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OLD AGE INCOME ASSURANCE

A COMPENDIUM OF PAPERS ON PROBLEMS AND POLICY ISSUES IN THE PUBLIC AND PRIVATE PENSION SYSTEM

SUBMITTED TO THE

SUBCOMMITTEE ON FISCAL POLICY

OF THE

JOINT ECONOMIC COMMITTEE

CONGRESS OF THE UNITED STATES

Part V: Financial Aspects of Pension Plans

DECEMBER 1967

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LETTER OF TRANSMITTAL

DECEMBER 20, 1967.

To the Members of the Joint Economic Committee:

Transmitted herewith for the use of the members of the Joint Economic Committee and other Members of Congress is part V, "Financial Aspects of Pension Plans," of the compendium of papers entitled "Old Age Income Assurance," prepared for the Subcommittee on Fiscal Policy.

The views expressed in this document do not necessarily represent the views of members of the committee or the committee staff, but are statements of issues and alternatives intended to provide a focus for hearings and debate.

WILLIAM PROXMIRE,
Chairman, Joint Economic Committee.

DECEMBER 19, 1967.

Hon. WILLIAM PROXMIRE,
Chairman, Joint Economic Committee,
Congress of the United States, Washington D.C.

DEAR MR. CHAIRMAN: Transmitted herewith is part V, "Financial Aspects of Pension Plans," of the compendium of papers on problems and policy issues in the public and private pension system, entitled "Old Age Income Assurance."

Part V treats the effects on saving and investment of pension programs, and contains nine papers contributed by invited specialists. The subcommittee is indebted to these authors for their excellent contributions which we believe will add much to a general awareness of the issues in retirement income policy, particularly as these relate to the impact of programs on capital markets. The time and learning devoted to the preparation of these papers should do much to stimulate interest and to assist in policy decisions concerning future programs for old-age income assurance.

Dr. Nelson McClung, consultant to the subcommittee is responsible for the planning and preparation of the compendium, with the editorial assistance of Anne McAfee, and the advice and suggestions of other members of the committee's professional staff.

As the executive director's letter indicates, the compendium should not be viewed as an expression of views or conclusions of the committee staff, nor should it be viewed as an expression of views of the subcommittee or individual members.

MARTHA W. GRIFFITHS,
Chairman, Subcommittee on Fiscal Policy.

DECEMBER 18, 1967.

Hon. MARTHA W. GRIFFITHS,
Chairman, Subcommittee on Fiscal Policy, Joint Economic Committee, U.S. Congress, Washington, D.C.

DEAR MADAM CHAIRMAN: Transmitted herewith is part V, "Financial Aspects of Pension Plans," of the compendium of papers entitled "Old Age Income Assurance." This study was prepared at your request in order to bring together current thinking on the questions of retirement income programs and thereby contribute to policy decisions by focusing attention on the more promising solutions to the income problems of older people.

The compendium, which is being issued in five parts, confirms the fact that programs to aid older people have grown in number, size, and complexity, and that the coordination of these programs and their combined impact on the income of older people have received very little attention. Clearly, public policy issues exist with respect to coordinating these programs, appraising their effects on the economy, and improving their equity.

Part V contains contributions by the authors listed below. The committee is indebted to these contributors who have given generously of their time and expertise to provide the latest available information and competent analytical perspective to this important subject.

Prof. Henry Aaron
Prof. H. Robert Bartell, Jr.
Prof. John O. Blackburn
Prof. David Cass
Prof. Peter O. Dietz
Mr. C. Wadsworth Farnum
Dr. Arthur S. Fefferman
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Prof. M. E. Yaari

The major work in planning and compiling this compendium was undertaken by Dr. Nelson McClung, consultant to the subcommittee, with the advice and suggestions of other members of the staff. He was assisted in the editorial work by Anne McAfee. Nothing herein should be interpreted as representing either the opinions of the staff or the members of the committee on any of the matters discussed.

JOHN R. STARK,
Executive Director, Joint Economic Committee.

OLD AGE INCOME ASSURANCE

Part V: Financial Aspects of Pension Plans

CONTENTS

AUTHORS LISTED ALPHABETICALLY

THE MACROECONOMICS OF PENSION FUNDS

BY JOHN O. BLACKBURN*

The provision of income for the elderly has become an increasingly institutionalized undertaking in modern, urban societies. This development suggests a number of issues, many of which are treated in this Symposium. Like other economic activities, income maintenance devices, if sufficiently large and widespread, have an impact on aggregate saving, investment, output, and growth. It is the purpose of this paper to examine pension plans in the light of their aggregate impact on the economy. Part I discusses some concepts and definitions with respect to pension assets, liabilities, and the structure of claims on national wealth. Part II discusses such variables as length of working life, life expectancy at retirement, and retirement income relative to working income as they relate to saving, investment, income, and wealth. The response of the economy to changes in saving patterns induced by pensions is also considered under various assumptions. It is there shown that pension saving, together with Federal deficits to maintain full employment, produce a public-private wealth structure which is analytically similar to an underfunded public retirement system.

Part III examines the growth of pension funds, 1946–1965 and notes the growing share of personal saving which is thus institutionalized. Part IV discusses some recent projections of pension funds to 1981 and conclude that they are probably too low. If this is the case, then the impact of pension funds on the economy is likely to be even greater than previously indicated.

The paper has few conclusions as such, but it does throw additional light on a number of important questions. Perhaps the major issue has to do with the likely course of full employment saving in relation to private investment demand. There may well develop a situation in which private saving in pension funds must be partly offset by dissaving on the part of the Federal Government if relatively high unemployment is to be avoided. The use of tax policy to encourage a kind of private saving which requires offsetting public deficits would appear to be curious indeed. There would seem to be an urgent need to explore reinsurance and other devices for reducing the degree of private funding, if such an outcome of our present arrangement is indicated. Beyond that, liberal tax inducements toward pension saving might be reevaluated, if there is in prospect a saving-investment relation which is more often contractionary than not.

I. SOME CONCEPTUAL AND DEFINITIONAL CONSIDERATIONS

An economy in which the extended family is the dominant institution provides goods and services to the elderly via intergenerational transfers within the family. Saving and investment may and do take

*Duke University.

place, but they are not necessarily related to the process of providing for the aged. The physical separation of generations, frequently accompanied by a reduction in the number of children per family, seems to be associated with the rise of more formalized financial provisions for retirement, both as to public and private arrangements.[1]

A striking feature of recent history in the United States is the rapid growth and spread of pension arrangements which involve a degree of compulsion—both with respect to public and private institutional arrangements. There are some problems of concept and definition in these arrangements that have to do with public and private wealth, and the structure of claims by which wealth is owned.

The desire to allocate some portion of current real output under one's control to future consumption is a desire to save. In economies using productive capital goods, resources released by saving for future consumption (or for any other purpose) may be accumulated in the form of capital goods. Since saving and investment are acts typically performed by different economic transactors, the act of saving usually results in the accumulation of direct or indirect financial claims on investing sectors. In fact, the development of financial claims which permit the intersectoral flow of saved resources may be regarded as a major factor in the productivity of modern, high-income economies.

Until the advent of the social security program in 1935, financial provision for retirement (if any) in the United States was mostly an individual matter. Some private pension plans had been in existence for years, and some of these had features of compulsion. For the vast majority of Americans, however, saving for retirement took the same forms as for any other purposes. Aside from equities in the few existing pension plans, the major financial instrument tailored especially for retirement was the annuity offered by insurance companies. This instrument has never been of great importance in the American financial structure.

By way of constrast, pension claims by households against public and private institutions now represent a major financial instrument. As a form of financial saving, or as a means of channeling household savings into the hands of investing sectors, pension equities already funded amount to some $175 billion. If unfunded pension claims were included, the sum would be larger by several hundred billion dollars. Indeed, by some ways of reckoning the total pension obligations, they may exceed in the aggregate all other types of financial claims except common stocks.

This observation raises the question as to the appropriate definition of pension assets and liabilities. From the standpoint of the household, a claim to future payments constitutes an asset which might be measured as the discounted present value of future payments already earned. The corresponding liability, from the standpoint of the paying sectors, is the discounted present value of future payments likely to be made on the basis of work already performed by each employee. Viewed in this light, the aggregate "asset" of households and "liability" of pension-paying sectors is enormous—much bigger than reported reserves of the various public and private retirement funds.

[1] For a discussion of these matters, see Juanita M. Kreps, "The Economics of Intergenerational Relationships", in Ethel Shanas and Gordon Streib, *Social Structure and the Family: Generational Relations*. Prentice Hall (Englewood Cliffs, 1965).

For purposes of speculation, let us suppose that the unfunded liability of the OASDHI funds with respect to retirement benefits is $400 billion.[2] Further suppose that the various public and private funds which are run on a more or less actuarially funded basis are funded to the extent of 50 percent of their liabilities. These funds amounted to approximately $150 billion at the end of 1966. This implies a roughly calculated $720 billion[3] as the value of household "assets" with respect to retirement benefits already "earned", and further implies a corresponding liability for the paying sectors. Pension claims would then indeed represent the second largest single financial instrument of the U.S. financial structure.[4] We could further note, without taking the whole matter too seriously, that accrued pension obligations of the Federal Government already exceed the reported Federal debt, the upper limit of which is the subject of annual Congressional shadowboxing.

Some observers would, no doubt, object to showing an additional $150 billion of non-OASDHI pension obligations as anyone's asset or anyone's liability. Indeed, trustee plans are not obligated to make any payments beyond those which would exhaust their assets. How, it may be asked, can they be said to have any further liability? There is, however, a growing disposition among accountants to measure liabilities as the present value of probability-weighted future payments, just as assets are treated as the present value of probability-weighted future receipts.[5] We can hardly make any assumption about business enterprise in the aggregate other than its continued existence. We may further assume, in the aggregate, that pension promises will be largely met. We may therefore argue for the broader definition of pension liabilities since, legal obligations or no, the probability is high that pensions will be paid. Indeed, the whole tenor of much present discussion about non-OASDHI pensions is to require stricter vesting and funding practices. These measures, if enacted, would move the legal liabilities closer to the likely-future-payment concept of pension liabilities.[6]

We should also consider the relative values placed on future pension payments by households and paying sectors. It is likely that households place a smaller present value on future pension payments than do the sectors which will pay them. This is equivalent to saying that households discount them at a higher rate, or hold lower subjectives estimates of the probability that they will be paid. The evidence in this

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[2] Unpublished memorandum of the Chief Actuary, Social Security Administration, Mar. 9, 1967. The estimate is $350 billion, or $417 billion if the amendments before the Congress are enacted. Of the latter figure, $10 billion would relate to the Railroad Retirement Funds, which are omitted from this study.

[3] Composed as follows:

	Billions
OASI funds	$20
Unfunded liability of same	400
Private, State, and local government, and Federal Civil Service plans	150
Unfunded liability of same	150
Total	720

[4] The financial instrument now quantitively the most important is common stock: the estimated aggregate value at December 31, 1965 was $778 billion. *Federal Reserve Bulletin*, vol. 52, p. 1536. (October, 1966).

[5] This view is explicit in the initial opinion paragraph on basic accounting methods in the American Institute of Certified Public Accountants' *Exposure Draft of Tentative Opinion: Accounting for the Cost of Pension Plans*. See *The Journal of Accountancy*, September, 1966, p. 63.

[6] Recommendations to the effect are found, *inter alia*, in a report by the President's Committee on Corporate Pension Funds and Other Private Retirement and Welfare Programs, *Public Policy and Private Pension Programs*, Washington, 1965, especially pp. x–xvi.

connection is somewhat spotty, but is consistent with the above hypothesis. Workers under vested plans with the right to withdraw accumulated sums upon termination almost always do so when they change jobs. Further, claims to future pension payments are apparently not very substitutable for other forms of saving. The first observation suggests that households have a higher rate of time preference than the rate which relates present contributions to future benefits, or that they attach some probability less than one to actually collecting the benefits, or both. The second observation suggests that households with pension coverage who save as much as or more than noncovered households (comparable in other respects) do not really value pension claims as highly as other financial claims; otherwise, they would be more highly substitutable.[7]

Before leaving these somewhat fanciful concepts of pension claims, we should note that measuring them on the basis discussed would profoundly alter the apparent financial structure of the U.S. economy. Private household wealth would be greatly increased, while government sector and business sector liabilities would also increase considerably. The Federal Government would show a large negative net worth, and business firms would show net assets considerably smaller than that implied by their books, or by the market value of their outstanding shares.

Since there are some conceptual and computational difficulties in measuring pension claims on a present value basis, most compilers of aggregate data simply measure funded claims and ignore the rest.[8] This practice will be followed in the remainder of this paper; when we speak of pension funds and household pension equities we shall be referring only to claims already funded. This concept alone yields large and rapidly growing aggregates, as the following pages will make clear.

II. Some Macroeconomic Analyses

The role of retirement parameters in determining important macroeconomic variables such as saving, investment, income, consumption, and the capital-output ratio, can be illustrated by means of some simple models of the economy. No economies are actually that simple, of course, but the influences described do carry over into real economies.

First, consider a static model in a position of longrun equilibrium. Population, output, technology, and the stock of capital are constant through time. Further assume that people save only for retirement, through pension funds, with given and constant ages of beginning and ending work, and a constant life expectancy at retirement. Then all capital, indeed all nonhuman wealth, is owned by the pension funds. It can be shown, in such an economy, that output, the capital-output ratio, and the share in consumption by retired persons depend on the length of working life and life expectancy at retirement as well as on

[7] The authoritative study in this regard is that of Phillip Cagan, *The Effect of Pension Plans on Aggregate Saving*, Occasional Paper 95, National Bureau of Economic Research, New York, 1965. Cagan's findings that pension savers apparently do not save less in other forms than comparable nonpension households is consistent with an alternative hypothesis that pension saving has a kind of "demonstration effect" which encourages saving of all kinds. His findings, however, are not inconsistent with the hypothesis stated in the text.

[8] Flow-of-funds data prepared by the Federal Reserve Board, for example, treat only funded pension claims as household assets. The national income and product accounts concept is even narrower; only contributions to and investment income of private pension funds are treated, in effect, as personal saving.

the usual variables of capital and labor productivity and the rate of interest.[9] Further, the static stock supply function of capital, in which the equilibrium captial-output ratio is related to the rate of interest, is negatively sloped; the higher the rate of interest (productivity of capital, for any given capital-output ratio) the lower is the capital-output ratio. This result is easily explained: the higher the rate of interest, the smaller is the fund which must be accumulated for each worker (relative to his wage) to pay his retirement benefits.

Essentially the same results carry over into a model in which population, the labor force, and factor productivity (via the level of technology) are all growing smoothly at constant rates. The capital-output ratio is rising through time, as is output and income per capita. Under certain assumptions about the aggregate production function, there exists a longrun equilibrium growth path for which the rate of interest (capital marginal productivity) is constant, as technological advance offsets the tendency toward diminishing returns to capital (implied by the rising capital-labor ratio).

If, in such a moving-equilibrium model, all saving is for retirement, and retirement income bears a constant relation to working income, it can again be shown that the equilibrium supply curve of capital (in a stock sense) is negatively related to the rate of interest. As in the static model, the longer is life expectancy at retirement, the larger will be the capital-output ratio and the share of national income consumed by retired persons.[10] With a given life expectancy, as the retirement age falls and the retirement period lengthens, the equilibrium capital-output ratio rises, the rate of interest falls, and consumption per capita falls.[11]

Let us turn our attention now from equilibrium-type models to our own economy. Under neoclassical assumptions of smooth full-employment adjustments in interest rate, prices, and capital-output ratios, an increase in the share of income and output saved would pose no problems. If pension plans increase the share of national income which is saved, then we should expect the economy to respond with lower interest rates, a higher capital-output ratio, and more output per capita during each time period. It does not follow that consumption per

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[9] For a more detailed discussion of such models, see my "Pensions, the National Income, and the National Wealth," in Juanita Kreps, ed., *Employment Income and Retirement Problems of the Aged,* Duke University Press, Durham, 1963.

[10] For a demonstration of the growing population but constant productivity case, see Blackburn, op. cit. The more complicated cases in which both population and output per worker are rising but along a constant-interest-rate long-run equilibrium growth path are simply variants of neoclassical equilibrium growth models of the type treated by Solow, Brems, Phelps, and others. See, for example, R. M. Solow, "A Contribution to the Theory of Economic Growth", *Quarterly Journal of Economics,* November, 1956, vol. 70, pp. 537–562; Hans Brems, "Growth, Distribution, Productivities, and Thrift in Cobb-Douglas Models," *Southern Economic Journal,* January 1963, vol. 29, pp. 181–88. (See also my comment and his reply, *Southern Economic Journal,* October 1963, vol. 30, pp. 175–179); and Edmund S. Phelps, "The Golden Rule of Accumulation: A Fable for Growthmen," *American Economic Review,* September 1961, vol. 51, pp. 38–43. The proof that changes in the retirement age, life expectancy, or the fraction of working income desired as retirement income have the same effects on the interest rate and the capital-output ratio as in the static case is too lengthy to reproduce here. It is available from the author.

[11] Ando and Modigliani develop a model of aggregate saving based primarily on lifetime consumption (retirement saving) considerations. Their basic assumption is that all saving is for retirement, though they indicate ways in which this assumption can be relaxed without destroying the results. It is interesting that estimates of the stock of wealth implied by a wide range of empirically plausible values for working life, life expectancy, retirement income as a fraction of working income, the rate of interest, and age distributions of the population give values of the capital-output ratio far lower than the existing U.S. ratio. It would appear that nonretirement saving must be considered in the Ando-Modigliani model. See Albert Ando and Franco Modigliani, "The 'Life Cycle' Hypothesis of Saving; Aggregate Implications and Tests," *American Economic Review,* March 1963, vol. 53, pp. 55–84.

capita would be raised; the increment to output (assuming positive returns to capital) might fall short of the increment to saving (assuming diminishing returns to capital, and a sufficiently high initial capital-output ratio).[12]

Under post-Keynesian assumptions, additional savings induced by pension plans again need not threaten either price stability or full employment. Under conditions of chronic excess demand, additional private savings via pension plans would merely reduce the size of Federal surpluses needed to restrain demand, or might permit greater monetary ease with generally lower interest rates. Under conditions of chronically inadequate private demand, the existence of additional saving through pensions implies larger Federal deficits, and perhaps lower private saving rates.

The latter possibility may be taken as a case at least worthy of consideration. The years following 1957 were either years of unemployed resources, or Federal budget deficits, or both. The only post-1957 years in which private investment absorbed private saving forthcoming at more or less full employment were 1965 and 1966. The Federal budget, on a national income accounts basis, had a slight surplus in those years. Yet that volume of private investment, abetted until late 1965 by monetary ease and longer still by the investment credit and liberalized depreciation rules, may well turn out to be unsustainable. Unsustainable, that is, in the sense that productive capacity grew in 1965 and 1966 more rapidly than could full-employment output, constrained by the growth rate in the labor force and in labor productivity. Data now available do not permit any conclusive statements; the question would appear to be sufficiently open to warrant an examination of the "excessive saving" case.

If pension saving does raise the implied full-employment growth rate in output beyond that consistent with the growth in the labor force and labor productivity, and if the capital-output ratio, interest rate, profit rate, and technological developments do not easily reconcile these divergent rates, then a balanced-budget economy would tend toward stagnation and chronic unemployment.[13] The use of monetary and especially fiscal policy to offset pension saving would result in a growing public debt.

Thus private pension saving would take place at the expense of public dissaving. Apparent private wealth would increase, if we make the common assumption that households do not take into account any share of their future tax liabilities with respect to the public debt.

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[12] This is a major point of Phelps' paper (op. cit.). He finds that consumption is maximized where the growth rate equals the interest rate. The point is pursued in my "The Social Insurance Paradox: A Comment," *Canadian Journal of Economics and Political Science*, forthcoming. It is there shown that in the context of neoclassical growth models, pension claims are overfunded (reduce aggregate consumption) if the interest rate lies below the rate of growth in output.

[13] My version of the chronic oversaving case is, I hope, a bit more sophisticated than versions discredited by events in the early postwar years. I am thinking explicitly in terms of long-run growth considerations. Record private investment outlays in 1965 (15.6 percent of GNP) and 1966 (15.8 percent of GNP) are estimated to have raised productive capacity in manufacturing by 5 and 7 percent, respectively. (Council of Economic Advisers, *Annual Report*, 1967, p. 221 and p. 253. Capacity in other sectors, of course, does not necessarily follow manufacturing capacity.) No one has seriously proposed that total output in the United States might grow for long periods at such rates. Given estimates of the labor force in future years, such growth implies annual increases in labor productivity rarely attained and never sustained in the United States. My view also implies some pessimism as to smooth (even in the long run) adjustments in the economy toward higher capital-output ratios and lower interest rates. Movement toward the latter, of course, is further constrained at the moment by balance-of-payments considerations.

Private pension claims are then indirectly supported by a public liability—wholly, if the increase in public debt equals the accumulations of private funds; partly, if "excess saving" is only part of pension saving. The important result of analyzing this case is the following: as to saving, investment, income, and private wealth (including the present value of future pension payments) private pension funds plus public deficits are analogous to unfunded public pensions. When OASDHI is underfunded, private wealth (including the expected value of future pension benefits) exceeds national wealth. The Government has a liability equal to the underfunding of OASDHI. Future tax revenues will, in effect, pay the pensions. In the private pension fund, public-debt case, private wealth again exceeds national wealth, but the public liability to be tax financed (at least as to interest) appears not as OASDHI underfunding but as explicit debt.

Though the net effects are similar for some variables, they are quite different with respect to other variables. Since Government securities are not very important in private pension portfolios, and common stocks are, the *ceteris paribus* effect of the pension saving—chronic excess saving-Federal deficit case is to raise stock prices relative to bond prices, to lower stock yields relative to bond yields, and to alter the cost of equity capital relative to debt capital.

If, on the other hand, the correct characterization of the postwar period in the United States is one of chronic undersaving and excess-demand inflation, the effects of pension saving are quite different. Price inflation has been less severe than it otherwise would have been. Federal deficits would have been larger (occasional surpluses smaller) than would have been required to maintain the same degree of demand inflation in the absence of pension saving.

There is yet another aspect of pension saving which needs our consideration; namely, the influence of tax concessions on aggregate saving. Under present arrangements, some 40 percent of personal saving, and subsequent investment earnings thereon, escape current taxation. Various assumptions as to deferment periods, discount rates, tax rates during retirement, and the like, produce widely varying estimates of the effective tax benefit. Nevertheless, the implied rate of taxation on pension saving is materially lower than on income in general. We are thus taxing all personal saving on the average, and pension saving in particular, at a lower rate than we tax consumption. In the oversaving case discussed above, we are subsidizing saving through tax policy in such a way as to require even larger offsetting public deficits than would be required without the subsidy.

III. Pension Funds, 1946–65

The explosive postwar growth of pension funds in the United States is a widely documented phenomenon, so that it need not be discussed in detail here. We shall briefly trace out the course of accumulated pension funds since 1946, and compare annual increments (saving) to the total of household saving in the same period. Figure 1 traces, on logarithmic scale, the growth of pension funds (other than OASDHI and the Railroad Retirement Funds),[14] from approximately $11 bil-

[14] Corporate pension funds, insured funds, State and local government funds, and Federal Civil Service Retirement Fund. Railroad Retirement Funds are omitted since they are relatively small and hardly growing.

lion in 1946 to $135 billion (book value) at the end of 1965. The gradually decreasing slope of the total funds graph in Figure 1 indicates a high but declining growth rate. From around 16 percent in the early years, the annual growth rate has fallen to about 10.5 percent in the last few years.

