survey providing significant types of labor force information that the other is not designed to supply. Improving the coverage and design of the two surveys simultaneously improves the usefulness of the complete package of information needed for insightful economic analyses and intelligent economic decision-making.

Senator **SARBANES**. Thank you very much. That is a very helpful statement, and the report on which it is based is also extremely helpful.

Mr. Hawkes, we'll include your prepared statement in the record. If you want to proceed, perhaps summarize it and hit the high points, I would be happy to hear from you.

**STATEMENT OF WILLIAM HAWKES,
VICE PRESIDENT AND CHIEF STATISTICAL OFFICER,
NIELSEN MARKETING RESEARCH, A.C. NIELSEN COMPANY**

Mr. **HAWKES**. Thank you, Mr. Chairman.

In my few minutes today, I wanted to try to provide a perspective from the private sector that may be different and somewhat unique because of a couple of factors. One is that as Chief Statistical Officer of Nielsen we serve a dual role as both consumer of statistics and producer of statistics. We make use of economic census data and also provide to our manufacturer clients information on the retail sector of the economy. We have had the opportunity in this work to understand how the private manufacturing and retail sector uses statistics to help guide its own decisionmaking. We've also had the opportunity to observe how faulty decisions can be based on the use of faulty data, both faulty private-sector data and faulty public-sector data. Second, we carry out our marketing research surveys in 27 countries around the world. There we have had, again, a user's perspective of being able to state confidently that, despite its flaws, the U.S. statistical system, in our opinion, still is the best in the world. I think this is an important credit to the people who were before you earlier this morning. This is not to say that improvements are not needed. They certainly are.

I would like to offer a couple of perspectives that may not have been mentioned in the initiatives discussed today. One is the critical need for continuing the availability of subnational statistics. Even though the Federal Government is primarily involved in making federal policy decisions, we realize that even the largest national manufacturer cannot formulate his marketing plans solely at the national level, because to do so would be wasteful and inefficient. Instead, manufacturers rely on local area data to gain better insight into the geographic characteristics of their marketing opportunities, so that they can deploy their promotion and advertising resources efficiently by targeting the areas where they can make the greatest difference. The same thing is true in the public sector. We have seen in recent months an interesting phenomenon. For example, I noticed that the unemployment statistics for the month of November 1990 showed New England with a much stronger trend in unemployment compared to the rest of the country. I also noticed in the current retail trade statistics for New England in November that the recession had manifested itself much more dramatically in terms of a downturn in retail sales than one might have concluded just on the basis

of the unemployment figures alone. I think this knowledge of the selective geographic nature, for example, of the current recession can help guide more efficient public policy in some important areas than by simply allocating federal expenditures uniformly to all sections of the country, including those where it might be wasteful. Good quality regional economic statistics are a fairly new thing in this country. They've really only existed since the mid-1960s, and I want to make sure that they don't get overlooked in the current, well deserved thrust toward the service sector and other needed improvements.

The second perspective I have is that businessmen need to work more closely with government, and government needs to work more closely with business in terms of understanding how business people view data and how they view data collection. One illustration I cited in my prepared presentation is that, "I know of no manufacturer or retailer who publishes his sales on a seasonally adjusted quarter-to-quarter basis." You can read the *Wall Street Journal* every day, and you'll never see a manufacturer speaking of seasonally adjusted quarter-to-quarter change. Yet, every key government economic statistical survey is designed to optimize the measure of quarter-to-quarter change rather than a year-ago change. So, in some ways, it's hard for a businessman to interpret a 2 percent drop in Gross National Product on a seasonally adjusted quarter-to-quarter change when he's looking at his own change against a year ago. What this suggests to me is that, in a design sense, the key statistical surveys should take into account the need on the part of business for viewing economic changes in terms of change from a year ago because, after all, the retailer doesn't say "My Christmas light sales are up on a seasonally adjusted basis from November." He says, "My Christmas light sales are up from last Christmas." And, so, there is to some extent a disjunction between the government and business views of economic developments.