That the growth rate will fall still further (but not necessarily indefinitely) is suggested by the growth of annual increments to pension funds, also shown in Figure 1. They fluctuate somewhat, but have grown since 1952 at an average rate of about 8.7 percent, with no apparent declining trend. By way of illustration (but *not* by way of prophecy) if annual increments continued to grow at 8.7 percent, the growth rate in total funds would fall asymptotically toward 8.7 percent also. These matters are discussed in more detail in Section IV below.

The relationship of pension saving to total household saving is shown in Table 1, as is the Personal Disposable Income-Personal Saving relationship. Both of these latter aggregates are adjusted slightly from the concepts used by the National Income Division, Office of Business Economics. Employer and employee contributions, and investment earnings of certain Government funds, are included here in both personal disposal income and personal saving, whereas they are excluded in official U.S. data. The adjustment is made here to treat State and local government funds, and the Federal Civil Service Retirement Fund, in a manner consistent with private funds. My figures are slightly distorted by the inclusion of realized capital gains in pension fund increments. The amounts, however, are quite small.

TABLE 1.—PERSONABLE DISPOSABLE INCOME, PERSONAL SAVING, AND PENSION SAVING, 1946-65

[In billions of current dollars]

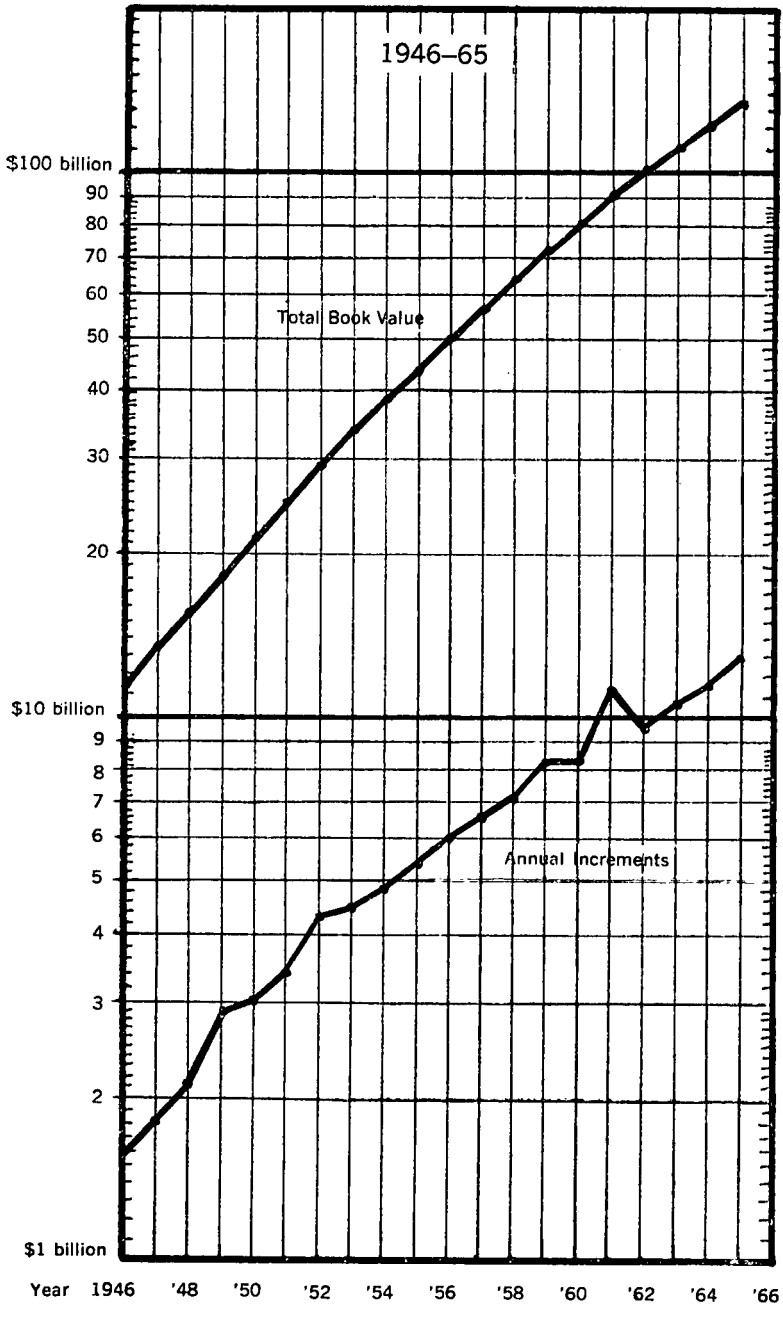
Year	Personal disposable income	Personal saving		Pension saving	
		Amount	Percent of personal disposable income	Amount	Percent of personal saving
1946	160.7	15.9	9.9	1.6	10.1
1947	170.6	8.1	4.7	1.8	22.2
1948	190.0	14.3	7.5	2.1	14.7
1949	189.6	10.4	5.5	2.9	27.9
1950	208.2	14.4	6.9	3.0	20.8
1951	227.8	18.5	8.1	3.4	18.4
1952	239.9	19.8	8.3	4.3	21.7
1953	254.1	19.8	7.8	4.5	22.7
1954	258.8	17.8	6.9	4.8	27.0
1955	277.1	17.6	6.4	5.4	30.7
1956	295.4	22.8	7.7	6.0	26.3
1957	310.5	22.8	7.3	6.5	28.5
1958	321.5	25.0	7.8	7.3	29.2
1959	340.1	21.9	6.4	8.2	37.4
1960	353.1	20.1	5.7	8.1	40.3
1961	367.9	24.7	6.7	11.4	46.2
1962	389.0	25.3	6.5	9.4	37.2
1963	407.7	24.3	6.0	10.3	42.4
1964	440.1	30.6	7.0	11.6	37.9
1965	469.9	29.7	6.3	12.8	43.1

Source: Author's estimates, prepared from data by Department of Commerce, Securities and Exchange Commission; data adjusted for saving through Government funds.

For private pension funds, contributions and fund earnings appear in national income and, not being subtracted, remain in personal dis-

Figure 1

U.S. Pension Funds, Book Value, and Annual Increments



posable income. They remain as an element of personal saving, since that is defined as personal disposable income less personal outlays (mostly for consumption). The two kinds of government funds in question, namely, funds of State and local governments, and the Federal Civil Service Retirement Fund, are treated differently in our national accounts. Contributions to them are deducted as social insurance contributions in moving from national income to personal disposable income. Their interest earnings have already been excluded from national income and product in the calculation of net government interest paid (all of which is excluded from national income). These funds, like private funds, and unlike the OASDHI fund, are run on a more or less actuarially funded basis; increments are, therefore, treated here as part of personal saving just as increments to private funds are so treated in the national accounts.

Table 1 suggests a rising trend in the share of personal saving taking place through pension plans. This view is borne out by regressing that share on time as a variable; time is significant at the .001 level.[15] This result is not surprising in view of the fact that pension saving is growing more rapidly than output and income, and the roughly constant share of personal disposable income which is saved. The latter variable, personal saving as a percent of personal disposable income, has fluctuated considerably, but shows no significant time trend.[16]

These findings are somewhat puzzling in the light of evidence that pension saving is likely to be added to other saving, thus increasing the share of income saved. The authoritative study in this matter is that of Phillip Cagan.[17] His findings from a sample of households suggests that the saving ratio should rise, *ceteris paribus*, as pension saving grows in volume and spreads throughout the economy. He, of course, discusses the apparent inconsistency in household sample and aggregate time series data, and concludes that other forces making for smaller saving ratios must have offset the influence of pensions during the postwar period.

In any event, since the share of disposable income saved by households has not systematically risen, and since pension saving has grown more rapidly than output or income, the share of pension saving in personal saving has assumed major significance, exceeding 40 percent in 3 of the last 5 years.

If pension saving performs in the manner which is projected in section IV below, it will continue to rise as a share of personal saving, unless personal saving begins to rise as a share of disposable income. This latter possibility should not be ruled out; whatever forces may have offset the tendency of pension saving to increase total saving in the recent past may not continue to operate. We should be prepared to face the policy implications of a small upward shift in the share of disposable personal income saved.

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[15] For the period 1946–65, regressing the share of pension saving in total personal saving on time yields, $x=13.06+1.54t$ where x is the share of pension saving in personal saving. The standard error of the t coefficient is .167.

[16] For the period 1946–65, regressing the share of personal disposable income saved (y) on time (t) yields

$$y=7.55-.055t$$

The standard error of the t coefficient is .044, and is not significant at any reasonable level.

[17] Cagan, *op. cit.*

IV. Projections of Pension Funds

The explosive growth of pension funds, particularly that of corporate noninsured funds, has long since attracted much attention, and has given rise to various projections of growth to 1975 or 1980. Perhaps the most widely quoted are those of Daniel Holland, published by the National Bureau of Economic Research.[18] These estimates suggest a rise of private pension funds from about $52 billion in 1960 to around $200 billion in 1981, or from $72 billion in 1960 to $325 billion in 1981, if State and local government funds, treated separately by Holland, are added in.[19]

In the light of experience since the estimates were prepared, and on theoretical grounds as well, these estimates may well be too low, perhaps considerably too low.[20] In my view, which is not nearly so carefully supported as is Holland's, it appears that $450–$470 billion is a more likely estimate; the derivation of this estimate is given below.

Holland's group of estimates begins with four projected series of covered employment, and further projections of numbers of retired beneficiaries. Contributions per covered employee, and mean benefit per retired beneficiary, are also estimated. These, with assumed fund earnings, are used to build up a year-by-year set of estimates for inflows, outflows, and fund balances from 1962 to 1981. Numerous combinations of assumptions are used, but the sets which Holland regards as most likely produce the results cited above.

Most of the sets produce a pattern of rising fund balances, though with absolute amounts of annual increments declining in the later years. This implies, of course, growth at declining rates; in fact, some of the sets produce fund decumulation. The most likely results are heavily influenced by the use of a constant annual contribution per employee throughout the 20-year period, while benefits per retired beneficiary are permitted to rise. The assumption of a constant contribution per worker is based on the 1950–61 experience, supported by an analysis of likely developments in coverage, fund earnings, and benefit levels.[21]

Holland also prepares several alternative estimates, in one of which contributions and benefits rise at 4 percent per year (the average rise in money wages, 1950–61). This, of course, leads to higher projections (about 15–20 percent higher in 1981).[22] This is the highest of all his estimates, but appears still to be biased downward in that fund earnings are estimated to rise only 4 percent per year whereas fund totals in the earlier years are rising much more than 4 percent. One would suppose that earnings would be related to fund totals.

All of Holland's estimates implicitly assume a decline in the aggregate funding percentage; that is, the extent to which accumulated liabilities are covered by segregated pension fund assets.[23] This may

[18] Daniel M. Holland, *Private Pension Funds: Projected Growth*, Occasional Paper 97, National Bureau of Economic Research (New York, 1966). Holland includes State and local government funds in his study.

[19] *Ibid.*, p. 143.

[20] As a result of time elapsed between the preparation of the estimates and publication, Holland was able to compare actual with predicted results for 1962–65. (*Ibid.*, p. 87.) After adjusting for an upward revision of $2.5 billion in 1961 (Holland's base year), his estimates fall short of realized amounts by an increasing sum. Annual increments for 1964 and 1965 are underestimated considerably.

[21] *Ibid.*, pp. 57–58.

[22] *Ibid.*, p. 118.

[23] Holland has taken the position that he is implicitly assuming that past funding practices will continue, *Ibid.*, p. 146. I believe that he has, perhaps unawares, implicitly assumed a declining funding percentage. My argument follows in the text.

indeed be the most realistic assumption; individual firms and plans may shrink or terminate, but the entire business sector, and pension funds in the aggregate, are likely to grow. Thus a lower funding percentage might be consistent with reasonable employee benefit protection. However, it would seem desirable to make this assumption explicit, and to prepare estimates on the alternative assumptions that the funding percentage will remain constant or even rise. These developments may not occur, but one should consider the possibility that they might, particularly in view of recent recommendations for earlier vesting and better protection of beneficiaries' expectations.[24]

The assertion that a falling funding percentage is implied by all of Holland's estimates may be demonstrated as follows:

(1) With respect to those models in which the mean contributions per covered employee are level for 20 years, but in which the mean benefit paid rises, the funding percentage must eventually fall unless fund earnings rise in an offsetting fashion, or life expectancy at retirement declines, or vesting grows generally less liberal. It is not sufficient that fund earnings rise in absolute amount, but as a percent of fund principal as well. It can be shown that fund earnings have not risen sufficiently, but that observation is irrelevant here; it suffices to point out that Holland's calculations do not assume a rising investment return on pension funds. None of the other required developments have occurred, or are assumed in his model. Therefore, in Holland's constant contribution, rising benefit model, a falling funding percentage is implied.

(2) With respect to his alternative calculation in which contributions, benefits, and fund earnings rise at 4 percent (and which calculation produces the highest estimate of fund levels) the demonstration is a bit lengthier. My proposition holds, nonetheless; a falling funding percentage is implied. Let us approach the matter by considering a fully vested, fully funded pension system. There would then be for each worker a "fund" which would rise from zero, at entry into a pension plan, to a maximum at retirement. This maximum would be a fund sufficiently large to provide benefits (allowing for investment income on the declining balance), through the beneficiary's remaining life expectancy. If each age cohort contained the same number of covered workers (or beneficiaries), and if benefits remained the same, the average fund for covered workers (halfway builtup) would roughly equal the average fund per retired worker (halfway rundown). Shifting the population toward more beneficiaries and fewer workers does not, therefore, lower the required fund as long as the age distribution among the workers and retired remains approximately equal. In a growing population (with constant benefits) the mean fund per worker is smaller, since it is pulled down by the larger number of younger workers, and the mean fund per retired beneficiaries is larger, since there are relatively more newly retired workers who have not run down their funds very far.

In a growing population with rising wage rates and benefits, the average worker's fund is larger, and the average retired person's fund smaller, than in the last example, since younger workers' funds reflect more recent higher wages and benefits. Nevertheless, and this is the crucial point, aggregate funds for *both* covered employees and

[24] Such recommendations are cited in footnote 6.

retired persons are growing at rates which reflect both rising benefits and rising numbers of persons. That is to say, one should not expect aggregate pension funds in a fully funded situation to grow less rapidly simply because more and more persons are retired. Retired persons require accumulated funds as do covered workers.

Holland's highest alternative calculation, as we have said, is based on the assumption that wages, contributions, and benefits per worker are rising steadily at 4 percent. It is further based on estimates of covered workers and beneficiaries in the period 1961–81 which grow at about 3.2 and 8.1 percent per annum, respectively. We should, therefore, expect a fully funded system (reflecting his assumption) to grow roughly at a rate which is the sum of the 4-percent growth rate in benefits and the weighted mean rate of growth in numbers of people, or some rate between 7 and 12 percent. Now the funds with which we are dealing are not fully funded but they would *grow* at the same rate as our fully funded example if the funding percentage remained the same. Holland's highest projection, on the other hand, grows at a rate with starts at 10.7 percent and declines to 4.7 percent in 1981. His estimate, therefore, implies a falling percentage of funding, taking private pension plans in the aggregate, since constant funding would require some minimum growth rate higher than 7.2 percent (4 percent plus 3.2 percent).

My own estimates, as indicated, suggest that private, State and local government, and Federal Civil Service funds will reach a level of $450 to $470 [25] billion by 1981, if the percentage of funding does not fall. This compares with Holland's $312 to $339 billion for private (including State and local government) plans.[26] Only a small part of the difference relates to my inclusion of the Federal Civil Service Retirement Fund; most relates to differences in the estimates.

Holland's careful study may well be on target if funding percentages do decline. The base from which he started was also revised upward after his calculations were complete, but before his work was published. Starting from a corrected 1961 base would have raised most of Holland's 1981 estimates by $7 to $8 billion. My own estimate is presented with some benefit of hindsight, and to broaden the range of alternatives which policymakers face.

V. Implications of the Size of Non-OASDHI Funds

The funds which are the subject of this inquiry now total some $150 billion; in 1980 they will likely reach $350 to $470 billion, depending on developments in coverage, funding practices, and like variables. The implications of this development reach into many areas of the economy, and raise many questions. Most of these are explored elsewhere in this Symposium; only one or two will be pursued here.

The share of the national wealth which is owned through pension fund intermediaries will rise from the present 6 to 7 percent to some 10 percent. The share of all common stocks which is owned by the

[25] My estimate is prepared on the following assumptions: the growth rate in funds will decline evenly from 10.5 percent (the 1965 rate) to 6 percent in 1980. 6 percent is regarded as the minimum rate at which funds will grow, based on Holland's growth rate in covered workers (3.1 percent) and a rather low estimate of the likely annual increase in money wages. It is further assumed that benefits will, in the longrun, move roughly in line with money wages.

[26] *Ibid.*, p. 143.

pension funds will likely rise from the present 5 percent, though too many variables are involved to make any projections worth serious consideration. Perhaps the major issue discussed here is the impact of pension saving on aggregate saving, and the resulting public deficits which might be required to keep the economy in the neighborhood of "full employment," somehow defined.

If one takes the view that our major problem has been that of too little saving, then there is no policy problem at all. If one takes the other view that private planned saving, including pension saving, is likely to exceed planned investment in most years at recent rates of growth, then a policy problem emerges. A problem emerges; that is, unless one takes the neoclassical view that the interest rate, the profit rate, the capital-output ratio, and factor substitutability all smoothly adjust to the higher implicit growth rate. In the "oversaving" case, which I think, on balance, to be the most likely case, Federal policies might take two directions: one is to realize the growth rate implied by a savings share and savings level which tends to outrun "sustainable" investment ("sustainable" in the sense discussed above). This would involve measures to accelerate technological change, along with other measures to raise the rate of increase in labor productivity such as basic education, retraining, elimination of barriers to entry, relocation allowances, and the like. Lower interest rates, along with measures to raise apparent capital productivity (such as the investment credit) could also be part of the program.

To the extent that the "equilibrium" (in a rough sense) growth rate cannot be accommodated to the (possibly rising) full-employment saving ratio, there is implied a second policy measure. This measure is a fiscal policy resulting in a growing Federal debt (monetary ease as a stimulant is really part of the growth-accelerating policy set mentioned above). Thus, as we have suggested, pension funds might be accumulating financial claims while the Federal debt is growing. Relative yields on stock and Government securities would have to adjust in such a way that pensions funds would acquire at least some of the Government securities. The lower interest rates implied by the "oversaving" case, incidentally, will tend to raise the volume of pension funds required to maintain a given funding level.

As a final statement, one cannot reach normative judgments about the future of pension funds and aggregate economic variables without first forming some judgment about future aggregate demand prospects for full employment. This is a hazardous territory indeed; the last 50 years are littered with the shattered reputations of competent economists who went astray at this point. My own view, which surely must have come through clearly in the preceding pages, is that investment is likely in most years to fall somewhat short of full-employment private saving. The growth-accelerating policy set would be my own first choice. To the extent that full-employment private saving is not thereby absorbed, maintaining a roughly defined full employment growth course will require Federal deficits and a rising debt.

An alternative policy measure which seems to merit careful consideration is the development of a reinsurance plan which will assure employe benefits but require a lower level of funding for private plans. This possibility is explored elsewhere in this symposium. It is important to realize that reinsurance has implications beyond benefit pro-

tection per se. To the extent that it bears on funding practices, reinsurance is related to all of the macroeconomic variables which have been examined in this study, and, in particular, represents a policy substitute for Federal deficits.

The macroeconomic analysis of pension plans, then, raises a number of important issues. Policy implications are unavoidably present, particularly with respect to aggregate saving, growth, and full employment.

THE SOCIAL INSURANCE PARADOX*

BY HENRY AARON**

In 1958 Professor Samuelson demonstrated that social insurance could improve the lot of each person in society.[1] Each person could support a portion of the cost of maintaining the retired population in return for which future generations would support him during his retirement. The return on this form of saving would exceed the real rate of interest which was in turn a function of population growth. In this note I present a proof of a related theorem: that social insurance can increase the welfare of each person if the sum of the rates of growth of population and real wages exceeds the rate of interest. I call this theorem, after Samuelson, the social insurance "paradox." This theorem does not conflict with Samuelson's because nothing is assumed here about the level of the interest rate or its determinants, other than it equals both the marginal rate of time preference and the marginal rate of transformation between present and future goods.

I. THE PARADOX STATED

Ideally, private insurers set premiums to equalize the present expected value of benefits and the present expected value of premiums.[2] A reserve is accumulated for each person. As the number of people covered by insurance increases, the total reserves for all people increase. If the age composition of the insured population remains the same, the rate of increase of total reserves is the same as the rate of growth of the insured population. If the same procedure were followed in social insurance, and if the covered population increased, then the total reserves would likewise increase. In a mature system the amount of reserves would increase at the same rate as population grows if the age composition of the population remains constant. If social insurance premiums were set below the level which would equalize the present expected value of benefits and premiums, the rate of increase of the social insurance trust fund could be reduced. In an extreme case, no social insurance reserves at all might be accumulated. It follows, that if the covered population increases and if no reserve is accumulated, the present expected value of premiums is less than the present expected value of benefits for each person, although for the group as a whole viewed in perpetuity, the equality will be maintained.

The logical implication of the above remarks is that, if no reserve is accumulated in the financing of old-age pensions, each person will receive a larger pension than he has paid for. Or, put another way, the

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[1] Paul A. Samuelson, "An Exact Consumption-Loan Model of Interest With or Without the Social Contrivance of Money," *Journal of Political Economy*, LXVI (Demember 1958), 467–482.

[2] I am abstracting here from profits, commissions, and other administrative expenses.

present value of his lifetime income, earnings plus pension, will be higher if no reserves are accumulated than if they are. This fact holds for every person. Consequently, *for the Nation as a whole, the present expected value of the sum of real net lifetime receipts is greater when reserves are not accumulated than when they are, although the national income at each point in time is unaffected.* Has a fallacy crept in?

From an insurance equity standpoint it has. The fact that the same pension is paid under the pay-as-you-go assessment system and the reserve system, although premiums are higher in the latter case than in the former, means simply that a higher interest rate is implicitly being paid on contributions under the "no reserve" system than under the reserve system. If this higher interest rate is used in calculating each person's implicit fund under assessment financing and in discounting social insurance benefits to the present, the equality between expected present values of premiums and benefits is restored.

II. The Paradox Demonstrated

On the macroeconomic level, however, the paradox remains intact. This section will be devoted to a rigorous demonstration of this proposition. Assume that, upon reaching a particular age A, all people enter the labour force and that the number reaching this age year grows at the rate of g percent. Assume that average real wages grow at the rate of h percent and that the interest rate is i percent. Let $t=1+g$, $s=1+h$, and $r=1+i$. Each person works m years then retires. He lives in retirement from $n-m$ years dying at the age of $A+n$. During each year of retirement each person receives a pension equal to the average wage then prevailing among active workers.

After k years (where $k>n$), the total population, $\bar{P}$, will be:

$$(1) \quad \bar{P}=P_0t^k[(t^m+t^{m-1}+\ \ldots\ +t)+(1+t^{-1}+t^{-2}+\ \ldots\ +t^{-n+m+1})],$$

where P_0 is the size of the retiring cohort at time 0. The first parenthetical expression inside the brackets, multiplied by P_0t^k, gives the total working population; the second parenthetical expression, multiplied by P_0t^k, gives the total retired population.