The next issue is one on which I want to echo the comments of my colleague. While there have been some efficiencies to including statistics under the Office of Information and Regulatory Affairs, this, I think, has a negative connotation in the minds of business. Business, in general, thinks information is a good thing. It thinks regulation is a bad thing. To say that we're going to include information collection, survey collection, under a regulatory auspice in some ways sends the wrong signal to business that regulation and information are inextricably intertwined. I don't think we want to send that message. I think we want to send the message that information is the key ingredient and that people can provide information without fear of regulatory implications or retaliation.

And that leads to one of my final comments that there is, in my opinion, an oversimplified dichotomy between voluntary and mandatory surveys. I think "voluntary" is a bad term because, in some ways, "voluntary" says that Congress considers this program to be kind of

unimportant and doesn't really care whether you cooperate; when, in fact, Congress does care whether businessmen cooperate.

I know there was legislation proposed before Congress about 20 years ago to make the population census voluntary, which would have been a real disaster. And somehow businessmen need to be told clearly that the Government considers the information they're being asked to provide is important for public policy purposes. Therefore, "voluntary" isn't quite the right word to convey the importance that Congress places on businesses providing these kinds of information.

I fully endorse the initiatives recently proposed by the Council of Economic Advisors. The service sector particularly has too long been ignored. Improving international comparability is also a critical goal. Certainly, the efforts to coordinate the separate business establishment list used by Census and BLS is an important objective. At the moment, there are two different statistical agencies providing annual estimates of employment by county, by kind of business. This is not an efficient use of the Government's resources.

Finally, I support the notion of improving the importance of government statistical and economic work. This is a change I have seen in my 30 years in working with government statistical agencies. Thirty years ago, the best and brightest people in the survey research business viewed civil service work as an important calling. These people were, for the most part, located here in Washington. Increasingly, the Government has not been able to keep even with the private sector at any level—beginning level, managerial level—in terms of compensation and perceived importance of work. Too often, government work is viewed as adversarial to business interests. University students have not had the vocation to government statistical work that they once had.

I do support the proposed program of setting up a centralized training and educational system here in Washington as, perhaps, a way of helping to restore the centrality of government statistical work within the statistical profession. If we don't do this, 20 or 30 years from now, we will be in danger of having a statistical system staffed by not the most capable people. And that would be a real disaster.

That concludes my prepared comments.

[The prepared statement of Mr. Hawkes follows:]

PREPARED STATEMENT OF WILLIAM HAWKES

I welcome the opportunity to share with the Joint Economic Committee my perspective on Federal Statistics and on ways in which these programs might be improved.

I am Vice President and Chief Statistical Officer of Nielsen Marketing Research. I have worked closely with the U.S. Government statistical agencies over the years, have served as chairman of the Business Research Advisory Council to the U.S. Bureau of Labor Statistics, and have chaired the American Marketing Association's Census Advisory Committee.

For the past 57 years, the A.C. Nielsen Company has provided marketing research information to the leading manufacturers of consumer goods in the United States and abroad. This information consists of reports on the sales of individual consumer goods through retail stores, together with data on manufacturers' and retailers' promotional and advertising efforts in support of these products. These services are now provided in 27 countries around the world.

In carrying out this work, as well as in our television audience measurements, we make extensive use of data collected by the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, and their counterpart agencies in other countries. We work closely with businessmen in both manufacturing and retailing sectors who, directly or indirectly, have also come to rely on government statistical data for information on the industries they represent and the markets they serve.

These years of experience have given us, I believe, a special perspective on U.S. Government statistics programs, in two respects:

1. First, in our dual role of both producer and consumer of statistical data, we well understand the need for statistics that are accurate, timely, and cost-efficient, and the ways in which statistics are used to guide decision-making. We also understand how the use of faulty data can lead to incorrect decisions.