The total wages any worker receives during his working life, w, will be:

$$(2) \quad w=w_0s^k(s^{-m}+s^{-m+1}+\ \ldots\ +s^{-1}),$$

where the worker retires in year k, and w_0 is the wage prevailing in year 0.

During retirement the same worker will receive pensions, p, indicated by:

$$(3) \quad p=w_0s^k(1+s+s^2+\ \ldots\ +s^{n-m-1}).$$

During his working life, each pension recipient had paid taxes to support pensions. Assuming that taxes were just sufficient to cover pension costs; i.e., that no reserve was accumulated, each worker paid a fraction of his wage, f, equal to the ratio of the retired to the active population. This fraction, f, is equal to the ratio of the second parenthetical expression in equation (1) to the first. Assuming that these

taxes had been invested, as they would be in private insurance or in funded social insurance, they would have a present value, PV_T, at the time the worker retires shown by equation (4).

$$(4) \qquad PV_T = fw_0 s^k (s^{-m}r^m + s^{-m-1}r^{m-1} + \ldots + s^{-1}r).$$

Assuming that at retirement the worker discounts future benefits at the interest rate i, the present value of pensions, benefits PV_B, is shown by equation (5).

$$(5) \qquad PV_B = w_0 s^k = (1 + sr^{-1} + s^2r^{-2} + \ldots + s^{n-m-1}r^{-n+m+1}).$$

The paradox presented in section I states that $PV_B > PV_T$ when r is below some value. I shall now show that the critical value of r occurs approximately when $i = g + h$; i.e., where the rate of interest equals the sum of population growth and the increase in real wages. To do so it is necessary to establish the precise conditions under which $PV_B > PV_T$. Writing both out in full, moving the numerator of f to the left of the inequality sign, and canceling where possible, the inequality may be written as follows:

$$(6) \quad \frac{(1 + sr^{-1} - s^2r^{-2} + \ldots + s^{n-m-1}r^{-n+m+1})}{(1 + t^{-1} + t^{-2} + \ldots + t^{-n+m+1})} > \frac{(s^{-m}r^m + s^{-m+1}r^{m-1} + \ldots + s^{-1}r)}{(t^m + t^{m-1} + \ldots + t)}$$

Now, the right and left expressions are equal when $r = st$. In that case the numerator on each side becomes identical, term for term, with the denominator. The derivative of the left(right)-hand expression with respect to r is clearly negative (positive). Consequently for smaller values of r, the inequality holds. For larger values, it does not. When, r, s, and t differ only slightly from unity, the condition that $r = st$ can be approximated by the condition that $i \approx g + h$.

III. Welfare Implications

The results of section II show that if the sum of the rates of growth of per capita wages and of population exceeds the rate of interest, and if the rate of interest equals the marginal rate of time preference and the marginal rate of transformation of present into future goods, then the introduction of some social insurance pensions on a pay-as-you-go basis will improve the welfare position of each person. If saving and. hence, investment and, hence, the rate of growth of income are reduced as the level of social insurance increases, this conclusion does not necessarily follow. If the rate of growth is unaffected, the effective rate of return on premiums paid for such social insurance will exceed the marginal rate of time preference, and, consequently, people in the active labour force would willingly forego some current consumption in order to obtain such returns. Individually they are unable to do so; collectively they can.

If a small trust fund is accumulated, the proceeds from which are invested, the addition to welfare will be smaller than if no fund is accumulated, and in the limiting case of a full reserve, no increase in welfare will occur.

If the rate of interest exceeds the sum of the rate of growth of real wages and the rate of growth of population, then introduction of social

insurance either on a pay-as-you-go or a funded basis will reduce welfare, unless (*a*) market imperfections render the preexisting situation suboptimal, (*b*) the social welfare function calls for income redistribution, or (*c*) there are economies of scale in social insurance; none of these factors will be discussed here.

A REEXAMINATION OF THE PURE CONSUMPTION LOANS MODEL*

BY DAVID CASS and MENAHEM E. YAARI**

I. INTRODUCTION

Professor Samuelson's article (1958) on an exact consumption-loan model of interest led to an interesting controversy. At issue were the determination and properties of interest rates in a dynamic economic system with no capital. One might have thought that these exchanges, between Samuelson (1959) and Lerner (1959) on the one hand, and between Samuelson (1960) and Meckling (1960) on the other, would result, if not in a complete resolution of the disagreements, at least in the emergence of a clear picture of what the issues are and how they might be treated. Unfortunately, such was not the case. The Samuelson-Lerner and the Samuelson-Meckling dialogues leave the reader rather perplexed, as though he had just watched a New Wave film—executed with brilliance, enjoyable while in progress, but not quite clear as to what is happening and never giving one a sense of resolution.

The 1960's have brought an upsurge of interest in capital theory and, more generally, in questions of allocation over time. Now Samuelson's model, even though it has no capital, is of interest to capital theorists because it has many of the features of a model of capital accumulation with decentralized decisionmaking. Since the 1958–60 discussions of this model by Samuelson, Lerner, and Meckling left some questions unanswered, we feel that a restudy of the model is in order. The following is an attempt at such a restudy.

We shall take the liberty of deviating somewhat from Samuelson's original notation.

II. THE MODEL

We shall concentrate throughout most of our discussion on the simpler of Samuelson's two models; namely, the one in which people live for two periods, earning a fixed income in the first and earning nothing in the second. In the first period of his lifetime, a person earns *one* unit of output, where "output" is something usable directly (and exclusively) in consumption, and we do not inquire wherefrom it comes.

The generation which is born at time t will be called generation t, and we shall assume that there are $(1+n)^t$ people in it. Thus, n is the (relative) rate of growth of population, which is assumed constant. Members of generation t are thought of as being alike in all respects,

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so one can speak of a member of generation t without specifying the individual. Let the symbol C_t^1 stand for the first-period consumption of a member of generation t, and let C_t^2 stand for his second-period consumption. A member of generation t is assumed to value any given consumption plan (C_t^1, C_t^2) according to the value, $U(C_t^1, C_t^2)$, taken on by a "regularly shaped" utility function U at (C_t^1, C_t^2). The utility function U is assumed to be the same for all generations.

Continuing in Samuelson's footsteps, we now proceed to assume that output is nondurable and thus cannot be carried over from one period to the next. This assumption reduces the production possibilities in the model (that is, the possibilities of using output in one period in the production of output in another period) to naught. It is clear, furthermore, that the assumptions made so far are so restrictive as to rule out from the outset any possibility of trades, markets, or prices. A member of generation t who wishes to engage in a transaction cannot find anyone willing and able to participate in the transaction on the opposite side.

Given that production and trade have both been dispensed with, there remains only one other economic activity to be considered—distribution. This function is still open in our economy, for output can be taken from the young who earn it and given to the old who do not. Thus, our first task will be the examination of alternative distribution schemes. However, before proceeding with this examination, we must define the notion of "the rate of interest." Writing r_t for the rate of interest in period t, we *define:*

$$r_t=\frac{C_{t-1}^1+C_{t-1}^2-1}{1-C_{t-1}^1}$$

or

$$1+r_t=\frac{C_{t-1}^2}{1-C_{t-1}^1}.$$

Two things should be noted: (*a*) $1+r_t$ is *not* a price; that is, no transactions are ever held using it as a rate of exchange. It is not even an "implicit price," in the sense of a price which emerges as a byproduct of efficient allocation of resources. It is, rather, an ex post rate of exchange which is *inferred* from observation of the consumption pattern of a member of generation $t-1$, and it has reference neither to trade nor to efficiency.[1] (*b*) When $C_{t-1}^1=1$, r_t is clearly not defined. If $C_{t-2}^1=1$ and $C_{t-1}^2=0$, we shall say that r_t can be any real number, and if $C_{t-1}^1=1$ and $C_{t-1}^2>0$, we shall say that $r_t=+\infty$.

III. Distribution of Output

As has already been remarked, the only economic function remaining in the model of the foregoing section is that of *distribution of output.* A pair of sequences,

$$\{C_t^2, t=0, \pm1, \pm2, \ldots\},$$
$$\{C_t^1, t=0, \pm1, \pm2, \ldots\},$$

with nonnegative elements will be referred to as a *distribution scheme.*

[1] Note, however, that if a member of generation $t-1$ were to maximize utility subject to a given r_t, then $1+r_t$ would, as usual, equal the marginal rate of substitution of second-period consumption for first-period consumption.

It specifies how much each member of any given generation shall consume in each period of his lifetime. A distribution scheme will be called *feasible* if it does not use up more output than is available in any period. In other words, the scheme $(\{C_t^1\}, \{C_t^2\})$ is feasible if and only if

$$(1+n)^t C_t^1+(1+n)^{t-1}C_{t-1}^2 \leqq (1+n)^t$$

or

$$C_t^1+\frac{C_{t-1}^2}{1+n} \leqq 1$$

for all t, where the inequality arises from an assumption of free disposal.

Suppose that in period t no disposal takes place. Then,

$$C_t^1+\frac{C_t^{2-1}}{1+n}=1.$$

On the other hand, we have, by the definition of the rate of interest, that

$$C_t^1+\frac{C_t^{2-1}}{1+r_t}=1.$$

Subtracting the latter from the former, we get

$$C_t^1-C_t^1+\frac{r_t-n}{(1+r_t)(1+n)}\,C_{t-1}^2=0.$$

As an immediate consequence one now obtains that

$$\text{if } C_{t-1}^1=C_t^1 \neq 1, \qquad \text{then } r_t=n.$$

If $C_{t-1}^1=C_t^1=1$, then r_t can be any real number, and we might as well agree once again that $r_t=n$.

This equality of r_t and n in case $C_{t-1}^1=C_t^1$ is the manifestation in the present framework of what Samuelson (1958) calls "the biological rate of interest," which he finds "paradoxical," even "astonishing" (pp. 471 and 473, respectively) and which Meckling finds very hard to accept. The main cause for suspicion seems to be the fact that a rate of interest has been determined without any reference to impatience and time preference or, more generally, to the utility function U. Somehow, the fact that r_t is a completely mechanistic construct, having no reference to markets, seems to have become blurred.

IV. Stationary schemes

In order to analyze the relation between the rate of interest and the rate of growth of population somewhat further, let us define a *stationary* distribution scheme by the requirement

$$\left.\begin{matrix} C_t^1=C^1 \\ C_t^2=C^2 \end{matrix}\right\} \text{for all } t,$$

which implies that

$$r_t=r=\frac{C^1+C^2-1}{1-C^1} \text{ for all } t.$$

We are assuming for the moment that $C^1<1$, so r is well defined. Now let us check the feasibility of a stationary distribution scheme. By direct substitution, we find that

$$C^1+\frac{C^2}{1+n}\leqq 1 \text{ if and only if } r\leqq n.$$

Thus, the feasibility of a stationary distribution scheme is *equivalent* to the statement that the rate of interest is no greater than the rate of growth of population. Furthermore, the same algebraic operation which yielded the equivalence of the above inequalities also yields the equivalence of the strict inequality $r<n$ and the strict inequality $C^1+C^2/(1+n)<1$. With a stationary distribution scheme, a rate of interest which falls short of the rate of growth of population means that some output is being discarded in every period. In other words, the inequality $r<n$ means that the distribution scheme under consideration is *inefficient* (unless consumers are satiated). This result has a familiar ring to it. In models where investment and capital accumulation are possible, we often find that, among all feasible stationary paths, the path which maximizes per capita consumption is the so-called golden-rule path, which is characterized, among other things, by the equality of the rate of interest and the rate of growth of population. Indeed, we know that a stationary path along which the (constant) rate of interest is lower than the rate of growth of population is in fact inefficient in the sense that everybody's consumption can be increased (see, for example, Phelps, 1965).

Let us recapitulate: Every stationary distribution scheme is characterized by a pair of nonnegative real numbers, C^1 and C^2. The set of all feasible schemes is represented by the shaded area in Figure 1, and it corresponds precisely to the set of all schemes with a rate of interest which is no greater than the rate of growth of population. Among the latter, only the schemes that are represented by points on the northeastern boundary line of the shaded area are *efficient*. These efficient schemes are precisely those for which the rate of interest is, in fact, *equal* to the rate of growth of population.

Note that Figure 1 actually contains part of Samuelson's (1959, p. 519) Figure 1 in his reply to Lerner. In that figure, Samuelson marks

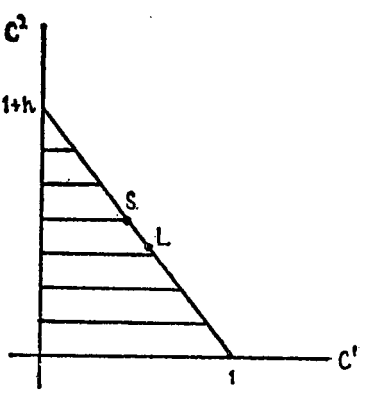

FIG. 1

two specific schemes, represented by the points S and L, which he labels the "Samuelson plan" and the "Lerner plan," respectively. Now both S and L are in fact on the efficient frontier of the shaded set and, therefore, both represent distribution schemes for which the rate of interest is equal to n. The discussions by both Samuelson and Lerner, in which the point L is referred to as corresponding to a *zero* rate of interest, therefore, seem to be in error.[2] The only point on the efficient frontier which could possibly be taken to represent a distribution scheme with zero interest is the point $(1, 0)$, where the rate of interest can be taken to be any real number, including zero (and also including n).

Let us turn now to the question of choosing between alternative distribution schemes. If we take all the feasible distribution schemes and ask a member of generation t which of these he prefers, he will no doubt say that the schemes which satisfy the requirement

$$C_t^1=1,\ C_t^2=1+n,$$

are highest on his preference scale. These are the schemes which give generation t all the output in period t, as well as all the output in period $t+1$ (under the assumption that *within* each generation all share alike). He will be indifferent as to which of the schemes satisfying this requirement is picked. It is obvious, therefore, that no single distribution scheme will be preferred to all other feasible schemes by all individuals. In a situation of this sort, the economist usually resorts to one of two things: Either he defines an overall social welfare function and picks the feasible distribution scheme which maximizes it, or he restricts the choice of a scheme to a subclass of the original class of all feasible schemes, a subclass such that individual maximization over it will result in compatible choices. The subclass of all stationary distribution schemes clearly has this property, since stationary means that everybody has the same lifetime consumption profile. Thus, if we agree to restrict the search for a distribution scheme to the class of all stationary schemes[3] (and this agreement is extraneous to the analysis, just as the choice of a social welfare function would be), we can find one distribution which maximizes everybody's utility. We write

$$\max U(C^1, C^2)$$

subject to the constraint that the stationary scheme be feasible, that is, subject to

$$C^1+\frac{C^2}{1+n}\leqq 1.$$

This is indeed Samuelson's maximization problem (leading to the point S in his diagram as the solution), but stated in terms of choice among distribution schemes rather than in terms of the opportunities open to a "representative man." It should be stressed again that all the efficient points in the set over which the maximization takes place

[2] Samuelson and Lerner both refer to the case where $n=1$ and L is the point $(\frac{2}{3}, \frac{2}{3})$. Clearly, at that point every person foregoes $\frac{1}{3}$ units of output in the first period and receives $\frac{2}{3}$ in the second period, which corresponds to a rate of interest of 100 percent.

[3] It seems that Lerner's concern for the equality of income distribution ought to lead him to stationarity (everybody getting the same consumption profile) and not to equality of consumption for all *within* each time period (that is, $C^1=C^2$), which he seems to advocate in the above-cited references.

are points which correspond to a rate of interest equal to n (except the point $(1, 0)$, where the rate of interest is indeterminate).

Before leaving this part of the discussion, let us consider the problem of decentralization. It is clear that the distribution schemes discussed above (whether stationary or not) are not, in general, attainable by having each individual act on his own in a decentralized fashion. Indeed, the only distribution schemes which are attainable with each individual acting on his own through the (inactive) market are distribution schemes for which

$$\left.\begin{aligned} C_t^1 &\leqq 1 \\ C_t^2 &= 0 \end{aligned}\right\} \text{for all } t.$$

Among these the only efficient scheme is given by $C_t^1=1$ and $C_t^2=0$ for all t, which also happens to be a stationary scheme. However, this is obviously not (in general) the scheme that individuals would pick, among all stationary schemes, if they had the choice. Thus, as Samuelson points out, we have here an example in which decentralized (competitive) behavior fails to lead to an optimum. This conclusion can be sharpened considerably if one drops the assumption that output is nondurable (see sec. VI below).

V. CONSTANT RATE OF INTEREST PATHS

In the foregoing section we have seen that the rate of interest is constant along every stationary path. We now ask whether every efficient path along which the rate of interest is constant is, in fact, stationary.

Constancy of the rate of interest means that there exists a real number r such that

$$C_t^1+\frac{C_t^2}{1+r}=1 \text{ for all } t.$$

Now, feasibility and efficiency of the distribution scheme mean that

$$C_t^1+\frac{C_{t-1}^2}{1+n}=1 \text{ for all } t.$$

Subtracting the latter from the former and rearranging leads to

$$\frac{C_t^2}{C_{t-1}^2}=\frac{1+r}{1+n}.$$

Since C_t^2 is bounded by

$$C_t^2 \leqq 1+n \text{ for all } t,$$

we find that the only rate of interest which can be constant for all $t=0,\pm 1,\pm 2, \ldots$, is the rate $r=n$, which, indeed, corresponds to a stationary scheme.

However, if we only require the rate of interest to be constant from some point on, say $t=0,1,2, \ldots$, then we find that $r \leqq n$ is possible, while $r>n$ is not.[4] If $r<n$ then as $t \to \infty$, C_t^2 tends to 0, and, therefore,

[4] Similarly, if the rate of interest is required to be constant *up* to some point, then $r \geqq n$ is possible, but $r<n$ is not.

C_t^1 tends to 1. In fact, by a straightforward calculation one can show that if there exists an $\epsilon > 0$ such that $r_t \leqq n - \epsilon$ for $t = 0,1,2, \ldots$, then

$$\lim_{t \to \infty} C^2 = 0.$$

As a particular instance, this discussion applies to paths along which the rate of interest is always *zero*, which is what Lerner seems to advocate.

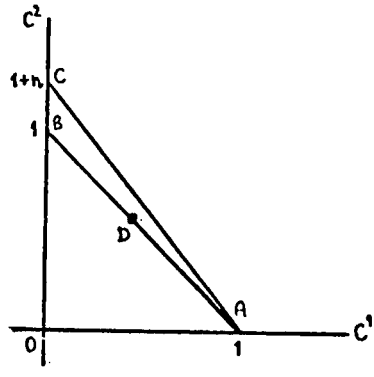

FIG. 2

VI. DURABLE OUTPUT

Now let us drop the assumption that output is completely perishable and substitute in its stead the assumption that output is completely durable.

The first thing to notice is that trades are still impossible. A member of generation t who wishes to give up a quantity of output at time t in return for a quantity of output at $t + 1$ can never find anyone who is offering to give up a quantity of output at time $t + 1$ in return for a quantity of output at time t. On the other hand, a technology is now available to a member of generation t with which he can transform output at time t into output at time $t + 1$, unit for unit.

Suppose that with this new regime we now require our economy to proceed in an entirely decentralized fashion, each individual acting on his own. The opportunity set available to each individual is now given by the triangle OAB in Figure 2. (Recall that, when output was nondurable, the individual's opportunity set consisted only of the line segment OA.) An individual of generation t will, therefore, pick his consumption plan (C_t^1, C_t^2) so as to maximize $U(C_t^1, C_t^2)$ subject to $C_t^1 + C_t^2 = 1$, which will lead him to a point, say D, on the boundary of his opportunity set. Clearly, D will not in general coincide with A; that is, the individual will in general choose to consume positive amounts in both periods. Not also that the point D will be optimal for individuals of *all* generations (since we are assuming a common utility function for all) so that decentralized behavior leads, once again, to a stationary path.

Now let us look at distribution schemes which are not necessarily decentralized. Obviously, any scheme which was feasible under the assumption that output is nondurable is also feasible under the as-

sumption that output is completely durable. Hence, the set of feasible distribution schemes in our new regime certainly contains the feasible set of the old regime. In particular, the set of all feasible stationary schemes must contain [5] the shaded set in Figure 1, which appears in Figure 2 as the triangle OAC.

A brief look at Figure 2 tells the story: While in the old regime decentralized behavior led to an efficient but (in general) nonoptimal distribution scheme, in the new regime decentralization leads (in general) to an *inefficient* (to say nothing of optimality) distribution scheme.

This phenomenon, the inefficiency of decentralized behavior, does not disappear if we drop yet another assumption and permit capital (which in this model is in the form of inert inventories) to become productive. This has been shown recently by Diamond (1965).[6] In Diamond's model, the inefficiency appears only if people "want to save too much" (in some well-defined sense). In the present model, people in the decentralized scheme *always* want to save too much, in the sense that the efficient distribution schemes involve zero inventories at every moment of time, while the decentralized scheme (in general) involves positive inventories at every moment of time. (In Diamond's model this is not always the case because, roughly speaking, as long as inventories reproduce faster than people, it is efficient to hold them.)

VII. Financial Intermediation

Thus far, we have avoided the question of how an efficient distribution scheme might be brought about. Is there an economic agent that could be introduced into the model and whose activity would ensure efficiency? Before attempting to answer this question we must probe a little further into the nature of the inefficiency of decentralization in the model of the foregoing section.

At the heart of the inefficiency in our new model (with durable output) lies the fact that decentralization forces people to hoard output in their first period so as to be able to consume what they had hoarded in the second period. The result is that in every period a fraction of total output is put aside in the form of a savings fund, to be carried over the next period. But, when the next period comes around and the older generation consumes its savings, the younger generation establishes its own savings fund and the economy ends up carrying a load of deadweight, in the form of output which is never consumed. Indeed, under the assumption of the same utility function for all, this load of deadweight keeps growing like a geometric progression, because the savings fund of generation t is $1+n$ the size of the savings fund of generation $t-1$.

The only way to restore efficiency to our system is to find an arrangement whereby the savings of generation t (when it is young) are used to provide for the consumption of generation $t-1$ (when it is old). In

[5] Actually, the two sets coincide.

[6] Note that the present model, with durable output, may be looked upon as a special case of Diamond's model, with the intensive production function (that is, the function relating ouput per man to capital per man) identically equal to unity.

this way, the situation in which positive amounts of real output are always being carried over, from period to period, will not arise. But, this cannot be done in a decentralized manner within the present framework of assumptions. The first thing which comes to mind at this point is that maybe the trouble lies in the lack of sufficient overlap between generations, which prevents the right trades from being made.

In order to investigate this possibility, we introduce into the picture a financial intermediary of some sort (say, a banking system or a system of pension funds) which is assumed to exist concurrently with *all* generations. People are now able to save by holding the liabilities of this financial intermediary, which they will in fact prefer to do if by holding such liabilities for one period they can earn a positive rate of interest. Now, the intermediary can, in fact, offer holders of its liabilities a rate of interest of n per period simply by using the output deposited with it by generation t to redeem the liabilities which are held by generation $t-1$. The result is that all output available in period t is in fact consumed in period t, partly by generation t and partly by generation $t-1$. Generation $t-1$ receives whatever generation t decides to save as payment in full (principal as well as interest) of the debt incurred to it one period earlier by the financial intermediary. There will no longer be a carryover of output from period to period and, as a result, efficiency will be restored. Indeed, optimality will be restored as well, because in response to a rate of interest of n per period people will choose to save exactly the amount which leads to the optimal distribution scheme.