2. Of equal importance, we have come to recognize from our firsthand experience that U.S. Federal statistics programs are the best in the world in terms of scope, content, accuracy, and -- of special importance -- dependability. We have seen important statistical programs in other countries either abruptly terminated or inadequately resourced, and are keenly aware of the gaps in statistical coverage or frequency inherent in many countries' statistical programs.

In my remarks today, I would like to address a few specific issues that may not otherwise be covered in testimony before your committee.

The first of these issues is the need for geographic area data collected, reported, and analyzed in a coordinated manner. In our experience, very few manufacturers can deal with their marketing or distribution problems and opportunities strictly on a national scale. Even the largest, most successful manufacturers prefer to structure most of their promotions and much of their advertising at a regional, sales area, or even television market level. To meet this need for local data as well as national aggregates, we often provide television audience measurements and consumer sales measurements to manufacturers for up to 50 individual geographic breakouts of the U.S.

The reason for this geographic local area focus is straightforward. A manufacturer, confronting a significant competitive challenge, would respond inefficiently were he solely to design his promotion and advertising strategy at the national level. Instead, he would seek to identify those sales regions or metropolitan markets in which his competitor was making important inroads, and target his response accordingly. Through such targeting, promotion and advertising dollars can be allocated efficiently, rather than being wasted in areas where they are not needed, or inadequately funded in areas where major expenditures would be required.

Similar issues confront U.S. Government policymakers. The widely heralded 4th quarter recession of 1990 seems not to have affected all regions of the country with equal severity. Recent unemployment and retail sales trends vary widely from one section of the country to another. For example, in November 1990, unemployment in New England showed a sharp increase of 2½ percentage points from the prior year, while retail sales in that region actually declined by 4%. In contrast, the East Central states showed stable unemployment patterns and robust retail sales trends, which were up more than 6% over the same interval.

Government programs designed to stimulate economic growth, just as manufacturers' promotional efforts, can be deployed more efficiently if applied selectively in geographic regions where the need is greatest. In the absence of good regional or local information, government policymakers are forced to pay attention to national aggregates only, and, in so doing, may be encouraging wasteful remedial expenditures.

While some states and cities do attempt to collect limited statistical information, generally as a by-product of business

tax receipts, our experience has been that these programs do not lend themselves to cross-sectional comparisons by region or state because of different definitions, different tax rates or structures, and different coverages, with the added practical difficulty of trying to staff 50 state statistical agencies with capable survey statisticians. Even the federal government is having difficulty recruiting and keeping people with these qualifications.

The second issue deals with the need to develop a frame of reference in which businessmen and government officials speak a common economic language in collecting survey data from businessmen. The most willing survey respondent is likely to be the one who relies on the data collected by the survey in which he is being asked to participate. Many corporations, in fact, rely on government data without realizing that they are doing so, as in the perhaps apocryphal story of the corporation president who claimed that the government did not need to collect gross national product data because it could be found in the Wall Street Journal. However apocryphal, this story reminds us that there are differences between business and government perceptions of statistical series.

A simple example will suffice. I know of no retailer or manufacturer who reports or even computes quarterly sales on a seasonally adjusted annual rate, or who provides financial data comparisons on seasonally adjusted rates against the prior month or quarter. Instead, the unit of comparison in the business community is the percent change against a year ago. For instance, most retailers compare their December or Christmas sales against the prior December or Christmas, not against the prior month.

In contrast, many macro-economic series published by the U.S. Government focus on percent change of seasonally adjusted data from the previous month or quarter; and, in fact, most of these series are designed to optimize, in a statistical sense, these short-term seasonally adjusted changes. Thus the opportunity for a common language between government and business is restricted to some extent by these different perspectives.

I fully endorse the 1992 Initiatives recently proposed by the Council of Economic Advisors for improving the quality of Economic Statistics. In particular, the service sector has been too long neglected, perhaps because of its diverse nature. A more meaningful subcategorization of "services" to distinguish business services, such as the A.C. Nielsen Company, from personal services, such as barber shops, would help bring this sector into clearer focus.