The outlook seems rosy until one takes a brief look at the balance sheet of our financial intermediary, where things are rather unfortunate: The balance sheet as of the end of period t shows zero assets and liabilities of $s(1+n)^t$, where s is the (stationary) saving ratio of people in their first period of life. This means that at the end of period t the net worth of the intermediary is given by $-s(1+n)^t$. Now by not doing anything (that is, by shutting down) the intermediary can guarantee itself a net worth of zero, and so one might argue that it will never choose to engage in the aforementioned transactions. On the other hand, it might be argued that the intermediary should be looked upon as a social security system which is not privately owned, so that its networth position is of no concern (or should not be of any concern). This is what Lerner seems to be saying when he decries (1959, p. 517) "those of the accountants who insist on the 'solvency' of the Social Security Administration." Later, Lerner seems to be taking a 180° turn by insisting on the very accounting practice which he had previously decried: "'Business is fine,' said the optimistic contractor. 'It is true that I lose money on every contract, but I always start a bigger one and get an advance that more than covers the loss on the old one'" (1959, p. 523).

Be that as it may, it is certainly the case that a privately owned financial intermediary will not rescue the economy from inefficiency. In other words, decentralization and competitive behavior still fail to result in efficient behavior.

VIII. Lack of Borrowing as a Source of Inefficiency

Let x_t be the amount of output carried over by society from period t into period $t+1$. If we restrict our attention to stationary states, then it is clear that a necessary and sufficient condition for efficiency is $x_t=0$ for all t. However, if we wish to consider the nonstationary cases as well, the condition for efficiency becomes somewhat more complicated. For it is possible, for instance, for generation t to underconsume and for generation $t+1$ to overconsume, with the result that x_t will be positive and yet the economy will remain efficient. More generally, the building up of inventories does not destroy efficiency so long as these inventories are eventually consumed. The exact statement in this respect is as follows: *A necessary and sufficient condition for the economy to be efficient is that there exist a subsequence* $\{x_{t_k}\}$ *of the sequence* $\{x_t\}$ *such that*

$$\lim_{k\to\infty} x_{t_k}=0$$

The proof of this assertion will be given in the Appendix. Roughly speaking, efficiency requires that inventories return periodically to a level which is "practically zero."

From the point of view of balance sheets, x_t is clearly *net assets* (total assets minus total liabilities) in the economy at the end of period t. If we concentrate our attention at the time periods t_k, we find that efficiency requires net assets at the end of these periods to be (practically) zero.[7] In other words, in order to have efficiency, it must be the case that for each outstanding asset in the economy at the end of period t_k there exists a corresponding liability outstanding at the end of period t_k. But, now let us recall the time structure of our model. People live for two periods, they consume in both periods but earn income only in the first. This forces individuals to become net lenders (and never net borrowers) no matter what rate of interest prevails.[8] In particular, members of generation t_k will want to be net lenders, that is, to have an end-of-period balance sheet which shows just assets and net worth and no liabilities. But efficiency requires that aggregate net worth in the economy be zero, so there must exist someone in the economy holding liabilities in excess of assets, that is, having a negative net worth at the end of period t_k. This puts the unfavorable net worth position of the financial intermediary of section VII in perspective. By the same token, the decentralized economy of section VI is inefficient precisely because no one can be a net borrower while everyone wishes to be a net lender.

It is of some interest to investigate Samuelson's discussion concerning "the contrivance of money" in the light of the foregoing remarks. Clearly, if efficiency is to be attained, people must be dissuaded from holding output as a store of value and persuaded to hold another asset instead. If this other asset bears a positive rate of interest, then people will in fact make the desired shift. As Samuelson points out, the role of this other asset can very well be fulfilled by money. Peo-

[7] The word "practically" is intended to convey the notion that, strictly speaking, net assets at the end of period t_k might be given by some $\epsilon>0$, but by taking k large enough, this ϵ may be taken as small as we wish. From here on, we shall neglect to remind the reader of this qualification.

[8] As long as this rate of interest exceeds -1.

ple would save by buying the existing money supply and dissave by selling it to next period's savers. On a stationary path, the price of money will rise by a factor of $1+n$ in each period, which corresponds to a rate of interest of n per period, so individuals will in fact prefer holding money to holding output. Thus, at least with respect to stationary paths, the introduction of money leads to efficiency. (More precisely: Every stationary path in the money economy is efficient.) Samuelson's interpretation of this phenomenon is a philosophical one: An economy is inherently more than a mere mechanical system of particles in motion; it is, in fact, such a system *plus* something called a "Hobbes-Rousseau social contract" (Samuelson, 1958, p. 479). A physical system can operate efficiently without this added aspect, but a social system cannot.[9] Now, it seems to us that the social contract is no more involved in Samuelson's money economy than it is in any other general equilibrium model. For this reason we feel that Samuelson's discussion in this area is liable to be misleading. In general equilibrium analysis one thinks of a single market convention in which prices are announced and economic agents determine the trades and the productive activities in which they wish to engage at these prices. If the totality of all trades clears all markets, then the announced prices are said to be equilibrium prices. The question which general equilibrium theory asks is the following: Under the assumption that everybody at the market convention takes prices as *given*, is there a schedule of prices which leads to the clearing of all markets? In Samuelson's money economy, commodities are time-dated output and time-dated money, and all that one asks is whether or not a given price schedule is an equilibrium price schedule. It turns out that the schedule which sets the price of output in all periods equal to 1 and the price of money in period t equal to $(1+n)^t$ is, in fact, an equilibrium price schedule. The element of public trust in the monetary unit is reflected by the fact that a person who buys money in period t, at a price of $(1+n)^t$, assumes that he will be able to sell it in period $t+1$, at a price of $(1+n)^{t+1}$. But this is precisely what is meant in general equilibrium theory by the phrase "taking prices as *given*."

At the beginning of this section, we argued that, if efficiency is to be attained, someone will have to have a balance sheet showing liabilities in excess of assets. For this reason it seems appropriate to look upon money as a liability of a monetary authority that is committed to paying one dollar to whoever presents it with one dollar. The balance sheet of this monetary authority shows only liabilities and no assets, and the value of the authority's liabilities (quantity of money multiplied by the price of money) is precisely equal to the excess of assets over liabilities in the private sector. From this point of view, Samuelson's "contrivance of money" is, in essence, no different from the financial intermediary of section VII.

We turn now to a brief investigation of a model in which people live for *three* periods, and in which efficiency can be achieved (under some circumstances) without introducing into the economy a sector with negative net worth.

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[9] It is not clear whether Samuelson intends his model to constitute a *mathematical proof* of the Locke-Hobbes-Rousseau thesis.

IX. A Three-Period Model.

We have argued that in order to have efficiency there must be someone in the economy who is, at least periodically, a net borrower. Along stationary paths, this must be the case in *every* period. However, there was nothing in that argument to suggest that the net borrower must be a net borrower throughout his (or its) lifetime. Indeed, this role may well change hands over time, which was not the case with the financial intermediary of section VII.

The prime candidate for this state of temporary net borrowership is the consumer himself. To check on this possibility, let us consider the following modification of our model: Assume that people live for three periods rather than two. In the first period of life a person grows up and is educated and therefore earns nothing; in the second period he works and earns one unit of output; in the third he is retired. Every person will now be a net borrower at the end of his first period, a net lender at the end of his second period, and he will be neither a borrower nor a lender at the end of his last period. (We are not using the terms "negative net worth" and "positive net worth" because it is not clear that they are applicable in the present context.) We shall restrict our attention to stationary paths. Along a stationary path, everybody receives the same lifetime consumption profile, say (C^1, C^2, C^3). Feasibility and efficiency now means that the following equation holds:

$$(1+r)C^1+C^2+\frac{C^3}{1+n}=1,$$

which is similar to the feasibility and efficiency equation in the two-period case and is derived in the same way. If we let the (constant) rate of interest along the stationary path be denoted r, then each person's budget constraint is given by

$$(1+n)C^1+C^2+\frac{C^3}{1+r}=1,$$

which leads, once again to $r=n$. In other words, the only rate of interest which can be established along an efficient stationary path is n. Each person is now viewed as maximizing the utility function $U(\bar{C}^1,\bar{C}^2,\bar{C}^3)$ subject to the budget constraint (with n replacing r). The maximization will result in an *optimal* consumption plan, say $(\bar{C}^1,\bar{C}^2,\bar{C}^3)$. This optimal triple must be examined to see if it can be brought about by purely competitive (decentralized) trades.

The optimal consumption plan $(\bar{C}^1,\bar{C}^2,\bar{C}^3)$ will be said to be *competitively attainable* if the following equation holds:

$$\bar{C}^3=(1+n)^2\bar{C}^1.$$

To see how this condition is obtained, consider a person of generation t. When he is young, he borrows an amount $\bar{C}^1$ from members of generation $t-1$, who are in their middle years. Next period, when he is middle-aged and generation $t-1$ is retired, he returns the loan, plus interest. In other words, he returns the amount $(1+n)\bar{C}^1$. Now aggregate borrowing by generation t (when young) is given by the amount $(1+n)^t\bar{C}^1$, and, therefore, total payment by generation t

(when middle-aged) to generation $t-1$ (when retired) is given by $(1+n)^{t+1}\bar{C}^1$. This quantity, divided by the size of generation $t-1$, yields the per capita consumption of the retired, that is, $\bar{C}^3$. This is precisely what the foregoing equation says.

As an example, consider the utility function

$$U(C^1,C^2,C^3)=\sum_{i=1}^{\delta} \log C^i.$$

Maximizing it, subject to the budget constraint, leads to

$$(1+n)\bar{C}^1=\bar{C}^2=\frac{\bar{C}^3}{1+n}=\tfrac{1}{3},$$

which is clearly competitively attainable.

Why is the decentralized economy in this example efficient? Surely, it is possible to attribute this result to "the social contrivance of binding contracts." It is clearly in the interest of the middle-aged to default and ignore the debt which they have incurred when young. Even if the rules are such that a person guilty of default is denied access to the capital market as a lender (and so must lose interest on his savings), it is still true in many cases that default will result in increased consumption in all periods. Here, once again, is an opportunity to appeal to the social contract and here, once again, it would seem to be beside the point, and for very much the same reasons as before: The assumption that contracts are not defaulted upon usually goes without saying in the theory of the competitive mechanism; it does not *explain* our result, it merely *permits* it.

But our example is a very lucky one. For it is not, in general, to be expected that the optimal solution of a consumer's lifetime allocation problem will satisfy as stringent a condition as $\bar{C}^3=(1+n)^2\bar{C}^1$. In fact, with most utility functions this condition will not hold. If $\bar{C}^3>(1+n)^2\bar{C}^1$ then we shall, once again, have too little borrowing in the economy and an additional agent with negative net worth would be needed in order to attain efficiency. However if $\bar{C}^3<(1+n)^2\bar{C}^1$ then we shall have *too much* borrowing in the economy, and it will be possible to introduce a financial intermediary with *positive* net worth which will guarantee efficiency. The balance sheet of this intermediary will show I.O.U.'s of young people on the asset side and nothing on the liabilities side. In order to see how this intermediary would operate, let us concentrate, once again, on period t. In this period, a member of generation t offers to sell a quantity $\bar{C}^1$ of I.O.U.'s. The total supply of I.O.U.'s by generation t is therefore given by $(1+n)^t\bar{C}^1$. However, a member of generation $t-1$ wishes to buy only $\bar{C}^3/(1+n)$ in I.O.U.'s, so that the total quantity of I.O.U.'s demanded is $(1+n)^{t-2}\bar{C}^3$, which falls short of the quantity supplied. The intermediary now steps in and buys the excess supply, using as payment the resources which generation $t-1$ pays in when it redeems its own I.O.U.'s, which it sold to the intermediary in the previous period. Stationarity insures that these resources will always be precisely adequate to buy the outstanding I.O.U.'s. The result will be that physical output will not be carried over from period to period, so that efficiency will be attained.

The aggregate debt of the consumer sector to the fiancial intermediary will grow like a geometric progression, but each consumer by himself will be balancing expenditures and receipts over his lifetime; that is, at the end of his last period of life he will have zero net worth. Under these circumstances, the intermediary may very well be thought of as a privately owned, competitive institution.

X. Efficiency and Infinity

The possible inefficiency (or nonoptimality) of the competitive mechanism, as demonstrated by Samuelson and Diamond, has given rise to a certain amount of speculation, mostly on an informal basis. Many people (including Samuelson [for example, 1958, p. 474; 1959, p. 522] and Diamond [1965, p. 1134]) seem to feel that this phenomenon has something to do with infinity. What apparently leads one to point an accusing finger at "infinity" is the fact that for the standard general equilibrium model (which is finite) we have theorems which tell us that the competitive mechanism always leads to an optimum (and, a fortiori, to efficiency). Nevertheless, the role played by "infinity" in leading the competitive mechanism astray has remained, at best, rather vague. In the present section, we wish to explore this question somewhat more systematically by trying to construct a finite model that resembles the infinite model of the foregoing discussion as closely as possible. As it turns out, inefficiency may well arise in such a finite model.

Consider an economy with m agents and m commodities (where $m>2$). Each agent is both a consumer and a producer. Let C_i^j be the amount of commodity j *consumed* by agent i, and let Q_i^j be the amount of commodity j *produced* by agent i. Agent i (for $i=1, 2, \ldots, m-1$) is assumed to desire, for consumption, only two commodities: commodity i and commodity $i+1$. (Agent m is assumed to desire commodity m and commodity 1.) Thus, agent i's utility function is given by

$$U_i=U(C_i^i, C_i^{i+1}) i=1, \ldots, m-1, U_m=U(C_m^m, C_m^1),$$

where the function U is common to all. As for production possibilities we assume that agent i can produce commodities i and $i+1$ (with agent m producing commodities m and 1), but that he has a relative advantage in the production of commodity i. More specifically, we shall assume that agent i can produce any combination of Q_i^i *and* Q_i^{i+1} satisfying

$$Q_i \geqq 0, Q_i^{i+1} \geqq 0, Q_i^i+\frac{Q_i^{i+1}}{1-\delta} \leqq 1,$$

where δ is some real number satisfying $0<\delta<1$.[10]

Recall for a moment the infinite model of Section VI (with durable output). That model is easily shown to be mathematically equivalent to a model in which population is stationary, while the storing of out-

[10] We shall, from now on, neglect to write separate expressions for the case $i=m$. Let us agree, therefore, that whenever $i=m$, $i+1$ is simply 1.

put is subject to *depreciation* at some constant rate, say δ. But the model which we have described in the foregoing paragraph is an exact finite analogue of this infinite model with depreciation. For, by chopping off a finite segment of the infinite model and then tying the two ends together to form a closed loop, one obtains the model that is being discussed here.

Let us, therefore, investigate the efficiency of the competitive mechanism in our finite model, to which we shall henceforth refer, for short, as the *closed-loop model.* This investigation turns on whether or not intermediation is permitted.

Case a: No intermediation.—Under the assumption that intermediation is altogether absent, it is evident that the closed-loop model is inefficient. For, without intermediation, an agent who wishes to trade, say, x units of commodity j for y units of commodity k, must find, in order to be able to make the trade, an agent who wishes to trade y units of comodity k for x units of commodity j. This is, of course, the well-known "double coincidence of wants" (see, for example, Samuelson, 1964, p. 51). Now, in the closed-loop model, things are tailored in such a way that whatever trade an agent might wish to engage in, at whatever prices, he can never find another agent wishing to engage in the same trade on the opposite side. In other words, the double coincidence of wants never occurs. In the absence of intermediation, therefore, each agent must satisfy all his wants under complete autarky, and the doctrine of comparative advantage tells us immediately that this is inefficient. More formally, the decentralized solution of the closed-loop model in the absence of intermediation is given by

$$\left.\begin{aligned} C_i^i &= Q_i^i \\ C_i^{i+1} &= Q_i^{i+1} \end{aligned}\right\} \text{ for } i=1, \ldots, m,$$

where(Q_i^i, Q_i^{i+1}) is chosen so as to maximize $U(Q_i^i, Q_i^{i+1})$, subject to

$$Q_i^i + \frac{Q_i^{i+1}}{1-\delta} = 1, \; Q_i^i \geqq 0, \; Q_i^{i+1} \geqq 0.$$

Under the assumption that $\delta > 0$, this solution is inefficient. The economy can produce more of every commodity.

Now let us go back for a moment to the model of section VI. The inefficiency which beset the economy of that section is precisely the inefficiency which now besets our closed-loop model. All the arguments (indeed, the very words) of section VI are applicable to the closed-loop model, with only minor changes which have to do with substituting depreciation for population growth.

Case b: The money economy.—The necessity for a double coincidence of wants disappears, as is well known, as soon as barter is abandoned in favor of the money economy. Thus, one might expect the introduction of "the contrivance of money" to cure the aforementioned inefficiency, just as it cured the inefficiency of the model of section VI. Such, indeed, is the case. In the money economy, agent i will produce commodity i exclusively, sell some of it to agent $(i-1)$, and then use the money which he receives in return to buy some of agent $(i+1)$'s output. More formally let p_i be the money price of

commodity i. Then, the equilibrium of the money economy is described by

$$\begin{aligned} p_i &= p_j \text{ for all } i \text{ and } j, \\ Q_i^i &= 0 \text{ if } i \neq j \\ &= 1 \text{ if } i = j, \end{aligned}$$

and (C_i^i, C_i^{i+1}) chosen so as to maximize $U(C_i^i, C_i^{i+})$, subject to $C_i^i + C_i^{i+} = 1$, $C_i^i \geqq 0$, $C_i^{i+1} \geqq 0$.

This equilibrium is efficient, and it is precisely analogous to the equilibrium in the money economy that was discussed in section VIII. People "buy" money in return for goods which they produce, and then "sell" it for goods which they want. Basically, money here provides intermediation. Agent i sells to agent $(i-1)$, but he is being paid in terms of output of agent $(i+1)$.

There are several ways in which money can be introduced into the closed-loop model. The simplest is as follows: Think of agent 1 selling a promissory note to agent 2, who, in turn, proceeds to sell it to agent 3, and so on. The note travels around the loop until it reaches agent m, who redeems it from agent 1. All other agents, however, accept agent 1's note not because they are interested in agent 1's output, but simply because the note is *negotiable*. In other words, agent 1's note will assume the role of money.

Case c: The ordinary general equilibrium model.—The closed-loop model is, after all, a finite general equilibrium model, and for the latter we have theorems concerning optimality and efficiency. What role, then, does intermediation play in the standard general equilibrium theory? The answer to this question is straightforward: In all of general equilibrium theory it is assumed (mostly implicitly) that a *central clearing house* exists, through which trades are channeled. Only with such a central clearing house is it possible to define competitive equilibrium in terms of aggregate excess demands alone. If a central clearing house were to be introduced in the closed-loop model, competitive behavior would lead to efficiency, as may be verified directly (without appealing to general theorems). But, the central clearing house is obviously an intermediary. It is, in fact, precisely the analog, in the closed-loop model, of our negative net worth intermediary of section VII.

XI. Concluding Remark

Before closing, we would like to add a brief comment concerning the relation of the topics we have been discussing here to the Modigliani-Brumberg (1955) "life-cycle" theory of saving. Modigliani and Brumberg have postulated that aggregate saving can be explained by the interaction of individual saving for retirement and changes in the population structure. It is interesting to note that under the Modigliani-Brumberg assumptions of a zero rate of interest and an exponentially growing population, providing for old age in a way which results in positive aggregate saving is inefficient.[11]

[11] We are indebted to James Tobin for this observation.

Appendix

Let x_t be the level of inventories carried over by the economy from period t into period $t+1$. In section VIII a necessary and sufficient condition for efficiency was stated. The following is an equivalent assertion:

Theorem: *The economy is efficient if and only if*

$$\liminf_{t\to\infty} x_t = 0.$$

Proof. (*a*) *Necessity:* Suppose $\liminf x_t > 0$. Then there exists an $\epsilon > 0$ and an integer T such that $x_t > \epsilon$ for $t \geqq T$. Let aggregate consumption in period T be increased by ϵ, and let consumption in all subsequent periods remain unchanged. Let the sequence of inventory levels under this new scheme be denoted $\{x_t'\}$. Clearly, $x_t' = x_t$ for $t \leqq T$ and $x_t' = x_t - \epsilon$ for $t > T$. All that must be verified to show that the new scheme is feasible is $x_t' \geqq 0$ for all t. But this follows from the hypothesis.

(*b*) *Sufficiency* is proved similarly: Assume $\liminf x_t = 0$. We must show that it is impossible to increase aggregate consumption in any period while keeping aggregate consumption in subsequent periods unchanged. Let aggregate consumption in period T be increased by an amount $\epsilon > 0$, where T is an arbitrary integer. Denote the new sequence of inventory levels by $\{x_t'\}$. Now for $t > T$, we have $x_t' = x_t - \epsilon$, but by hypothesis there exists a $t > T$ such that $x_t < \epsilon$. Hence x_t' would have to be negative; that is, the new scheme is not feasible.

References

Diamond, Peter A. "National Debt in a Neoclassical Growth Model," *A.E.R.*, LV (December, 1965), 1126–50.

Lerner, Abba P. "Consumption-Loan Interest and Money" and "Rejoinder," *J.P.E.*, LXVII (October, 1959), 512–517, 523.

Meckling, W. H. "An Exact Consumption-Loan Model of Interest: A Comment" and "Rejoinder," *J.P.E.*, LXVIII (February, 1960), 72–75, 83–84.

Modigliani, F., and Brumberg, R. "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," in *Post-Keynesian Economics*, ed. K. K. Kurihara. London: George Allen & Unwin, 1955.

Phelps, Edmund S. "Second Essay on the Golden Rule of Accumulation," *A.E.R.*, LV (September, 1965), 793–814.

Samuelson, Paul A. "An Exact Consumption-Loan Model of Interest with or without the Contrivance of Money," *J.P.E.*, LXVI (December, 1958), 467–482.

———. "Reply," *ibid.*, LXVII (October, 1959), 518–522.

———. "Infinity, Unanimity, and Singularity: A Reply," *ibid.*, LXVIII (February, 1960), 76–82.

———. *Economics, an Introductory Analysis.* 6th ed. New York: McGraw-Hill Book Co., 1964.

ECONOMIC ASPECTS OF PENSIONS: A SUMMARY REPORT*

BY ROGER F. MURRAY

RELATION OF THE DIRECTORS TO THE WORK AND PUBLICATIONS OF THE NATIONAL BUREAU OF ECONOMIC RESEARCH

1. The object of the National Bureau of Economic Research is to ascertain and to present to the public important economic facts and their interpretation in a scientific and impartial manner. The Board of Directors is charged with the responsibility of ensuring that the work of the National Bureau is carried on in strict conformity of this object.

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(*Resolution adopted October 25, 1926, as revised February 6, 1933, and February 24, 1941*)

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Working closely with me have been four extraordinarily capable research assistants: H. Robert Bartell, Jr., Peter O. Dietz, Richard L. Menschel, and Thomas E. White. The first two of this group subsequently wrote their doctoral dissertations in aspects of the pension field and have continued to expand the range of their contributions to knowledge.

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Roger F. Murray

I. The Principal Questions

The emergence of a new structure of fiscal operations, financial institutions, and capital market participants inevitably raises a host of questions about its implications for the American economy and, in particular, the saving and investment process. Despite the fact that the original Federal legislation for the old-age and survivors insurance program dates back to 1935 and pioneer arrangements by private industry to provide retirement income are 50 years old and more, the present structure is properly described as new in the sense of only now becoming of genuine economic significance. Now it is possible to visualize the impact of public and private pensions on such basic economic processes as saving and capital formation.

RETIREMENT SAVING IN AN INDUSTRIAL SOCIETY

How can a well-developed industrial society like the United States save for the purpose of providing retirement income? As fewer individuals directly own the means of producing those goods and services which they wish to use in retirement, it is evident that fewer of them can store tangible assets for future consumption. In the New Testament parable, the rich farmer could build new barns to store grain and other goods for years of future ease.[1] His present-day counterpart, however, would hire a larger safe deposit box to store financial claims and equities.

The point is simply that rising living standards are achieved through the development of an economy which relies upon the exchanging of claims to goods and services rather than the satisfaction of wants from the individual's own current output or a bartering of consumption goods. The individual members of our 20th-century society, therefore, cannot and do not save for their own retirement needs in real terms. It is true that an individual can provide for some of his future needs by acquiring outright ownership of his home. But, he cannot store up, in physical terms, future property taxes, insurance premiums, maintenance expenses, and the cost of cutting the grass.

That only a small fraction of saving for retirement can take the form of accumulations of tangible goods, whether we think of individual cases or of society as a whole, means that the process of saving and investment, the exchanging of financial claims, must develop and grow to accommodate an additional type of transaction. Furthermore, as arrangements are made to handle these transactions outside the family unit, the claims and financial assets entering into the money and capital markets are multiplied. The simplest illustration is the case of the son who used to support his parents from current income, but now supports them only as a member of the working population while they live on OASI benefits, a supplemental private pension, life insurance benefits, a savings account, and dividends from common stocks.[2]

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[1] Luke 12: 16–19.

[2] The growth of financial institutions for such transactions has been explored in depth by Raymond W. Goldsmith in *Financial Intermediaries in the American Economy Since 1900*, Princeton University Press for National Bureau of Economic Research, 1958, and *The Flow of Capital Funds in the Postwar Economy*, New York, NBER, 1965.

This shifting to public and private organizations on a group basis and the adoption of insurance-type arrangements are significant developments in themselves and account for the historical record of a high growth rate for savings in this form. But, these secular trends were jolted out of their regular pattern by a shift in the preferences of the American people. In the long history of employment in manufacturing, workers have accepted a substantial portion of productivity gains in the form of a shorter workweek to enjoy more leisure time. From 1950 to 1965, on the other hand, there was no reduction in the average number of hours worked. (Paid holidays and vacations were increased, to be sure.)

The same period witnessed a spectacular growth in pension coverage for manufacturing industries. Workers did, in fact, receive a substantial portion of their real gains in the form of future retirement benefits, along with other income maintenance programs, during the postwar years. Also, this lasted long enough to be called a trend. It is reasonable to conclude, therefore, that employee preferences have shifted, to some extent, from the desire for more leisure during their working years to a greater degree of financial independence during retirement or to earlier retirement.

The main threads of the story, then, are as follows: (1) The long shift in our society from agriculture and a degree of self-sufficiency in the family unit to an industrial, urban society; (2) the increase in life expectancy, the widespread application of fixed retirement ages, provisions for early retirement, and the resulting spectacular growth in man-years of living in retirement; (3) a preference for a degree of independence in old age as compared with other benefits during active employment; (4) the growth in institutional arrangements for attaining goals on a group, rather than individual, basis through the employment of insurance principles.

Basic to all of these developments has been a change in the attitude of the American people toward their old people, now sometimes known as "senior citizens." Dependency on public or private charity based on a means test is more widely recognized as destructive of human dignity and the full potential for self-realization that lies in every individual. Concurrently has come the widespread acceptance of social insurance as a normal institutional arrangement in our industrial society.

The economic aspects of pensions develop, then, from basic forces at work in our society. We can be confident that the structure of arrangements will not be dismantled, nor will it fall into disuse in another generation. Rather, it will grow and develop, spread and become more inclusive, and become an increasingly dynamic force in economic processes. For these reasons, too, we must look ahead, not dwell upon history, to detect the most important questions and issues of public policy and private action.

THE SHAPE OF THINGS TO COME

Obviously, the pension structure will evolve over the next decade and more in response to many factors: the economic environment, rates of growth in different sectors, employee preferences, and public policy decisions. Nevertheless, it is possible to identify the basic forces at work and to rely upon them in projecting the probable course of flows of

income and capital funds. Thus, one of the basic components of our study has been a projection of the magnitudes of such determinants of future economic influences as coverage, contributions, beneficiaries, benefit payments, and fund earnings and accumulations.[3]

The questions which arise in making these projections are discussed at length in Holland's study. The extrapolation of past trends has a certain validity because of the long-time span of pension commitments. Moreover, most of the pensioners in the year 1975 will already have qualified for a large share of their prospective benefits. The costs have been incurred and may have actually been funded in whole or in part through insurance contracts or trust funds. Despite revisions in employee benefit plans from time to time and the increasing fulfillment of pension promises, the basic framework of pensions for this group is not likely to change materially.

Hence, it is possible to make helpful estimates not only of today's fund flows but also of the transfer payments and capital market flows of 1970, 1975, and 1980. Such estimates enable us to contrast with present and past influences on income and expenditures those transactions which will be generated in the future. What differences will they make? How will recipients of benefits respond to the creation and realization of their equities in pension programs? Who pays the cost of these benefits? How are the costs distributed over time?

The answers to these questions may be different at various stages in the evolution of the pension structure. It becomes essential, therefore, to look at the system from several vantage points: In its early stages, in its rapid growth phase, and in approaching maturity. In chapter II, we have attempted this view of the structure of retirement income arrangements from 1940 to 1980.

The purpose of this view is, first, to appraise the redistribution of income brought about by the emerging pension structure. Chapter III explores this process of income transfers. The incidence of costs and the distribution of benefits are familiar problems of analysis in other contexts. Our inability to produce precise answers should not deter us from exploring the issues. We should even venture to face that old question: Is there some limit to the pensions we can afford? Is this a meaningful question and is there any quantitative answer to it? What might be the result in the distant future of the maturing of pension commitments?

In addition to the direct influence of transfer payments on incomes, spending, and saving, we should trace the impact of fund accumulations under pension arrangements. How do they affect aggregate saving? Our discussion of this major question in chapter IV is based largely upon Phillip Cagan's perceptive analysis.[4] This thorny question also has its time dimension, and the pattern of saving reactions over future years becomes of great interest in the formulation of economic policy.

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[3] Daniel M. Holland, *Private Pension Funds: Projected Growth*, New York, NBER, 1966, deals with these variables in projecting the fund flows through industrial pension plans and the retirement systems of State and local governments. This study will be referred to as Holland's projections throughout this volume.

[4] Phillip Cagan, *The Effect of Pension Plans on Aggregate Saving: Evidence from a Sample Survey*, New York, NBER, 1965. This study will be referred to as Cagan's paper on saving throughout this volume.

Entirely apart from these questions about the impact of the pension structure on aggregate saving, however, we face a range of questions relating to the influence on the capital markets of directing the flow of funds through financial intermediaries known as pension trusts, life insurance companies, and governmental retirement systems.[5] The assets acquired and held by these institutions are influenced, of course, by the nature of their liabilities. Our projections of the fund flows should, therefore, be a guide to the influences which we can expect to see investment managers exert on the capital markets. For private pension programs, these possibilities are discussed in chapter V, and the operations of State and local government retirement systems are analyzed in chapter VI.

In chapter VII, the findings of the study are pulled together in the form of some conclusions, an identification of some of the implications for public policy, and a recognition of the gaps in our knowledge about certain aspects of the subject.

THE QUESTIONS IN PERSPECTIVE

When viewed in their totality, the questions relating to the economic effects of the development of public and private pensions are as all-inclusive as a study of the American economy as a whole. Some narrowing of the field of investigation was inevitable, therefore, to make the project manageable. For example, we have not undertaken to study the impact of pensions on labor mobility, a matter of great importance in these days of rapid technological change. Nor have we been especially concerned with the tax treatment of pensions and the aged. The role of pensions in contributing to economic stability is treated by implication, but this has not been treated as a major topic.

Otherwise, we have attempted to respond to most of the issues outlined in the National Bureau's exploratory survey, published in 1957, as *Suggestions for Research in the Economics of Pensions*. That survey attempted to delimit the economic aspects by excluding from consideration medical, sociological, and psychological problems of the aged. While admittedly of great importance, these topics require specialized treatment and a different preparation for the investigators.

The conception of this particular study was that it would build upon the work of the National Bureau in the fields of capital formation and financial institutions. The timing seemed good since the research program on postwar capital markets had been largely completed. Without that wealth of material, this study could not have been undertaken with confidence. In a very specific sense, we are simply carrying on these previous studies with particular emphasis on a new and dynamic factor in the perpetually changing roles of financial intermediaries.

In identifying the present and future impact of public and private pension systems on saving and investment as the most important economic aspects of pensions, we do not mean to imply that these are

[5] H. Robert Bartell, Jr.'s study of union and jointly administered pension funds and Elizabeth T. Simpson's study of the pension plans of nonprofit organizations. *Pension Funds of Multiemployer Industrial Groups, Unions and Nonprofit Organizations,* fill in gaps in our knowledge about these special types of funds.

the only important considerations. Berle, Harbrecht, and Tilove [6] have discussed some of the issues arising from the institutional ownership of a large and growing share of equity securities. Dan M. McGill has dealt in a major study with the problem of assuring the fulfillment of pension expectations.[7] Similar concerns about the legal aspects of pension commitments prompted Merton C. Bernstein to write *The Future of Private Pensions*.[8] Finally, the Cabinet Committee Report of January 1965 [9] has raised a wide range of issues regarding the regulation of private pension arrangements.

These various studies, and numerous other writings, deal with problems of fairness and equity to the employee: matters of proper public concern. As citizens, our sense of justice is particularly outraged if an individual has been led to believe that provision has been made for his old age and this turns out not to be the case. When he has lost his capacity to support himself, it seems a particularly cruel form of injustice to have his expectations destroyed by careless, incompetent, or venal administration of his retirement income program.

Our concentration on the economics of pensions should not be interpreted as reflecting a lack of concern for this whole range of questions. We are simply trying to provide a basis for judgment about the economic implications of the range of steps which might be taken in the area of the public interest in the pension structure.

Comparable choices had to be made in deciding whether we ought to be concerned with the adequacy of pension benefits. Here we determined to express no judgments apart from our role of analyzing the costs and economic impact of steps taken to improve the level of benefits.[10]

The narrowing of the focus of this study to the saving and investment process may seem to exclude some of the burning issues of our time. Clearly, it skirts some areas of lively controversy. Yet, we make no apologies for the design of the study, believing that we have attacked the hard core of the subject. Among the wide range of topics, we had to make a selection on the basis of our backgrounds and the objectives of the National Bureau's research program. Furthermore, we were concerned about losing sight of the relationship of manmade pension arrangements to the underlying realities of the economic process. Perhaps, in the final analysis, economic growth, economic stability, and inflation are such prime determinants of our ability to provide systematic programs to spread income beyond the years of productive employment that they deserve the priorities which we have given them by our concentration on the saving and investment process.

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[6] Adolph A. Berle, Jr., *Power Without Property*, New York, 1959; Paul P. Harbrecht, *Pension Funds and Economic Power*, New York, 1959; Robert Tilove, *Pension Funds and Economic Freedom*, New York, 1959.

[7] Summarized in his *Fulfilling Pension Expectations*, Homewood, Ill., 1962.

[8] New York, 1964.

[9] *Public Policy and Private Pension Programs, A Report to the President on Private Employee Retirement Plans*, by the President's Committee on Corporate Pension Funds and Other Private Retirement and Welfare Programs, Washington, 1965. Reference will be made elsewhere to earlier studies by other agencies of Government.

[10] The writer, as an individual, has participated in hearings held by the Subcommittee on Retirement Income of the Special Committee on Aging, U.S. Senate, July 12–13, 1961, and March 4, 5, 10, 1965.

A CENTRAL THEME

As previously emphasized, in our urban industrialized society, we deal primarily in claims rather than in tangible goods. A typical employee today accumulates the right to receive income after age 65 from the OASI system of the Federal Government and from a pension plan established by his employer. He can read booklets and calculate what his benefits and those of his survivors will be if and when he attains age 65 in his present employment.

These prospective benefits are translated by him into a certain degree of financial independence, a level of living rather than a money income. At that future date, he expects to have a reliable command over the goods and services which others will be engaged in producing. His very inability to provide for his own retirement by storing up a major portion of his living standard makes him wholly dependent upon the purchasing power of those accumulated claims.

If, by reason of stable economic growth during his remaining working years and during the period of his retirement, productivity gains are substantial, those claims will give him a command over a good level of living. Stable prices and quality improvements are essential for this happy outcome.

Furthermore, he must take into account the attitudes of those who will be providing him with goods and services during his years of retirement. They must be willing to forgo current consumption of real output in exchange for their own accumulation of claims to retirement income. Their willingness to do so depends upon their standard of living, a function of the productivity gains achieved in the economy through investment in all forms.

If the claims to real output of the retired population seem burdensome to the younger employed workers, they will be willing to tolerate or even to stimulate a lightening of the burden through the traditional route of inflation. On the other hand, rising real incomes for the working population make acceptable the diversion of real output to those no longer working. This is especially so if widespread coverage by pension programs relieves the worker of personal responsibility for retired members of his immediate family.

In short, the emerging pension structure has a great potential for good if confidence in claims to retirement income is sustained by an economy which is showing stable economic growth without inflation. Since saving and capital formation play a key role in this process, it is crucially important to determine that public and private pension programs operate in a manner to contribute constructively to the kind of economic progress which will translate their promises into realities.

The central theme of the research project summarized in this volume is the search for a better understanding of the economic effects of the mammoth structure of commitments, benefit payments, and fund accumulations which we are still in the process of creating. Is it well designed to accomplish its exceedingly worthwhile objectives? Can it be improved in some respects? Does it suggest the desirability of other economic policies to reinforce or offset its effects? And finally, what difference does it make if the shares in the total provision of retirement income are altered as between private plans and the tax-supported programs of the Federal Government?

II. The Characteristics and Financing of Pension Programs, 1940–80

A pension, broadly defined, is a regular payment, normally for life, to provide retirement income to the recipient upon completion of his working years. The payments may be made to the worker or his spouse, or for dependent children. If withdrawal from gainful employment is occasioned by accident or ill health, the payments may be called disability benefits, but the distinction is not important. It is really immaterial whether "retirement" is caused by attainment of a specified age or by inability to continue at work. For purposes of economic analysis, the significant elements of the pension structure are not the details of how a person qualifies for the benefits of a public or private program, but, rather, the nature and financing of commitments to individuals far into the future. Nor is it important whether the contributions are based upon actuarial calculations or a share of profits.

Our interest, then, is in any program, whatever the benefit formula, whatever the source of funds, and whatever the terms and conditions, which serves to maintain income for those who have partially or wholly retired from gainful employment. Private charity and personal gifts, although obviously major voluntary elements in the care of older people, are not within our purview because they do not represent systematic arrangements involving the shifting of group commitments to agencies or institutions which are expected to fulfill them. Individual saving for retirement and old age is less clearly distinguishable from pension programs and must be recognized at certain points, even though it is not a part of the emerging structure for groups of individuals.

In short, we are concerned with those arrangements which are clearly distinguishable from traditional forms of personal saving and expenditure. The questions, as we have seen, relate to the implications of the present and prospective pension structure for the saving and investment process. What difference does it make that we have been creating, and continue to create, an extensive network of arrangements for the systematic provision of retirement incomes to most Americans? What are the new and different factors introduced by this emerging pension structure? What are the implications for economic policy and for the capital markets? The starting point for answers to these and related questions is an identification of the peculiar characteristics of the present and prospective structure.

Public and private pension programs: an overview

Somewhat arbitrarily, the period from 1940 to 1960 can be considered the period of the development and rapid growth of institutional arrangements. By 1960, the public and private programs had become firmly established, powerful influences in our structure of income distribution. These were the decades of most rapid growth in the creation of promises and expectations for greater financial security in old age.

In contrast, it is possible to view a second 20-year period from 1960 to 1980, not only as a period of amendment and enlargement, but also as

years of rapid maturing in the fulfillment of expectations. That is to say, by 1960 the pension structure had come of age. To a greater extent in the future, it will be providing benefits instead of expectations.

It is possible to measure the scope of the emerging pension structure in several ways: The extent of coverage, the number of beneficiaries, the amount of benefits, and the funds being accumulated to pay benefits in the future. Simply to trace developments since 1940 in the whole range of programs to maintain retirement incomes, however, it is helpful to look first at the growth in actual benefits paid (table II-1).

TABLE II-1.—BENEFIT PAYMENTS UNDER PUBLIC AND PRIVATE PROGRAMS, 1940–65

[Annual totals in millions of dollars]

Program	1940	1945	1950	1955	1960	1965
OASDI	35	274	961	4,968	11,245	18,311
Railroad retirement	118	147	311	577	962	1,155
Federal civil service	68	94	192	380	816	1,384
Other Federal employee	54	76	301	489	779	1,561
Veteran	424	952	2,224	2,746	3,437	4,196
Old-age assistance	475	727	1,478	1,765	2,216	2,615
State and local government	142	193	320	595	1,083	1,780
Private employee	140	220	370	850	1,750	3,180
Total	1,456	2,683	6,157	12,370	22,288	34,182
Percentage of personal income	1.9	1.6	2.7	4.0	5.6	6.4

Source: "Social Security Bulletin," Statistical Supplement, 1965; "Social Security Bulletin," April 1967.

The table traces the income maintenance effects of the whole range of programs at various points in time. The six programs of the Federal Government, it is strikingly apparent, provided 85 percent of all the benefit payments disbursed in 1965. State and local government retirement benefits and those provided by private programs had compound annual growth rates of 10.6 percent and 13.3 percent, respectively, for the 1940–65 period, but they were overshadowed by the Old-Age, Survivors, and Disability Insurance System. This reflects, of course, the result of making increases in benefits applicable to present beneficiaries and the different characteristics of the programs.

The unique characteristic of a national social insurance system such as OASDI is the matching, over a span of years, of collections from employers, employees, and self-employed with current benefit payments. As the program matures and as benefits are increased, the rate of tax on earnings will have to rise except as the maximum amount of annual earnings taxable and creditable toward benefits is periodically increased. By 1955, the OASDI system had reached the stage in its evolution at which benefits and administrative expenses were equal to 82 percent of total income, and by 1960 the proportion was 95 percent. The initial contingency reserve fund had been accumulated and receipts and disbursements approached an approximate balance.

Other Federal programs, such as those for veterans, retired members of the Armed Forces, and individuals who qualify for old-age assistance on the basis of need, are noncontributary pay-as-you-go programs, in which the cost of benefits is met by current appropriations from general revenues. No attempt is made to anticipate future costs or to create any kind of a reserve fund. Total receipts and the total

of benefits and expenses have been rising at the same pace, therefore, and will continue to do so.

In contrast, the usual concept of funding aims to keep the contribution rate unchanged over a long period for a given benefit formula. This sort of "level premium" per dollar of employee compensation, to use the analogy from ordinary life insurance, involves prepayments to be accumulated at interest. The excess of contributions over benefit payments will be relatively large in a new program, in a newly liberalized program, or in the case of a young employee group. The accumulation of these excess receipts is expected to provide the earnings necessary to close the gap between leveling contributions and rising benefit payments as the program matures.

The relation between total contributions and the benefit payments shown in table II–2, for selected programs which are wholly or partially funded, illustrates the lag of benefits behind contributions and the degree of maturity achieved at different points in time.

TABLE II–2.—CONTRIBUTIONS AND BENEFITS UNDER SELECTED PUBLIC AND PRIVATE PROGRAMS, 1940–65

[In millions of dollars]

Program	1940	1945	1950	1955	1960	1965
Railroad retirement:						
Contributions [1]	130	279	546	588	910	1,113
Benefit payments	118	147	311	577	962	1,155
Benefits as percentage of contributions	91	53	57	98	106	104
Federal civil service:						
Contributions	141	541	678	744	1,610	2,197
Benefit payments	68	94	192	380	816	1,384
Benefits as percentage of contributions	49	17	28	51	51	63
State and local government:						
Contributions	267	380	905	1,740	2,895	4,220
Benefit payments	142	193	320	595	1,083	1,780
Benefits as percentage of contributions	53	51	35	34	37	42
Private employee:						
Contributions	310	990	2,080	3,840	5,480	7,750
Benefit payments	140	220	370	850	1,750	3,180
Benefits as percentage of contributions	45	22	18	22	32	41

Source: Table II–1; "Social Security Bulletin," Statistical Supplement, 1965; Institute of Life Insurance.

[1] After 1954, contributions include transfers from OASDI under the financial interchange arrangement with the Railroad Retirement System.

While the relation between benefits and contributions is affected by a number of factors other than the maturing of the programs (such as changes in employment, extension of coverage, extent of funding, and integration with OASDI), it can be used as a very crude measure of progress toward the maturing of a system.[1] In these terms, we can identify the railroad retirement system as having matured in 1955, the Federal Civil Service Retirement System as now in middle age, State and local government retirement systems in vigorous young manhood, and programs covering individuals in private employment as having rapidly outgrown adolescence.

In short, table II–2 verifies the statement that by 1960 the pension structure had come of age. What may lie ahead is discussed in the brief reviews of the major programs which follow.

[1] A retirement system is said to be mature when contributions plus interest earnings on fund accumulations equal the sum of benefit payments and administrative expenses. This precise definition of maturity is rarely encountered in a growing economy. More frequently, the transition from extremely rapid growth to a more moderate pace of asset accumulation, the maturing process, takes the form of an increasing proportion of contributions being immediately disbursed in the form of benefits.

OLD-AGE, SURVIVORS, AND DISABILITY INSURANCE

Clearly identified as a social insurance system, OASDI emphasizes the objectives of portability and inclusiveness. The objective of providing a basic level of income to all disabled or retired individuals, their dependents, and survivors is served in the United States essentially by a wage-related benefit, calculated by formula to replace a higher portion of low than high earnings from past employment. The setting of minimum and maximum levels of benefits and small payments to individuals over 72 not otherwise covered gives the program some characteristics of a flat-rate plan, but the wage-related features are deeply embedded in the structure.

With the attainment by 1955 of close to 90-percent coverage of eligible individuals in paid employment, attention was turned to increasing OASDI benefit provisions and periodic revisions were made to reflect changes in living costs. Because of their applicability to beneficiaries, these changes have been promptly reflected in the amount of benefits distributed. Currently, and in the future, the OASDI system is a major factor in Federal fiscal operations. Its impact came largely through transfers of income during the 1957–67 decade, when the trust funds did not grow as holders of Federal securities. Table II–3 shows the accumulation of the present reserve fund.

TABLE II–3.—ASSETS OF OASDI TRUST FUNDS, 1940–66

[In millions of dollars]

Year end	Old-age and survivors insurance trust fund	Disability insurance trust fund	Total
1940	2,031	—	2,031
1945	7,121	—	7,121
1950	13,721	—	13,721
1955	21,663	—	21,663
1960	20,324	2,289	22,613
1965	18,235	1,606	19,841
1966	20,570	1,739	22,308

Source: "Social Security Bulletin," Statistical Supplement, 1965, and SSB, July 1967.

Moderate fluctuations are more likely than substantial growth for the trust fund accumulations in the future. Current projections show sizable additions to assets in future years, but their realization depends, at least, in part, upon the assumption of no changes in the law. In reality, the trust funds serve primarily to take care of shortrun disparities between payroll tax collections and benefit payments. Also, the interest collected on the Government securities held by the funds amply covers the administrative expenses of the system. In any event, changes in the assets of the trust funds are not a measure of the "saving" by covered individuals in the sense that we measure pension saving by adding together the assets of plans funded through life insurance companies, pension trusts, or governmental retirement systems.