Improving international comparability is also an important goal. I was surprised to learn, in Japan, that Eating and Drinking places are classified as services rather than as retail stores. Other classification issues also need further scrutiny, including the handling of warehouse inventories, which currently are split between retail and wholesale sectors in the U.S. Such a split may obscure, rather than reveal, the sales-inventory ratios that are of interest to marketers.

I wholeheartedly support efforts to coordinate the separate Business Establishment lists used by Cansus and by BLS. This needs to be done carefully under confidentiality provisions such as Title 13, confined to statistical purposes only, and under auspices that are clearly distinguished from regulatory functions.

Two other comments seem warranted. First, as many others who have testified before this committee, we are also concerned about the recent inability on the part of government statistical agencies to recruit and retain adequate professional staff at both beginning and managerial levels. Thirty years ago, a substantial number of the world's foremost survey statisticians and economists were in civil service, often functioning at the policy level. Government service was viewed as an important vocation. The best and brightest university students looked forward to a distinguished and respected career at the Census Bureau, the Bureau of Labor Statistics, or the Bureau of Economic Analysis.

Sadly, this is no longer true. Civil service salaries are no longer comparable with private industry, nor is civil service work viewed by university students as occupying the central importance it once had. The consequent drain of talent must be stopped, through competitive compensation programs, through stepped-up recruiting, and through professional training and development in Washington. The perceived importance and value of Government statistical and econometric work must be restored, or the entire government statistical programs will suffer in the years to come.

My final comment is on the need to separate the information function of OIRA from the regulatory function, in the minds of respondents. While I understand the efficiencies that are made possible through the office of OIRA, I am also concerned about the public perception of a close linkage between the two disparate functions of information and regulation. We have seen a significant decrease in cooperation in recent years in many public and private sector surveys, as our society becomes more suspicious and less willing to provide information lest it be used against the respondent. Thus the need to clearly separate statistical needs from regulatory functions becomes especially critical.

However, I do not believe this can best be accomplished by making all government surveys voluntary, nor by separating voluntary surveys from mandatory surveys in an administrative sense. Many of the key sources of information that our society needs -- the population census, the economic census, and the current national accounts series -- do require mandatory reporting. Unfortunately, many business corporations are encouraged by their attorneys, as a matter of corporate policy, not to cooperate in any voluntary government surveys; and only mandatory reporting will elicit the required information.

The distinction between voluntary and mandatory reporting, for these key series, is subtle but important. Applied to statistical programs, the term "mandatory" proclaims: "Congress

views the information requested as serving important social and governmental needs, and believes everyone should cooperate."

In contrast, the term "voluntary" may be interpreted by the respondent as announcing that Congress considers the information to be of minor consequence, and doesn't care whether people cooperate or not.

Many important surveys that are collected on a voluntary basis are also benchmarked to, and thus linked inextricably to, mandatory programs. For example, the monthly Retail Trade Survey is voluntary, but it is benchmarked to both the Quinquennial Census and the Annual Retail Trade Survey, which are mandatory. It would be unwise, I believe, to separate the monthly Retail Trade Survey from its mandatory benchmark bases. Instead, we urge that a distinction between mandatory survey programs on the one hand, and mandatory regulatory programs on the other, be clearly spelled out in the public consciousness, so that the regulatory reporting burden does not get confused in respondents' minds with the information reporting requirement. Our experience has demonstrated that survey auspices make a significant difference in the willingness of respondents to cooperate, and I am sure that is true in the public sector as well as the private sector.

I will be glad to answer any questions that the committee might have.

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Senator SARBANES. That is a very helpful statement. We appreciate those observations very much. I want to thank both of you for the time and effort that has gone into your appearance here. I have only a few questions. I know the hour is growing late. One is triggered by your apocryphal story, Mr. Hawkes, about the corporate president who said the Government did not need to collect Gross National Product data because it could be found in the *Wall Street Journal*. My question to both of you is ... well, let me put it this way. We have had previous testimony, and I have my own perception that, while the importance of this data is fully appreciated by men, such as yourselves, operating where you operate in the business structure, often this same perception doesn't extend up to the levels of the top management of the company. They perceive it adversarial, perhaps, in part, because of a fear of a regulatory aspect to it. First of all, is that an accurate perception? And, if it is, what can we do to change it, or help to change it?