A different, but not necessarily appropriate, accounting approach would show monumental totals on a balance sheet which would also reflect, on the asset side, the present worth of income to be received in the future from payroll taxes and interest on the trust fund assets. The corresponding liability item would be the present worth of future

benefit payments plus the cost of administering the system. These calculations are not customarily used, except for actuarial purposes to determine actuarial balance, but the claims to future benefits are just as real to the wage earner as an insurance policy or an equity in a private pension plan. That these equities are very large is suggested by the estimate that the survivorship protection of OASI alone had a face value of about $700 billion at the start of 1966.[2]

The OASDI program, nevertheless, operates as a giant mechanism for fulfilling retirement income expectations. The design of supplemental pension plans integrated with OASDI recognizes the reality of this growing equity of the employee in a wide range of prospective benefits. With the attainment of almost universal coverage, social security has become completely integrated into the flow of income and expenditure in the economy. Prospective benefits are the major unrecorded financial asset of a large proportion of American families. Actual monthly benefits are going to more than 23 million individuals, almost 16 million aged 65 and over, with the result that the reality of the program is evident to all.

Periodic revisions to take account of rising living costs and living standards will probably be made in the future as they have in the past. Whether, as has been proposed, some adjustments will be made automatically is currently being debated. In any event, even the present program will generate higher levels of benefits as more individuals qualify for monthly payments closer to the maximum level. Recent cost estimates prepared by Robert J. Myers, Chief Actuary of the Social Security Administration,[3] suggest the following pattern for combined old-age, survivor, and disability benefits:

[In millions of dollars]

Year	Low-cost estimate	High-cost estimate
1965 (actual)	18,310	18,310
1970	23,019	23,498
1980	30,404	31,725

Number of Beneficiaries

End of Year:	*Thousands*
1940	149
1945	177
1950	398
1955	633
1960	809
1965	911

Source: *Social Security Bulletin.*

These estimates do not, of course, allow for subsequent revisions in the benefit structure. They simply illustrate that, under any particular formula for determining benefits, the growth in payments is moderate after the initial impact of a change made applicable to present as well as prospective beneficiaries.

[2] Robert M. Ball, "Policy Issues in Social Security," *Social Security Bulletin*, June 1966, p. 4.

[3] Robert J. Myers and Francisco Bayo, *Long-Range Cost Estimates for Old-Age, Survivors, and Disability Insurance System, 1966*, Social Security Administration, actuarial study No. 63, January 1967.

As the OASDI system is modified and developed in the years to come, it will continue as the major source of retirement income benefits for as far ahead as one can see.

THE RAILROAD RETIREMENT SYSTEM

An interesting illustration of the maturing of a pension program is found in the operations of the Railroad Retirement System. Disregarding the active hiring during World War II, covered employment was virtually unchanged at 1.2 million between 1939 and 1956. Since then it has declined by about one-third. As a consequence, the median age of employees rose from 41.5 to 46.2 years between 1950 and 1960, and is continuing to rise. Covered payrolls, the base for financing pension commitments, moreover, showed no net increase between 1950 and 1965. Meanwhile, the pension rolls, including retirement, disability, and survivors benefits, skyrocketed as follows:

By the 1960's, therefore, the number of beneficiaries (which includes survivors) began to exceed the number of covered employees, and this condition is likely to continue. Given stable payrolls, the system obviously had to increase the contribution rate sharply to meet the doubling of benefits between 1955 and 1965 (see table II–1) or draw upon the trust fund at a substantial rate. This fund, after reaching $3,374 million in 1954, has grown slowly to $3,946 million at the end of 1965 and cannot support a large excess of benefit payments over receipts. The Railroad Retirement Act Amendments of 1966, in addition to increasing benefits, introduced a tax of 2 cents per hour on employers to cover the current cost of a temporary supplemental program. The regular combined tax rates on employees and employers exclusive of the cost of hospital insurance, became 15.2 percent in 1966 and are scheduled to rise to 19.2 percent by 1973. Even this schedule is estimated by the actuaries to be insufficient to meet promised benefits.

While this industrywide program is not typical, it illustrates the problems of a social insurance system when the vitality and growth of the economic activity involved begin to erode. The consequences of failing to make provision in previous decades for accruing retirement costs are also evident. It is apparent that railroad employees and the public as consumers of rail transportation services will continue to be the source of growing transfers of income to retired workers and their dependents for many years to come. Since air transportation companies currently provide for full pension costs, their competitive cost position will be enhanced in the future, relative to rail transportation. Thus, the mechanism for handling retirement income payments may have marginal effects upon the allocation of resources among competing forms of transportation.

FEDERAL EMPLOYEE RETIREMENT SYSTEMS

The Federal Civil Service Retirement System was intended to be fully funded, but Government contributions have lagged far behind the accrual of benefit costs. The appropriation of additional funds by the Congress to meet full costs apparently ranks low in the order of priorities, in the absence of more serious concern among employees about the fulfillment of the Federal Government's pension commit-

ments. As a consequence of past and present practices, the accumulation of funds in the Civil Service Retirement Fund has been as shown below.

Year	*Assets (millions)*
1940	$634
1945	2,182
1950	4,202
1955	6,477
1960	10,480
1965	15,981

Source: *Social Security Bulletin.*

By mid-1966, the unfunded liability of the system was more than two and one-half times the size of the trust fund and is continuing to grow even without taking into account the possible increase arising from the cost-of-living adjustment factor.

The trend toward a rising ratio of benefit payments to contributions shown in table II–2 suggests that the accumulation of funds will slow in the years ahead as benefit payments continue to climb.

Other Federal employee retirement plans are largely supported from general revenues. One of the major programs of this type is for career military personnel. Benefits will be rising especially rapidly during the next decade, reflecting the large number of entrants into the armed services in the early 1940's, who will be retiring. The practice of adjusting retired pay to new scales adopted for those on active duty is an additional factor stimulating the growth of benefits. If we assume that current compensation to members of the Armed Forces is lower by reason of the retirement benefits, especially those relating to early retirement, it is evident that the cost of the military establishment is materially underestimated by the failure to recognize the cost of future pension commitments as incurred.

The mounting claim on future general revenues is a substantial one. On certain assumptions as to the levels of active-duty compensation, the benefits could rise from $1.6 billion a year in 1966 to $6.0 billion in 1980. The accrued but unrecognized costs to date probably exceed $60 billion, but the actual amount of the commitment is difficult to determine. The variables include the number of career officers and enlisted men, the future pattern of total compensation, and early-retirement provisions. Some estimates suggest that the cost could rise from the current rate of almost 10 percent of total military pay and allowances to 25 percent by 1980.

VETERANS' PENSIONS AND OLD-AGE ASSISTANCE

Permanent disability and pension benefits are, in effect, interchangeable for the 3.2 million veterans and 1.9 million survivors receiving $4.2 billion of benefits in 1965. The future growth will tend to occur in the payments to veterans over 65 years of age with non-service-connected disability. Obviously, the size and scope of the program will be determined in the future. Presumably the extensive coverage of social security is meeting a part of the problems of older veterans with limited incomes, and this fact may moderate demands for pensions involving a means test.

The economic effects of veterans' disability benefits are not significantly different from old-age assistance. Both are supported from general revenues and are displaced to some extent by OASDI benefits. By early 1966, over 48 percent of old-age assistance recipients were receiving OASDI benefits. The proportion of the population over age 65 receiving old-age assistance has continued to fall from 22 percent, in 1950, to about 11 percent as the proportion receiving social security benefits has increased from 17 percent to almost 80 percent.

The displacement of old-age assistance by OASDI has, therefore, proceeded at an orderly pace, yet special problems and individual cases will undoubtedly require the continuation of old-age assistance. In 1964, 17 percent of all workers awarded retirement benefits received monthly amounts in the range of $32 to $40, and a similar proportion of all retired-worker benefits being paid were at or below the $40 minimum then in effect. Earlier studies indicated that about one-fourth of those receiving minimum benefits were recipients of public assistance.[4]

Lack of recent covered employment and very low covered earnings accounts for individuals receiving minimum benefits, with farmworkers representing a disproportionate fraction of the cases. The continued displacement of old-age assistance by OASDI depends upon providing employment opportunities at minimum wage levels for more men and women of working age, especially among the nonwhite population. If a vigorously growing economy can make equality of productive job opportunities a reality and can improve the preparation of individuals to hold such jobs, OASDI is well designed to perform its function. Because the benefits are wage-related, they improve rapidly as the individual gains regularity of employment at prevailing wage rates.

A sustained high level of employment and programs to improve the skills of potentially employable individuals would, therefore, gradually reduce the need for old-age assistance. However, future progress cannot retroactively raise the low covered earnings records of individuals now becoming eligible for benefits. If all goes well, we should expect old-age assistance benefits to continue to grow in absolute amounts but at decreasing rates, as in the 1960–65 period.

STATE AND LOCAL GOVERNMENT RETIREMENT SYSTEMS

Rapidly growing retirement systems of State and local governments represent one of the most dynamic elements in the entire pension structure. A measure of the growth, the total wage bill for employees covered by retirement plans, increased from $8 billion in 1950 to $32.2 billion in 1965. The compound annual rate of increase was 9.7 percent, compared with 6.8 percent for the similar Federal civil service payrolls.[5] Holland's projections assume a 4.7 percent per annum growth in employment over the next 10 or 15 years, which is close to the rate of growth during the 1950's and early 1960's.

Not only is employment growing rapidly but pension coverage of full-time employment is at an extremely high 95 percent. The promised benefits are relatively liberal, and the widespread (but not uni-

[4] Lenore A. Epstein, "Workers Entitled to Minimum Retirement Benefits Under OASDHI," *Social Security Bulletin*, March 1967, pp. 3–13.
[5] *Social Security Bulletin*, Statistical Supplement, 1965.

versal) practice of systematically funding them through a broad range of financial assets makes State and local government retirement systems substantially similar to private plans in their impact on the capital markets. The salient features of their past and projected growth are shown in table II–4.

TABLE II–4.—PAST AND PROJECTED GROWTH OF STATE AND LOCAL GOVERNMENT RETIREMENT SYSTEMS, 1940–80

	1940	1945	1950	1955	1960	1965	1970	1975	1980
Covered employees (million)	1.4	1.8	2.6	3.5	4.5	5.8	7.6	9.6	12.2
Beneficiaries (million)	.2	.2	.3	.4	.7	.9	.9	1.1	1.3
Benefit payments (billions of dollars)	.1	.2	.3	.6	1.1	1.8	2.0	2.6	3.4
Retirement system assets (billions of dollars)	1.6	2.5	5.2	10.6	19.7	33.6	50.7	76.9	114.9

Source: 1940–65, actual from Social Security Administration and Bureau of the Census; 1970–80, from Holland's projections adjusted to calendar years.

These retirement systems are significantly different from the other tax-supported programs. Substantial saving through the acquisition of financial assets is involved in the relatively high rate of funding in progress and in prospect. Additions to fund assets were 10.5 percent of covered payrolls in 1965 compared with about 7.4 percent for the Federal Civil Service Retirement System.

The most significant feature of the State and local government retirement systems is that they are still relatively young and, according to Holland's projections, show no signs of reaching by 1980 that stage in the maturing process when benefit payments are a high proportion of current contributions. That is to say, these programs over the future will make an increasing contribution to personal saving and to capital market flows. If the projected growth in State and local government employment materializes, these retirement systems will emerge as a major financial institution with vigorous growth and influence in the resource allocation process.

A comparison with Holland's projections for private employee pension programs, discussed below, will serve to illustrate the vigor of this growth.

COMPOUND ANNUAL RATES OF GROWTH

[In percent]

	1940–60		1960–80	
	State and local government	Private employee	State and local government	Private employee
Covered employees	6.0	8.6	5.1	3.4
Beneficiaries	6.5	11.6	3.1	7.7
Benefit payments	12.7	15.5	5.8	9.3
Fund assets	13.4	16.6	9.2	6.8

Source: Tables II–4 and II–5. Growth rates are approximate for the 1940–60 period because they are based on rough estimates for the early years for private plans.

Relative to programs covering individuals in private employment, this comparison suggests that a more rapid growth in coverage, combined with a slower rate of growth in beneficiaries and payments to them, will enable the State and local government retirement systems to sustain the higher growth rate in asset holdings which first became apparent in the early 1960's.

PRIVATE PENSION PLANS

The development of private pension programs by business firms, labor unions, and nonprofit organizations has been especially rapid since 1940. Holland's projections are shown in table II–5; they illustrate the extent of the possible maturing of private plans by 1980. The preceding comparison of the principal indicators of growth projected for the 1960–80 period with the record of the preceding 20 years shows evidence of the maturing process. Possibly this comparison overstates the case. Holland took no account of retirement plans for the self-employed and their employees, which may begin to grow from a very small base over the next decade. Annual contributions to such plans in excess of $1 billion might be attained by 1975.[6]

TABLE II–5.—PAST AND PROTECTED GROWTH OF PRIVATE PENSION PLANS, 1940–80

	1940	1945	1950	1955	1960	1965	1970	1975	1980
Covered employees (million)	4.1	6.4	9.8	15.4	21.2	25.4	32.6	37.2	41.4
Beneficiaries (million)	.2	.3	.5	1.0	1.8	2.8	4.1	6.0	8.0
Benefit payments (billions of dollars)	.1	.2	.4	.8	1.8	3.2	4.7	7.3	10.6
Fund assets (billions of dollars)	2.4	5.4	12.0	27.4	52.0	85.4	116.9	155.2	193.1

Note: Because of instances of coverage under more than 1 plan, it is believed that coverage data for 1965 and previous years may overstate the number of covered employees. See Walter W. Kolodrubetz, "Growth in Employee-Benefit Plans, 1950–65," Social Security Bulletin, April 1967, pp. 10–27.

Source: 1940–65, actual from Institute of Life Insurance, Social Security Administration, and author's estimates; 1970–80, from Holland's projections.

The projected slowdown in the rate of growth of coverage reflects the fact that a high proportion of potentially eligible employees has already been included. Of all employees on nonagricultural payrolls, excluding government, 47.1 percent had been covered by the end of 1960, compared with only 25.0 percent at the end of 1950. If this group of employees is further reduced to exclude part-time workers and young workers (under age 25), the coverage ratio approximated 65 percent in 1960. High coverage already prevails in transportation, public utilities, finance and insurance, mining, and many sectors of manufacturing. In short, the large groups most readily covered by group plans have already been included. Future extensions of coverage will have to come increasingly from multiemployer and other plans designed to accommodate small employers and small groups of employees.[7]

In addition to this "saturation" factor, trends over the years in pension arrangements have caused some shift of individuals from coverage in active employment to beneficiary status. Increased disability coverage, earlier vesting, greater use of the normal retirement age as a mandatory retirement age, and considerable liberalization of the provisions governing early retirement have been among the major developments.[8] The effect has been to accelerate the maturing of these programs for individuals in private employment.

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[6] This estimate is based on studies made by the author, for testimony before the Committee on Finance of the U.S. Senate, regarding the Self-Employed Individuals' Retirement Act. See *Hearings on H.R. 10, 86th Congress, 1st sess.*, June 18, 1959, pp. 210–215 and *Hearings on H.R. 10, 87th Congress, 1st sess.*, July 28, 1961, pp. 144–152.

[7] See Holland's projections, ch. 2.

[8] See Bankers Trust Co., *1965 Study of Industrial Retirement Plans*, for an analysis of recent trends.

Since all employees covered under private plans are covered under social security, the future role of OASDI will obviously affect these supplementary arrangements. Flat-benefit plans, which provide a fixed monthly pension for each year of credited service and which are most common among multiemployer and union plans, are not influenced by increases in social security benefits, except as employees may lose interest in bargaining for higher supplements. This has not occurred to date because the supplementary benefits started at low levels. At some point, of course, priority might be given to other elements of total compensation.

In the more typical wage-and-service-related benefit formula characteristic of single-employer plans, the social security benefit is taken into account in determining an attainable objective as to the replacement of some fraction of final compensation. This form of integration with OASDI implies that a higher proportion of compensation above the amount creditable for social security will be replaced by the supplementary plan. The individual's salary progression and the trend of wages and salaries generally will, therefore, have an important influence on the promised retirement income, especially with the trend toward basing pensions on final average compensation.

The general assumption underlying Holland's projections is that social security benefits will be increased in the future at about the same pace as in the past. A shift from a "floor of protection" to a "level of adequacy" concept in the determination of OASDI benefits could, therefore, have a pronounced effect upon the projections used in this study: benefit payments might still follow the pattern outlined in table II–4, since they relate to commitments already made, while contributions and fund accumulations would not show the expected rate of growth during the later years of the period.

There are other factors currently at work, however, which could sustain a larger excess of contributions over benefits for a longer period of years than Holland has projected. The most important single influence in this direction might be an acceleration in the pace of increases in money wages combined with the trend toward relating benefits to final average compensation. In addition, the inclusion of larger death, disability, survivor, and early retirement benefits in pension arrangements is causing increases in contribution rates. Eventually these trends have the effect of increasing benefit payments, of course, but in the interim the pace of the maturing proceess is slowed.

The dynamic evolution of pension arrangements during the next decade cannot be plotted with precision. However, the accuracy of projections is not crucial to the analysis of economic effects. The direction and rates of change of income and saving flows are the important elements, rather than the timing of their incidence.

THE PENSION STRUCTURE IN PERSPECTIVE

The preceding review of salient characteristics of the public and private pension structure in being and in evolution suggests certain summary observations:

1. We have come to a pause in the creation of new types of programs and attention is being devoted primarily to refining, strengthening, and generally improving their operations.

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2. During the next decade, the flow of annual benefit payments could increase by at least 60 percent, just from existing programs. A 100-percent increase is more likely. In the latter event, benefit payments would represent perhaps 7.6 percent of personal income, compared with 6.4 percent in 1965.

3. The irreversible nature of retirement income commitments running far into the future means that we are issuing claims on goods and services to be produced in the future at a rate substantially in excess of the prospective rate of growth in real output.

4. The full implications of this structure of costs and benefits for the distribution of income, consumption and saving, and the functioning of the capital markets need further exploration. (These are the topics of succeeding chapters.)

Systematic efforts, on a group basis, to spread income over the latter segment of the lifespan, instead of merely over the working years, obviously call for a complicated machinery if they are to be broadly inclusive of a mobile, diverse population, like that of the United States. The coordination and integration of various programs have made excellent progress at the level of specific benefit formulas. Can they be related to broad economic objectives as well? Can we establish a more effective framework for the analysis and appraisal of the economic effects of the decisions we are about to make regarding the future structure of pension arrangements?

III. Pension Programs, the Redistribution of Income, and Saving

The preceding chapter's overview of the characteristics and financing of pension programs highlighted the past, present, and potential future aggregate flows of income which the programs generate. We examined the development of a network of arrangements designed to transfer income (goods and services in real terms) to individuals no longer in the work force. This income is transferred from other individuals, of course, in a variety of ways. This process and its possible economic effects are the subject of this chapter.

PUBLIC PROGRAMS

The Primary Role of OASDI

As we have seen, the major factor in the current and future collection of receipts and distribution of benefits is the Old-Age, Survivors, and Disability Insurance System. A possible effect of creating these expectations of old-age and survivor benefits is that individuals would save less in other forms. That is, they would substitute the accumulation of claims against the system for other financial or tangible assets. Because coverage has become so close to universal, it is not possible to test this possibility by comparing the saving behavior of large groups of people not covered by OASDI with those who are covered.

In chapter IV, below, we deal systematically with the question of the impact of other accumulations of pension claims on aggregate saving. This is done by examining the saving behavior of households similar, in most characteristics, except coverage under a plan which supplements OASDI. In the absence of a similar approach to deter-

mining the effect of OASDI coverage on saving in other forms, we turn to the reasoning developed by Cagan and Katona as discussed in chapter IV.

In essence, their hypothesis is that the promise of some minimum level of income in old age stimulates motivation to supplement it in other forms. These forms have included supplemental pension plans, life insurance, and liquid-asset holdings. It is common practice, for example, for life insurance agents to provide information about OASDI benefits to prospective purchasers of their policies. This approach succeeds because the agent can present a program for improving the adequacy of financial security to be built upon a base which already exists. This is similar to the experience with life insurance provided to members of the Armed Forces; on balance, it has encouraged the sale of policies by agency companies.

The evidence summarized in chapter IV supports the view that the creation of equities in the OASDI system has not served as a substitute for saving in other forms. Widely expressed fears that individuals would lose their incentive to save if this comprehensive protection were provided have proved to be without foundation. However, the limitations of the body of evidence on saving behavior should be kept in mind. To be more precise in describing experience since the adoption of OASDI, we should state the conclusion in these terms: tection against the hazards of old age, disability, and death, the record shows that it has been a stimulus to other individual and group programs to serve the same ends.

2. The increases in OASDI benefits have not kept pace with improvements in real living standards. To date, the program has not provided an increasing share of total old-age income objectives.

3. We have no body of assembled evidence, therefore, as to what would be the effect upon saving in other forms of achieving a goal of "adequacy" as it might be defined in relation to some widely accepted concept of living standards.

Robert M. Ball, the Commissioner of Social Security, urges that we consider social security rather as a retirement system than as an antipoverty program, pointing out that it is the only retirement system for 80 percent of the beneficiaries. He argues that a test of adequacy is relevant and timely.[1] Similarly, the President's 1967 budget message discusses proposed changes in benefits in terms of adequacy.

From what we know about the saving function of individuals, it is impossible to specify the level at which prospective benefits cease to stimulate saving in other forms and begin to inhibit it. The type of analysis made by Cagan is a contribution to the search for reliable evidence, but does not suggest answers which would necessarily be applicable to a program of the size and scope of OASDI. Revisions of a universally applicable system can be expected to change the attitudes and expectations of a whole society.

Nevertheless, it is essential that this question be studied so that, if decisions to move toward a concept of adequacy are made, their consequences for saving in the economy may be taken into account. This is not to say that economic factors should control. After all, fiscal policy

[1] Robert M. Ball, "Policy Issues in Social Security," *Social Security Bulletin*, June 1966, pp. 3–9.

could be modified to offset the effects of changes in OASDI if the possible effects were known and recognized. Changing the balance of saving and investment in the economy without analysis of the long-range consequences will not contribute effectively to the attainment of living standard goals for citizens of all ages and circumstances.

The possible effects on saving habits of changing retirement income expectations is, however, only one aspect of the operation of OASDI. It may be the most significant aspect, but it relates only to the matter of saving motivation. The other major economic aspect of the system is its role as a collector of taxes and as a simultaneous distributor of benefits. The growing volume of transfer payments can have important economic effects on a current basis.

Early in our research program, John J. Carroll undertook a thorough exploration of the possible effects of the whole range of tax-supported programs.[2] Such analysis depends upon a host of assumptions about the shifting and incidence of taxes, the consumption function, and consequences of changes in the distribution of income.

For example, Carroll assumed that the employee's share of the payroll tax is not shifted at all, but that the employer's share is shifted to the extent of two-thirds forward to the consumer and one-third backward to the employee.[3] For the benchmark year 1957, families with incomes below $4,000 were estimated to have contributed about 25 percent of the payroll taxes and to have received about 75 percent of the benefits. The net gain to the lower income groups represented about 52 percent of the benefit payments. The transfers were largely from the middle-income groups.