Mr. FLEMING. It may be an accurate perception for some members of the business community and the private sector. I would say, however, that the view is much more mixed. On the whole the use of market data is extremely important to the private sector.

A couple of very important programs, mentioned here this morning, have been ongoing for many years but have been sadly neglected. Perhaps, among the most important programs that a manufacturer, service provider, or marketer can have is understanding where opportunities lie in the marketplace. First are the input/output data that have been, as indicated earlier, very much neglected. Those data are important because they allow the marketer of a product to understand who his or her potential customers are, where they are located, what industries they are in, what occupations they have, and how to target them. That information provides for a more efficient marketing process and for increased growth opportunities.

Related to the input/output data are the capital flows data; that is, of all of the capital equipment that is being produced, who are the buyers? Information processing equipment has now reached 50 percent of total producers' durable equipment. It was 40 percent a year ago and has increased significantly over the course of this year. But the most recent data that we have for the buyers of that equipment were published in 1977. Late this year or early next year, we will find out who the buyers of capital equipment were in 1982, which not only was a recession year but came prior to a huge wave of technological advances and product innovation that has occurred in that industry over the past decade. In some sense, the data has not been released and it is already outdated, putting business in a very difficult situation in terms of understanding who its markets are and how to bring its products to market.

Senator SARBANES. Mr. Hawkes, did you have any comment?

Mr. HAWKES. Yes. I think the problem isn't perhaps so much a senior executive problem, although in some sectors it may be that the senior

executives of a company tend to view "Washington" as the Federal Trade Commission or the National Commission on Food Marketing—that is, agencies who in some ways may be viewed as being adversarial, for example, to the retail grocery business. This is sort of a historical burden that we all bear. Again, the regulatory and information functions tend to be viewed as intertwined.

The more serious problem is that, in large corporations, the respondent isn't the chief economist, or the chief statistician, and it isn't the chief executive officer. It's some guy called "Charlie" in the accounting department whom the corporate counsel tells, "Listen, don't cooperate in anything you don't have to." Often, he's the one who gets the Census questionnaire and is making the decision as to whether or not to cooperate for that company.

That's a tough issue. And, to me, the only way that this issue can be addressed is over the long term, by eliciting the support of the business community in the federal economic statistics programs, and by establishing a clear dissociation of information from regulation, so that future generations of accountants and lawyers aren't going to wind up being nonrespondents despite the conviction of the corporate economist that cooperation is a good thing.

Senator **SARBANES**. It is interesting the way you two come together because if you get this statistician and chief, whatever we want to call him, out from any regulatory umbrella, direct to the OMB Director, and if it is a person of some stature, that conceivably person could begin a dialogue with the business community that might lead to some of these changes that you are talking about.

Mr. **HAWKES**. Yes. In fact, in one of the early efforts along these lines, one of the first I'm aware of is back in 1954, the Secretary of Commerce commissioned a group of businessmen to do an intensive review of Census programs. This involved some fairly high-level people, who produced a very useful report that helped to bring about some of the improvements in economic statistics programs that we now take for granted. I think that kind of high-level attention is a useful thing. And I think to make senior business people feel that they're part of the solution is a useful step.

Senator **SARBANES**. Good. Now, Mr. Fleming, I just have one last question. Unfortunately, I'm going to have to go to another hearing. Chairman Boskin said in his statement that, "the Administration has heard the concerns." He then mentioned this Committee and other groups, including the National Association of Business Economists. From the perception of the Association, have you had an open entre to Chairman Boskin and the Working Group? And do you feel you have had an opportunity to communicate your concerns, communicate your recommendations, and that you are getting a full and adequate hearing there?

Mr. FLEMING. Yes, Mr. Chairman. I believe that we do have open access to Chairman Boskin and his staff. We have worked with them closely over the past year in producing our report. There is, I would say, relatively little disagreement among economists from the private sector and those who are in the Working Group and heading up the economic statistics agencies in terms of the priorities and what needs to be done, and what can be done most expeditiously, and what can be done soonest.

The concern I would express now is to carry the message to Congress, to both members and their staffs that, when appropriations are being finalized over the course of the next several months, cuts not be made but that these funding increases be included.

Senator SARBANES. Well, now those decisions are made, by and large, since the amounts we are talking about are not very great in the overall budget picture, although they are quite significant for the statistical agencies, in a quite small forum. I mean, we are talking literally about bringing home the importance of this to, by and large, a limited number of members of the Congress who are in the decisionmaking position. And, so, I invite the Association and others to see if you can't play some part in that effort. A communication from you to these people about the importance of these initiatives, which is similar to what we are trying to do from outside since I don't actually sit on one of the Appropriating Committees, could be very helpful. I hope you will be willing to do that.

Mr. FLEMING. Yes, very much so, Mr. Chairman. I feel as if we have made a major effort over the past year in producing our report. And now that the hard work is done, we would like to communicate it to those to whom it matters. And I stand ready and able to discuss with whatever members of Congress or their staffs are appropriate. I would like to be able to do that in the months to come.

Senator SARBANES. Very good.

Mr. FLEMING. Could I beg your indulgence for one minute to comment on some points that you raised earlier and also on those that Senator Gore made. I have the flexibility of speaking without being an appointed official. And that may make a difference.

The economic statistics system that exists today is largely based upon developments that occurred in the 1920s and 1930s, led by very eminent members of the profession, such as Simon Kusnitz. It is a system that is based on the notion of counting goods. Chairman Boskin uses the example of tons of steel and bushels of wheat. Our economic statistics system is also a system that is designed to address short-term economic policymaking concerns. And it does that reasonably well. Many of the changes that are included within the Boskin Initiative are intended to enhance that role of economic statistics in policymaking. It occurs to me that, especially over the past couple of decades, there have been such significant changes in our economy; that the kind of concerns that you

raise with regard to health, education, and crime; and that the kinds of concerns that Senator Gore raises do not go far enough. That is, I would encourage you to go further down that track. We need an additional set of accounts to deal with domestic policymaking as opposed to economic policymaking. We need a measure of economic welfare. Really, a lot of this revolves around advances in technology that have occurred in recent years. And they are both pluses and minuses. On the one hand, we have a greater variety of goods that are available at increasing levels of quality. That means that inflation is increasingly difficult to measure and separate it from price increases that result from increases quality and variety.

Supermarkets can carry large numbers of goods and offer consumers maximum choice because of the advanced state of computing technology that allows them to track those goods. That was not possible many years ago. Likewise, technological advances have created other products that industry is using that provide benefits to our economy as well. There are obviously negative aspects of this, and we have discussed the environmental issues earlier.

The dimensions of the consumer life in the 1990s are over concerns like health, education, variety of consumer choice, and the quality of products; all of which impact on us every day, but are very much unrelated to the economic statistical system as it is measured today. So, conceptually, we have a system that is based upon life 50 or 60 years ago and not on life in the United States in the 1980s and 1990s.

Now, it is true that the System of National Accounts, which the U.N. is now developing and implementing, will address some of these concerns. And certainly, to the extent that we have both balance sheets and income statements that reflect our economy and its condition more accurately, that, too, will help address many of those concerns. But I really would urge us all to think very differently about how we measure economic activity and welfare. The kinds of concerns that Senator Gore expressed, it seems to me, are just the first step down that path to understanding how to accurately measure life in our society today.

Senator **SARBANES**. Thank you very much. That is a very forward-looking observation, I think, with which to bring the hearing to a close. We appreciate your contribution.

The Committee stands adjourned.

[Whereupon, at 11:50 a.m., the Committee adjourned, subject to the call of the Chair.]

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