There figures are illustrative of the power of the OASDI system in redistributing income, whether or not they measure the magnitude precisely. If we make the usual assumption that the marginal propensity to consume of families receiving benefits is materially higher than that of those bearing the costs of the program, we can conclude that the result is in the direction of an increase in consumption and a reduction in saving. The calculation of transfers between income brackets is obviously more reliable than estimates of the impact on consumption and saving. In the latter case, we have to estimate family expenditure patterns, not just their income levels.

Carroll's analysis uncovered many gaps in the availability of reliable current information. Some of these gaps are being filled by the Social Security Administration and other agencies. It is not altogether visionary to expect that in the future we shall be able to consider revisions in the OASDI tax and benefit structure from three points of view: (1) The level of benefits in the light of changing living costs and standards, (2) the actuarial balance between receipts and benefits over the visible future, and (3) the effects of the projected redistribution of income on consumption and saving.

The same type of analysis is also relevant to choices between increases in the tax rate and increases in the maximum earnings base

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[2] The methodology employed in dealing with OASDI was developed in his monograph *Alternative Methods of Financing Old-Age, Survivors, and Disability Insurance,* Michigan Governmental Studies No. 38, Institute of Public Administration, 1960. The results of the National Bureau analysis were presented to the Advisory Committee for comment in the form of "Some Notes on the Redistributional Effects of Mandated Pension Programs" and are the basis for the relevant analysis in this chapter.

[3] The effects of alternate assumptions on the shifting and incidence of the payroll tax were also calculated.

to which it is applied. There are a number of considerations in making such choices other than the extent of income redistribution involved, yet, surely, this is relevant to the comprehensive design of the overall tax and expenditure policies of the Federal Government.[4]

Apart from the redistribution of income between income classes, social security transfers claims for goods and services from one age group to another. The productively employed meet the cost of benefits to those no longer at work. When the level of benefits is improved and taxes increased, the young worker may be paying more than the cost of his prospective benefits. Some students of the system argue that this will ultimately create dissatisfaction on the part of those most important in raising productivity. Of course, the young workers may rest content with the notion that their turn to enjoy improved benefits will come eventually. Or they may be amenable to an erosion of the real value of old-age income promises by inflation as a means of lightening the impact of the transfers. While such questions undoubtedly have some substance, it is by no means clear that these are additional considerations not already taken into account in the spending and saving decisions of the individuals concerned.

Other Contributory Government Programs

The other major contributory governmental programs are Railroad Retirement, Federal Civil Service, and State and local government retirement systems. Compared with OASDI, Carroll found that for the benchmark year 1957 a smaller fraction of contributions to these programs (9 to 13 percent) was attributable to the lower income groups and a somewhat smaller proportion of the benefits paid out (60 percent). The actual net transfers to families with incomes less than $4,000 were very modest, however, because of the low level of benefit payments relative to contributions in the Federal, State, and local government employee systems.

Because of the surplus from their current operations, the Federal Civil Service and State and local government retirement systems provided a net increase in saving after giving effect to the stimulus to consumption of the transfers to lower income families with higher marginal propensities to consume. In these tax-supported programs, we can see the effects upon saving and the capital markets of the funding process at work simultaneously with the redistributing of income.

Noncontributory Government Programs

Of the two major noncontributory programs supported by general revenue taxation, veterans' benefits and old-age assistance, the latter is the more effective in the redistribution of income. With tax collections distributed across all income groups and benefits allocated to the lowest income families, it is evident that this program will stimulate consumption, precisely as it is intended to do.

Veterans' benefits are heavily concentrated among lower income families, but a portion of the service-connected disability payments go to middle and upper middle income families. Carroll found reliable data particularly difficult to assemble in this section of his analysis and his estimates are, therefore, tentative.

[4] The long-range research program of the Social Security Administration includes most of the topics mentioned here.

For the benchmark year 1957, these two noncontributory programs generated net transfers to families with less than $4,000 incomes on a substantial scale. The gain to these lower income groups was almost as great as that of OASDI, despite the fact that benefit payments were only 60 percent as large. Shifting individuals from old-age assistance to the social security benefit rolls or making the corresponding substitution of benefits, then, reduces the income redistribution effects and marginally reduces the shift from saving to consumption. Because these noncontributory programs are supported from general revenues, a major share of the cost is borne by upper middle income and high income groups.

Public Programs as a Whole

Looking at the gain-loss pattern of the six types of tax-supported pension programs mentioned above, Carroll found that families with incomes of less than $4,000 received about $8 billion in 1957 in the form of transfers from families whose incomes exceeded that level. Of this figure, $5.3 billion went to families with incomes under $2,000 per year. The estimated resulting net increase in consumption expenditures was $1.3 billion.[5]

These figures are cited merely to provide an indication of the direction and magnitude of income redistribution effects. The growth in the economy and in the scale of the tax-supported programs requires a complete reexamination of the whole subject. Subsequent research and the development of better data about beneficiaries should make possible greater precision in the definition of current alterations in the pattern of income distribution, spending, and saving.

Much more important, however, is the need for developing the data and related models to permit a simulation of the future economic effects of alternative decisions regarding the financing and benefit structure of tax-supported pension programs. Carroll's pilot study of redistributive effects suggests that in the future the growing level of public-plan operations, apart from State and local government retirement systems, will generate a substantial offset to that saving which is done through private plans. This is especially true of the Federal noncontributory programs. Rational decisionmaking in this area requires that we develop the data and techniques to verify and measure these possible developments on a prospective basis.

PRIVATE PROGRAMS

The Saving Aspect

The growth of pension programs for individuals in private employment has been so spectacular since 1940 that attention has been concentrated primarily on the growth in coverage and fund accumulations, a veritable explosion in pension expectations. The response of individuals, as will be shown in chapter IV, has been to add their growing equities in private pension plans to saving in other forms.

Taking net fund accumulations exclusive of capital gains as the

[5] These figures for 1957 have little current significance, but they provide some measure of the impact on saving of these programs at a specific point in time. The results are not alarming, but the direction of the effects is clear.

measure of saving through private pension plans, the past and projected trend in this form of saving is shown below.

Addition to Fund Assets

Year	Billions
1950	$1.8
1955	3.6
1960	5.3
1965	7.6
1970	7.5
1975	7.6
1980	7.4

Source: Institute of Life Insurance, Securities and Exchange Commission, and Holland's projections for 1970–80.

These figures are designed to reflect changes in book values without taking account of realized and unrealized capital gains on common stocks and other investments with equity characteristics. They do not recognize, therefore, the addition to assets represented by the equity in corporate retained savings. This is another way of saying that the earnings on fund accumulations are substantially understated. In chapter V, we attempt to recognize this factor, which became of major significance after 1955, in projecting possible future asset accumulations.

If full recognition were given to appreciation in equity investments at an arbitrary 5-percent rate, the changes in fund accumulations at market values might be more like $9, $10, $13, and $15 billion for 1965, 1970, 1975, and 1980. However, if these high returns are realized, there might well be a reduction in contributions because of the earlier achievement of substantially full funding, an increase of benefits, or a combination of the two. In that event, these higher projected levels of saving through private plans based on the recognition of market values would not be realized.

On balance, the trends suggest that the contribution to aggregate saving of these programs for individuals in private employment will be reaching a peak in another decade or so. The implications for capital formation and the capital markets are discussed in chapter V.

Transfers: The Contribution Aspect

A measure of the dynamic growth in private arrangements is the increase in contributions. The record of the recent past and Holland's projections are as follows:

Contributions

Year	Billions
1950	$2.1
1955	3.8
1960	5.5
1965	7.8
1970	8.1
1975	9.3
1980	10.3

Despite the growth of collectively bargained plans, which are rarely contributory, and a gradual reduction in the proportion of conventional plans requiring employee contributions, the fraction of total contributions provided by the employer has apparently remained

stable at 86 percent for the past decade. One dollar of contributions in eight, therefore, represents a form of individual saving by the employee directly analogous to saving through life insurance or any other medium.

The interest earnings of the funds represent a return for currently setting aside the discounted cost of benefits payable in the future. These earnings are presumably shared by the employee and the employer approximately in proportion to their contributions. The fact that the earnings are not taxed gives them full value.

It is more difficult to determine the cost incidence of the employer contribution. It is a part of total employment costs which may be recovered in part by the individual firm if (1) the plan serves to attract more productive employees; (2) it reduces turnover, training expenses, accidents, and spoilage; and (3) it provides for orderly retirement and promotions as a part of more efficient personnel management.

If the employer cost merely substitutes for other forms of compensation, it has been shifted backward to the employee. The incidence is not necessarily either equal or proportionate among individual employees. This shift can take the form of a slower increase in money wages relative to productivity gains. Collective bargaining over a total pay package appears to accept this concept, with pension and other fringe benefits substituted for or added to pay increases in cents per hour. The well-paid and highly paid employee with long service may welcome this bargaining emphasis. The employer's larger contribution for a more liberal pension benefit is not taxed to the employee currently as income; the tax impact is deferred until retirement, when his effective tax rate will be significantly lower. Within limits, the marginal dollar of employer contribution to pension benefits is worth more to the employee than the incremental dollar of money wages added to his own retirement savings.

A different situation may exist, however, when a pattern plan is negotiated throughout a major industry without regard to productivity gains. Depending upon product demand elasticities, a price rise to recover this added cost may cause a decline in output and employment or a shift from the utilization of labor to other factors of production. The net effects may be extremely difficult to trace. They obviously depend upon the economic environment and other influences at work in the economy at the time.[6]

It appears that the shifting and incidence of the employer's cost will vary with the characteristics of the industry and the firm within it. There is no clear answer to the question but only a limitless array of specific cases. Perhaps the best general conclusion we can reach is that the net cost is probably shifted both forward and backward, with a longrun reduction in corporate profits, and, therefore, corporate saving, taking place only in marginal instances.

Another "contribution" to private pension programs is the favorable income tax treatment given to employer contributions and fund earn-

[6] For a searching discussion of the various possibilities, see Challis A. Hall, Jr., "Retirement Contributions, the Spending Stream, and Growth." *Federal Tax Policy for Economic Growth and Stability*, papers submitted by panelists appearing before the Subcommittee on Tax Policy of the Joint Committee on the Economic Report, November 1955, pp. 786–797. I am indebted to Dr. Thomas E. White for his analysis of the elements of this problem during his participation in the pension research project.

ings. The Office of Tax Analysis of the U.S. Treasury Department made the estimates for the year 1963 shown below.

	Millions
Revenue gain from taxation of benefits received in excess of employee contributions after the retirement income credit	+$325
Revenue loss from exemption of interest earnings of pension funds at individual tax rates	—550
Revenue loss from not taxing to employees employer contributions as made	—1,150
Net revenue loss	—1,375

Source: *Private Pension Plans*, hearings before the Subcommitee on Fiscal Policy of the Joint Economic Committee, 89th Cong., 2d sess., p. 2, May 1966, p. 416.

Other factors equal, this treatment of qualified pension plans will increase the revenues to be collected from taxpayers in general. Presumably, those not covered by pension arrangements share in the costs without sharing in the benefits. These tax benefits are, of course, equally applicable to the retirement systems for Government employees. Also, in the case of OASDI, all of the benefit payments are exempt from taxation, with the result that there is no deferred recovery of income taxes from the recipients.[7]

Transfers: The Benefit Aspect

The most dynamic phase of the growth in private programs is the current and prospective increase in the flow of benefit payments. The record of the recent past and Holland's projections show this trend:

	Benefits
Year	*Billions*
1950	$0.4
1955	.8
1960	1.8
1965	3.2
1970	4.7
1975	7.3
1980	10.6

The bulk of private pension benefits, almost by definition, go to individuals who have had regular employment for an extended period at good levels of compensation. Also, the benefit structure is moderately progressive (i.e., providing a higher proportion of higher compensation) to counterbalance the reverse pattern of OASI. A recent large sample of industrial plans shows the typical range for the growing proportion of final pay plans:

Average Annual Compensation During Final Years of Service	*Median Benefit Range Exclusive of OASI*
Dollars	*Percent*
4,500	26–30
8,000	31–35
15,000	31–35
35,000	36–40

Source: Bankers Trust Company, *1965 Study of Industrial Retirement Plans.*

Since we are uncertain about the incidence of contributions, it is not feasible to estimate a redistribution of income between family income

[7] A possible change in this treatment of benefits is under discussion. An anomaly in the present method of tax treatment is the increase in the value of the benefits to an individual with substantial other income in retirement.

classes as a result of transfers through private pension programs. We may suspect that the redistributive effects are less than in the case of State and local government retirement systems, but how much less is open to question.

Some insight into the distribution of beneficiaries by income class can be gleaned from the *Statistics of Income*. Federal income tax returns for 1964, on which at least one taxpayer was 65 or older, show the following reported income from pensions and annuities (taxable portion):

Adjusted gross income classes	Number of returns		Taxable income reported	
	Thousands	Percent of total	Millions of dollars	Percent of total
Under $5,000	918	69.7	1,369	57.2
$5,000 to $9,999	260	19.7	581	24.3
$10,000 or more	140	10.6	444	18.5
Total	1,318	100.0	2,394	100.0

Source: Internal Revenue Service, "Statistics of Income, 1964, Individual Income Tax Returns," publication 79, January 1967, p. 90.

Presumably, a large number of individuals had small benefits but were not required to file returns.

These data do not distinguish the source of the pension or annuity income, but they suggest that the benefits in a recent year went predominantly to middle-income family units. Private plans could not have had a materially different pattern from the public programs also included.

If employer contributions are largely shifted, and at least in part to employees, it would appear that the effects of transfers between income brackets work moderately in the direction of increasing consumption, but at least for the present the impact cannot be substantial.

PENSION PROGRAMS AS A WHOLE

Our exploration of the redistributive effects of the whole range of public and private pension programs has produced only tentative conclusions. It has uncovered gaps in information which our resources could not hope to remedy. The fruitfulness of further research and information gathering about family incomes and budgets is evident. The intelligent appraisal of alternative programs requires that this type of research be pursued with the aid of improved information and techniques of analysis.

The present and prospective transfers of income between age groups are more easily measured. In a sense, they represent the degree of success which has been achieved by the pension structure. For these claims to be honored in full in real terms, individuals must surrender a portion of current output either in exchange for promises of benefits in the future or in payment of tax assessments. That is to say, workers during their active years, on the whole, defer consumption to their years of retirement. In programs covering large groups, it is almost certain that the present value of the future benefits to individual participants will be somewhat greater or less than the consumption they forgo in the

present. Such individual gains and losses will be minimized, however, if the benefit formula is equitable and the plan has been in effect for an extended period.

Under a pension plan in the design of which individuals have had an opportunity to express their views, that is, a voluntary or negotiated plan, this kind of arrangement appears to involve no special burden on the individual participant. While the saving feature may be compulsory and the utility of retirement income may vary between individuals depending upon their preferences and expectations, the burden of participation in a plan characterized by equity and uniformity is not material.[8]

Wage- and service-related benefit plans covering individuals in public and private employment, therefore, do not involve significant burdens.

Tax-supported old-age benefits, on the other hand, involve the burdens characteristic of any element of the revenue gathering and distributing structure. The transfers between income brackets which social insurance is designed to make set up pattern of gains to those who earned less and losses to those who earned more during their years of active employment. But, this is no special characteristic of pension arrangements; it is common to almost all segments of the tax structure which involve the redistribution of income among income classes and age groups.

There is evidence to the effect that a program involving greater income redistribution creates greater resistance to that program on the part of those bearing the burden of the transfers. In a study of social security systems around the world, Henry Aaron found that countries relying more heavily on general revenues tend to spend less on social security in proportion to national income than countries relying more heavily on payroll taxes to finance benefits.[9]

The gain-loss patterns of social security, veterans' benefits, and old-age assistance, however, cannot be considered apart from the whole structure of transfers involved in the fiscal operations of governmental units. The income redistribution effected by pension arrangements must be examined in the context of the redistribution effected by the personal income tax, excise taxes, or estate and gift taxation. Moreover, it should be noted that to some extent social security programs merely replace voluntary and intrafamily transfers in favor of the aged. The substitution of tax burdens for the individual's own perception of his obligation to an aged or disabled person represents, therefore, a change only in the form of the burden on the active worker.

We conclude that the structure of public and private pensions involves no special burdens which are not characteristic of any broad scale of income transfers over time and across a population enjoying a wide range of incomes and living standards.[10] We also conclude that

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[8] This conclusion does not ignore the reality of possible income transfers from younger to older workers, from men to women, from transient to career employees, and among individuals in different income classes.

[9] Henry Aaron, "Social Security: International Comparisons," in Otto Eckstein, ed., *Studies in the Economics of Income Maintenance*, Washington, 1967, pp. 28–29.

[10] For closely reasoned discussion of this question of burdens, see Daniel M. Holland, "The Pension Structure," *Federal Expenditure Policy for Economic Growth and Stability*, Joint Economic Committee, U.S. Congress, Nov. 5, 1957, pp. 1007–1009.

less burden is involved for individuals in a collective sense when the full cost of benefits is recognized currently and the excess of future over current costs is funded according to a systematic program. The reasoning runs as follows:

1. The excess of current contributions over current benefit payment; that is, pension saving, finances capital formation. As a result, productivity gains are greater than would otherwise be the case.

2. As the pension system matures, or comes closer to maturity, the increasing transfers of output to beneficiaries are made from a larger total output. The fraction of the current output transferred from active to retired workers is, therefore, a smaller and less burdensome one.

3. If a cohort of workers over their active working years saves the capital accumulation and the earnings on it to enlarge total output sufficiently to generate the goods and services which will satisfy their claims in retirement, it has placed minimal burdens on other workers.

However, this line or reasoning is based on a series of assumptions which are probably not equally valid. In the first place, it is assumed that investment will expand to absorb the full addition to savings at full-employment levels of output. A study by Simon Kuznets supports this assumption.[11]

Second, it is assumed that benefits are in a fixed relationship to past savings. This is surely not entirely valid. In fact, we know that economic growth and rising living standards will be accompanied by improvements in the level of benefits, involving a supplemental transfer of current output from the working to the retired group. However, if inflation erodes the real value of money claims, the price rise will partially offset this supplemental transfer process.

In summary, the maturing process never ends in a growing economy. There is a rising level of aspirations which results in transfers to retired workers in excess of what they have contributed through pension saving. Our reasoning, therefore, is that the burden of pension benefits is lessened when they are provided at least in part from additions to saving which has been employed in incremental capital formation to expand real output. This should be true on the average for individual burdens and for the burden on productivity of the economy as a whole. One of the conditions promoting this result is a minimal effect on the incentives of those engaged in production.

Pay-as-you-go arrangements and those which use the taxing power of Government to make transfers of income are, in this sense, the most burdensome pension program since they entail no contribution to capital formation.[12] We should be cautious about reaching fixed conclusions on these matters. Within broad limits, the tolerance levels of individuals to accepting burdens and limitations of their expenditure decisions are not fixed for all time. We know that people can and do adjust to all kinds of circumstances, including burdens. This process takes

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[11] *Capital in the American Economy: Its Formation and Financing,* Princeton University Press for NBER, 1961.

[12] Pay-as-you-go plans of industrial organizations or of Government, of course, need not be more burdensome in every case. Contributions not made to fund future costs may be directly invested to produce future productivity gains from which rising benefit payments can be met. The after-tax return from these direct investments must be persistenly high relative to the cost of capital from other sources to make pay-as-you-go programs less burdensome than those which are systematically funded.

place slowly and is greatly aided by a sense of equity in the division of the cost incurred. The role of economic analysis is to measure, more effectively than in the past, the incidence of cost burdens and the distribution of benefits. If this is done well, the choices and decisions on priorities among programs to enhance the level of living will be made not by prototypes of the economic man but by an electorate better informed of the economic consequences of efforts to meet desired social objectives.

In broad perspective, the limitations on what the American economy can "afford" to provide in the way of income maintenance to older members of the population are costs (burdens of transfers) incurred and the conflicting claims of other high-priority objectives for its dependent members; that is, education of dependent children competes for resources against better living standards for dependent senior citizens. The limitations are real resources and the willingness of individuals to share gains in real income. The Federal Government's tax-supported programs are essental to deal with the large number of cases in which a stable employment relationship does not exist. On balance, they are no more burdensome per dollar of expenditure, and perhaps less so in the case of OASDI, than a wide range of public service activities.

Funded employee retirement plans, whether public or private,[13] involve less burden on the incentives of those actively engaged in production. Through the saving and investment process, they finance the economic progress which produces higher retirement living standards. This is presumably the rationale for deferring the incidence of income taxation on growth in the individual's pension equity. In essence, it is also an answer to the question: What difference does it make whether now and in the future a greater proportion of retirement incomes is provided under private auspices or under tax-supported governmental programs?

IV. The Effect of Pensions on Aggregate Saving

Nonfarm households are the principal group of savers, typically accounting for about three-fifths of gross national saving in the American economy.[1] Logically, then, we should give primary attention to the question of how retirement income programs affect the saving of individual family units, commonly referred to as personal saving to distinguish it from saving by corporate business, unincorporated businesses and farms, and units of Government.

THE ISSUES INVOLVED

From the national income and product accounts prepared by the U.S. Department of Commerce, the picture below emerges of personal income, personal saving, and retirement saving. However measured, retirement saving represents a major share of personal saving and its importance has increased during the first two postwar decades. By all

[13] In this context, there is no distinction between the retirement systems of State and local governments and the plans for individuals in private employment, since both generate private saving and the financing of activities which enlarge the output of goods and services.

[1] Based upon the flow-of-funds accounts of the Board of Governors of the Federal Reserve System. Households provide an even larger proportion of net saving in the economy.

past standards, the systematic provision of retirement income by funding through financial institutions, as distinguished from transfer payments, has become the most important new element in the saving process.

	Average, 1946–50	Average, 1951–55	Average, 1956–60	Average, 1961–65
Personal income (billions of dollars)[1]	203.0	283.4	366.0	472.0
Personal saving (billions of dollars)[1]	11.7	17.2	19.9	23.2
Retirement saving (billions of dollars)[2]	2.7	4.6	7.2	9.9
Personal saving as percentage of personal income	5.8	6.1	5.4	4.9
Retirement saving as percentage of personal income	1.3	1.6	2.0	2.1
Retirement saving as percentage of personal saving	23.1	26.7	36.2	42.7

[1] National income accounts of the U.S. Department of Commerce, "Survey of Current Business."
[2] Flow-of-funds accounts of the Board of Governors of the Federal Reserve System. Measures increase in assets held by governmental and private pension programs, excluding OASDI.

Note: If personal saving is expressed as a percentage of disposable personal income, the saving ratios for the four 5-year periods are 6.4, 6.9, 6.2, and 5.6 percent, respectively. Using the ratio to personal income is considered more relevant since most of the pension saving is, in effect, from pretax income; i.e., employer contributions to public and private plans are not recognized as taxable income to the employee.

Whether this form of saving represents a substitution for other forms or a net addition to the aggregate saving of households becomes a key question in determining the future volume, composition, and trend of saving and capital formation in the American economy. The research of Raymond W. Goldsmith [2] has established the long-term stability in the ratio of saving to income. Despite the development of new financial institutions such as life insurance companies, savings and loan associations, consumer finance companies, investment companies, savings banks, and credit unions, the record of the past 90 years shows remarkable stability in the saving ratio.

There have, of course, been great changes in the preferences of individuals for different types of financial assets. Financial intermediaries have enjoyed varying rates of growth as the public has shifted its favor from one to another form of saving medium. The secular trend toward the institutionalization of saving has afforded ample opportunities for growth in the case of most intermediaries despite the changing emphasis of individuals on different characteristics of saving media.[3]

It is quite consistent with the record of the past, therefore, to expect that households will substitute for other savings the accumulation of an interest or equity in a pension program. With this form of income for life after retirement assured by coverage under a public or private plan, it would appear to be less necessary or desirable to save during working years by means of savings accounts, life insurance, or homeownership. If this is the way people react, we should expect them to substitute retirement saving for saving in other forms. The substitution might well be less than complete, however, because of certain characteristics of saving through a pension plan: (1) The realization of full pension benefits may depend upon continuity of employment in the event of delayed or graded vesting. (2) An equity

[2] *A Study of Saving in the United States*, Princeton, N.J., 1955, vol. I, pp. 4–22.
[3] Exceptions are the postal savings system (discontinued in 1966) and possibly U.S. savings bonds. For a comprehensive view of these trends, see Raymond W. Goldsmith, *Financial Intermediaries in the American Economy Since 1900*, Princeton University Press for NBER, 1958.

in a pension plan is illiquid. It cannot be drawn down as can other forms of saving in the interim period prior to retirement for other purposes. (3) Contributions to retirement programs are usually compulsory. As a result, the participant may have accumulated for his benefit sums well in excess of the amounts which he would voluntarily save in any form. Workers employed at lower pay scales might, indeed, have their pension equities as virtually their only form of saving.

A working hypothesis derived from general observation and experience would be that households covered under pension plans would save more, other influences on the saving ratio held equal, than those not covered. The substitution would be substantially less than complete because of the special character of retirement savings and their lack of availability to serve other desired objectives.[4]

THE CAGAN ANALYSIS

How, in fact, do households react in their saving patterns to coverage under a pension program supplementary to social security? This is the question Phillip Cagan sought to answer. Available resources did not afford an opportunity to survey a representative sample of American households, but the cooperation of a sizable group of Consumers Union subscribers made possible a detailed analysis of their saving behavior and holdings of financial assets. This group was clearly not representative of the population at large because of higher incomes, greater educational attainments, and the predominance of salaried workers as heads of households.

The deficiency in representativeness of the sample is partly compensated for by certain of its favorable characteristics. Consumers Union subscribers may be presumed to be better informed about their financial affairs, more thoughtful about their financial decisions, and better equipped to respond to lengthy questionnaires. The 11,513 households actually used in the analysis also represent a very substantial number of cases of middle- and upper-income households in which saving is important. Over 59 percent had annual incomes between $5,000 and $10,000, and almost 34 percent enjoyed a household income of $10,000 and above in 1958–59.

It is plausible, although not demonstrable, that this more knowledgeable group of households reflects the reaction to pension coverage which will be characteristic of a much more representative sample of American households in years to come as they become better informed about their pension equities and as they see more of their friends, relatives, and coworkers actually receiving benefits. If we assume that employers and the representatives of employees will continue actively to promote better education of covered workers about prospective benefits, as they have compelling reasons to do, one could argue that the reactions of the select group of Consumers Union members would be indicative of the saving behavior of the population at large during a subsequent period.

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[4] For a discussion of possible ranges of substitution, see Daniel M. Holland, "What Can We Expect From Pensions?" *Harvard Business Review*, July–August 1959, pp. 125–140; and Challis A. Hall, Jr., "Retirement Contributions, the Spending Stream and Growth," *Federal Tax Policy for Economic Growth and Stability*, Joint Committee on the Economic Report, Washington, 1955, pp. 786–797.

However, it is not necessary to repeat here the close reasoning and analysis which Cagan applied to his survey of households. Only certain highlights of his study need to be introduced at this point. Excluding households with significant gains and losses and extreme saving ratios, Cagan found the average saving ratios (saving as a percentage of income) to be as shown below.

AVERAGE SAVING RATIOS

[In percent]

	Covered households	Not-covered households
Discretionary saving in the form of increases in cash and securities minus increases in nonmortgage debt	2.8	2.1
Contractual saving in the form of increases in equities in life insurance, annuities, and real estate	5.9	5.7
Subtotal	8.7	7.7
Pension saving in the form of increases in equities in pension plans	2.8	----------
Total saving ratio	11.5	7.7

Source: Phillip Cagan, "The Effect of Pension Plans on Aggregate Saving," New York, NBER, 1965, table 4, p. 21. The number of households included is 8,038 for the covered group and 2,911 for the not covered.

Although respondents to the survey clearly underestimated the increase in their pension equities, presumably because of their lack of information about employer contributions, the proposition that saving in forms other than through pensions is not reduced in the average household, and may even be increased, is clearly supported by Cagan's findings. Furthermore, he shows that this pattern of behavior is not restricted to either discretionary or contractual saving forms.[5]

The conclusion that pension saving represents a net addition to personal saving, i.e., that it is not substituted for other forms of saving, is sufficiently startling in the light of the history of saving habits to call for some explanation.[6] The explanation which seems to fit the facts best is that there is a "recognition effect" associated with pension coverage. That is to say, the head of a household recognizes that a reasonable degree of financial independence in retirement is attainable for him when a pension program is made applicable to him in addition to his social security income prospects. At this point, his motivation to save on his own to increase the adequacy of his retirement income is stimulated by the realization that such a goal is within his grasp. The fact that it was not similarly attainable by his parents, who are in some degree dependent upon him, may heighten the impact of this recognition effect.

Conceivably, this stimulus to saving in other forms will weaken over an employee's lifetime as his pension benefits become fully vested and he has in fact saved to supplement his prospective benefits. Cagan's study suggests that while the recognition effect predominates, there does exist evidence of an offsetting substitution effect in the case of those who contribute 5 percent or more of their compensation to the pension plan and enjoy full vesting. The strongest recognition effect,

[5] Tests of the validity of these conclusions and examinations of the data for possible biases are set forth in Cagan's analysis and are not repeated here.

[6] George Garvy was among the first economists to recognize this possibility and to suggest reasons for it. See his "The Effect of Private Pension Plans on Personal Savings," *Review of Economics and Statistics*, August 1950, pp. 223–226.

on the other hand, is found in those cases where the individual contributes at a modest rate and has only partially vested rights to his pension. The recognition effect seems to be least powerful when the household head does not contribute to the plan and has no vesting.

The argument that a contributory pension plan is more meaningful to the employee than a noncontributory one is apparently supported by these findings. Further, the transformation of a remote contingent benefit prospect into an emerging firm promise as vesting is earned seems to act as a catalyst in the individual's making of decisions to save for his old age.

The operation of both recognition and substitution effects in producing the average behavior of households in the Consumers Union panel suggests that the impact of pension programs on aggregate personal saving can change over time if there are changes in the structure of pension arrangements. This must be kept in mind when we turn to the question of implications of Cagan's findings for the future.

CORROBORATION OF CAGAN'S FINDINGS

Writing in *The Mass Consumption Society*, George Katona of the Survey Research Center, Institute for Social Research of the University of Michigan, discusses the recognition effect in these words:

> Being assured of some, for most people insufficient, funds after retirement, the provision of adequate funds during old age no longer appears an insurmountably difficult problem; being closer to the goal stimulates people to work harder to achieve the goal, and, therefore, collective retirement plans promote individual saving. . . .
>
> This hypothesis is derived from the goal-gradient hypothesis which assumes that effort is intensified the closer one is to one's goal. . . .
>
> Goals that are believed to be attainable stimulate us to a much greater extent than improbable dreams.[7]

This, then, is a rationale based upon the study of human behavior for the results obtained in Cagan's study.

The other major question raised about Cagan's conclusions relates to the nature of his sample. Admittedly, it is debatable whether the reactions of the particular group of Consumers Union respondents can be accepted as valid for the American population as a whole. Fortunately, important evidence on this question has been provided in a subsequent study by Katona and his staff at the University of Michigan. With the assistance of a research grant from the Social Security Administration, Katona surveyed a representative sample of households in the continental United States in 1962 and 1963. His findings completely support the existence of the recognition effect of pension coverage.[8]

Pension coverage, according to this survey, increases both saving behavior and saving-mindedness. Those expecting an adequate retirement income, furthermore, save at least as much on average as those who expect an income below their needs. The effects of rising levels of aspiration, stimulated by accomplishment, in motivating saving are seen as the powerful factors; fear of the future seems to provide much less motivation for saving for the distant prospect of retirement.

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[7] New York, 1964, pp. 184–185.

[8] George Katona, *Private Pensions and Individual Saving*, Monograph No. 40, Survey Research Center, Ann Arbor, Mich., 1965.

FUTURE TRENDS

The Cagan study, like any cross-sectional analysis, has its maximum significance in relation to the environment in which it was made. The similarity of results from Katona's survey, 4 years later, might suggest that we are dealing with fairly stable phenomena. But, we must bear in mind the possibility of changes in personal saving patterns in response to changes in the pension structure.

The trend to noncontributory plans should erode the substitution effect which Cagan observed to be stronger when employee contributions are substantial. Earlier coverage for employees, together with the prospect of sooner achieving vesting, might increase the recognition effect. Greater knowledge of the meaning of pension coverage does not seem to have a discernible effect upon the saving ratio. Thus, we can identify some factors which might, on balance, modify saving behavior. It would be hazardous to guess the net result, but it seems unlikely that in the near future pension coverage will reduce saving in other forms. This conclusion is supported by the evidence suggesting that the recognition effect does not "wear off" with the passage of years of covered employment.

Apart from these changes in the terms of pension arrangements, of course, there is the possibility that if benefit formulas are liberalized, some of the retirement saving motivation might be sapped. The extreme case would be that in which larger social security benefits and higher supplementary pension benefits would substantially equal the reduced cost of maintaining the same standard of living as during the last working years. This situation is not in prospect for the visible future, but the movement in that direction persists, particularly in reducing the cost of maintaining living standards by programs such as Medicare and by the lower income tax applicable to retirement income. Rising levels of aspirations, after all, can apply to standards of living during the period before as well as the period after retirement.

In any event, the value of repeating the Cagan and Katona surveys within the next decade is apparent. With the further extension of coverage and the maturing of the pension structure further advanced, it should be fruitful to test the reactions of households to pension coverage once again.

Putting to one side this rather speculative question of a possible shift in the balance between the recognition and substitution effects of pension coverage, What are some of the implications for personal saving in the American economy of the prospective growth of pension arrangements? Holland's projections show that benefit payments are likely to be rising at a more rapid rate than contributions in the years ahead. The rate of growth in retirement saving could slacken. The implications are pictured below by comparing possible 1975 with actual 1965 relationships.

	1965	1975 [1]
Personal income (billions of dollars)	537.8	894.9
Personal saving (billions of dollars)	27.2	48.5
Retirement saving (billions of dollars)	10.9	15.1
Personal saving as percentage of personal income	5.1	5.4
Retirement saving as percentage of personal income	2.0	1.7
Retirement saving as percentage of personal saving	40.1	31.1

[1] Personal income and personal saving from a representative projection of national income accounts made by the National Industrial Conference Board in "The Economy in the Next Decade," "The Conference Board Record," December 1965. This projection is roughly in line with other projections made by governmental and private agencies. Retirement saving is calculated from Holland's projections of about $13.6 billion in 1975 for private and State and local government programs, and it is assumed that, as in 1965, this will be nine-tenths of a $15.1 billion total including the funding of Federal Government plans.

This exercise suggests that, unless Holland's projections materially underestimate the rate of retirement saving in another decade, the impact on aggregate personal saving is now at a peak and will diminish. That is to say, the fraction of personal saving represented by retirement saving is currently close to its maximum. Unless there is a new burst of growth in retirement saving during the years ahead, or in other forms of saving, the projected saving ratio will not be realized.

No doubt, a portion of a possible decline in the saving ratio will disappear if consumer durables are included, since consumer expenditures are expected to rise more rapidly in this area than in the case of services or nondurable goods. Also we may be victims of measurement problems. Saving through expenditures on such intangible capital assets as education (we could even add cultural and personal capital derived from "investment" in travel, the arts, and good works) is not treated as saving in conventional accounting. One of the consequences of gains in living standards can simply be a shift to saving through the accumulation of such intangible assets.[9]

However, for our subsequent analysis of capital market influences, we must concentrate on the implications of the unfolding pattern of financial saving in the economy. In this dimension of the economic effects of pensions, we conclude that the impact of rapid growth is close to its peak; that in the absence of a resurgence of growth in pension arrangements, we have already experienced the major part of their influence on saving and the capital markets during the second postwar decade.

POSSIBLE EFFECTS ON SAVING BY BUSINESS AND GOVERNMENT

On the basis of our earlier analysis in chapter III, it appears that the growth of private pensions has probably not had any material effect on saving by business.

Federal, State, and local government saving is substantial in the absence of major wars and depressions. Changes in the net worth of these units, taking into account tangible assets as well as financial claims, are somewhat irregular and sensitive to economic change. With so many forces affecting the levels of revenues and expenditures, it is difficult to isolate the effects of pension arrangements in specific terms. At times, of course, the question relates to changes not in saving but in dissaving.

[9] For the significance of these forms of saving, see F. Thomas Juster, *Household Capital Formation and Financing, 1897–1962*, New York, NBER, 1966.

The revenues of the Federal Government, and other units of government in certain instances, are lower than they would otherwise be as a result of not taxing currently as income to the covered employee those contributions which the employer makes to pension programs. In 1965, such contributions exceeded $10 billion, of which two-thirds were supplied by private and one-third by public employers. This figure does not accurately reflect the true situation because the Federal civil service and some State systems are greatly underfunded; that is, the employer's contribution substantially understates the growth in the employee's equity in the program. The extreme case, of course, is the retirement program for members of the armed services under which benefits are paid as current budgetary expenses. The member earns a right to retirement benefits, but that equity is not recognized until he starts to draw them. The same is true of additional billions of employer contributions to a wide range of health and insurance benefit programs.

The figure which appears in the flow-of-funds accounts as retirements saving is, we should constantly bear in mind, only the increase in assets held in trust funds or as offsets to life insurance reserves. This is not necessarily the same figure as the present value of pension claims accrued during a year after discounting for mortality and turnover factors. What the real figure is no one knows, but, particularly in public programs, there is a very substantial understatement. It is clear, however, that we are measuring only financial claims which are specifically recognized, rather than the growth of individuals' pension equities.

Whatever the true magnitudes, there is a partial offset in that pension benefits received as a result of employer contributions are taxed as income, with the exception of OASI benefits, which are, of course, not taxed. The offset is reduced by the more favorable tax treatment of persons over 65 and the fact that lower rates are applicable on the average for the person no longer actively employed.

Thus we can say that the growth of public and private pensions has eroded the revenue base for taxation based upon income. The simplest illustration is the recent trend in some State and local government retirement programs to take over a portion of the employee's contribution instead of increasing salaries. The same result is achieved by increasing benefits without changing the employee's contribution rate.

Another important tax exemption is that of the income earned by a pension fund. The amount of this untaxed income has, of course, grown rapidly as public and private systems have accumulated assets. Exclusive of Federal programs, such untaxed earnings are about one-half of the employer contributions.

Substantial but unmeasured reductions in Federal, State, and local expenditures are made possible by the flow of pension benefits. We have observed the partial displacement of old-age assistance by social security as an example. Given a target of well-being sought for the aged, the existence of pension benefits may afford governmental units substantial economies in their necessary outlays for supporting housing projects, other community facilities, and agencies.

The effect on Government saving is difficult to determine, as Cagan has pointed out. It seems doubtful that this one element in the tax

structure affects the level of expenditures by Government. If Federal and State taxes on income are higher as a consequence, the principal result may be a reduction in the level of other saving, particularly personal saving by upper-income individuals. However, saving in the aggregate is larger, we have seen, by the full amount of retirement saving. Thus, a discernible result may be to make savings by different income groups less unequal than would otherwise be the case. That is, the lower-income groups may save more, and the higher-income groups less.

If the pension structure is designed to shift income earned in productive effort from the working years to the years of retirement, it is not unreasonable to shift the incidence of taxation with it. If there were no differential in applicable rates of tax, revenues would be unchanged after the transitional period. However, the double personal exemption for those over 65, the retirement income credit, and the exclusion of OASI benefits from tax are all steps designed to lighten the tax burden on pension benefits. Thus, employees in the aggregate, if we assume some stable revenue requirement, pay higher income taxes on wages and salaries during employment and lower taxes after retirement. In this light, the public and private pension structure is a mammoth transfer operation, probably without any important impact on Government saving in either direction.

In another sense, also, the argument is admissible that the tax benefits afforded systematic programs to provide retirement incomes supplementary to OASI having nothing to do with Government saving. A long-term decision is reached that encouragement should be given to certain financial arrangements. Having made this decision, governmental actions are taken to establish whatever pattern of revenue and expenditure policies seems most likely to afford promise of sustained economic growth and rising living standards.

THE IMPACT ON TOTAL NATIONAL SAVING

Our research has supported the proposition that pension saving is a net addition to personal saving. Less clearly established, perhaps, is the extension of this conclusion to state that it is a net addition to total national saving. The impact on saving by business and Government is not clear, but it seems doubtful that it is materially affected.

There is also some evidence that this major impact has already been felt. If it is desirable to sustain the growth of saving in the economy, some other economic policies may be more fruitful in the future. On balance, however, the tax and other policies which have fostered pension fund growth appear to have been appropriate, in the environment of the postwar years, to the objective of increasing saving. If balanced economic growth should require either a higher level of saving or a higher level of consumption in the future, it will be most desirable to resurvey this whole topic again.

It is evident, however, that the long-term nature of pension arrangements makes them unsuitable as a focal point for short-term adjustments in the pattern of spending and saving. Tax and expenditure policies designed to foster stable economic growth can clearly be more

effectively applied to areas which are more sensitive to temporary influences. In their application, however, recognition should be given to the secular changes brought about by the maturing pension structure.

V. The Impact of Pensions on the Capital Market: Private Funds

The impact of pension fund operations on the capital market depends upon the investment policies followed by portfolio managers. Our concern is primarily with differential effects. What difference does it make when funds flow through these financial intermediaries, rather than through other channels? This chapter provides some answers to this question in the case of pension plans for employees of business firms and nonprofit institutions. Governmental plans of all kinds are dealt with in chapter VI.

INSURED PLANS

Growth Trends

When pension commitments are funded by premium payments to, or deposits with, a life insurance company, they are described as being insured. The form of the contract is not material to our consideration. Suffice it to say, the insurance company is seeking to provide as good a return on the fund as possible within the statutes governing investments after allowance for adequate reserves for possible losses. The actual process involves a mingling of the funds with all others available for employment in the capital market.[1]

Thus, we can think of insured pension funds as a portion of life insurance loans and investments. In general, it is valid to assume that receipts are invested across the whole range of assets, enhancing the companies' ability to lend and invest but not changing it in any material respect. The reserve liabilities of a life insurer under a group annuity contract are different from those created by an equivalent premium volume from, say, ordinary life insurance; but, it is not clear that this fact affects the investment policies of the company. The objective of earning a high, stable rate of return is similar, if not identical, in both cases.

The growth of pension programs has added materially to the assets of life insurance companies, as indicated in table V–1. At the end of 1965, assets balancing insured pension reserves of $27.3 billion were equal to 17 percent of total assets of all life insurance companies in the United States and 19 percent of invested assets (excluding cash, policy loans, home office buildings, and premiums due). The proportions have increased over the years because assets attributable to pension plans have grown more rapidly than assets employed in other areas of the business. In 1950, both proportions were only 9 percent. Over the period 1940–55, life insurance assets grew at a compound annual rate of 7.4 percent, but the growth rate slowed down in the mid-1950's and was only 5.8 percent in 1955–65. This slackening occurred in spite of a generally rising growth rate for life insurance in force. The latter rate increased from 7.8 percent in 1940–55 to 9 percent in 1955–65. The change in growth patterns is shown in table V–2.

[1] Certain qualifications to this general statement are discussed below.

TABLE V-1.—GROWTH IN LIFE INSURANCE ASSETS AND PENSION RESERVES, 1940-65

Yearend	Increase in total assets (billions) (1)	Increase in pension reserves (billions) (2)	(2) divided by (1)[1] (percent) (3)
1940	$1.6	$0.2	13
1945	3.7	.4	09
1950	4.4	.8	18
1955	5.9	1.3	22
1960	5.9	1.3	22
1961	7.2	1.4	19
1962	6.5	1.4	21
1963	7.8	1.7	21
1964	8.3	2.0	23
1965	9.4	2.1	22

Source: Computed from Institute of Life Insurance, "Private and Public Pension Plans in the United States," and "Life Insurance Fact Book."

[1] Computed before rounding.

The reason that assets increased less than insurance in force is that the saving component in the contract mix fell. For example, the proportion of endowment policies decreased from about 15 percent of individual life insurance in force in 1950 to 7 percent in 1962.[2] Group insurance, meanwhile, increased its share of the total (exclusive of credit life insurance) from 21 percent to 33 percent. Another view of the same trend is visible from the flow-of-funds accounts of the Federal Reserve System. If the increase in life insurance reserves is expressed as a fraction of total financial assets acquired by households, the proportion falls rather continuously from 21 percent in 1946, the first year for which data are available, to 10 percent in 1964 and 1965.

TABLE V-2.—LIFE INSURANCE GROWTH RATES, 5-YEAR PERIODS, 1940-65

[In percent]

	Insurance in force[1]	Total assets	Total assets less pension reserves
1940–45	5.6	7.8	7.2
1945–50	8.7	7.4	6.7
1950–55	8.2	7.2	6.3
1955–60	9.2	5.7	5.0
1960–65	8.7	5.8	5.5

[1] Excludes credit life insurance.

Some loss of market share in the saving field suffered by life insurance companies has not been accepted with equanimity. To regain their former position, managements are emphasizing the sale of ordinary life contracts in intensified sales efforts. But, more importantly, for the particular concerns of this study, a strenuous effort is being made to regain lost ground in the pension area, as more fully treated below.

Portfolio Composition

Although the life insurance industry has participated actively in practically all segments of the capital markets, it has become the dominant institutional lender in two areas: directly placed long-term loans to business and mortgages on commercial and industrial prop-

[2] Institute of Life Insurance.

erties. The distribution of invested assets at the end of 1965 and increase in ownership during the preceding decade provide a summary view of life insurance portfolio activity.

The data in table V–3 provide a picture of how some $16 billion of insured pension fund accumulations have been invested during the past decade along with other life insurance assets. The striking feature of recent years has been the active financing of business firms through directly placed term loans and mortgages on commercial and industrial properties. Private pension arrangements have, then, made an important contribution to the extensive financing of the high level of business investment, and secondarily, to the expansion in the stock of housing.[3]

TABLE V-3.—INVESTED ASSETS OF U.S. LIFE INSURANCE COMPANIES, 1965

Assets	Amount (billions)	Percentage of total	Net change since 1955 (billions)
Bonds:			
U.S. Government	$5.1	3.5	−$3.5
Foreign government	.9	.6	.4
State, provincial, and local	5.5	3.8	2.8
Railroad	3.3	2.3	−.6
Public utility	17.0	11.8	3.1
Industrial and miscellaneous	38.3	26.4	20.2
	70.2	48.4	22.4
Stocks:			
Preferred	2.9	2.0	1.1
Common	6.3	4.3	4.4
	9.1	6.3	5.5
Mortgages:			
Farm	4.8	3.3	2.6
1- to 4-family	29.9	20.6	12.2
Multifamily and commercial	25.3	17.4	15.8
	60.0	41.4	30.6
Other:			
Real estate held for investment	3.3	2.3	1.3
Other assets	2.4	1.7	1.4
	5.7	3.9	2.7
Total	145.0	100.0	61.2

Note: Excluding cash, policy loans, home office buildings, and premiums due.

Source: Computed from Institute of Life Insurance, "Life Insurance Fact Book," and Federal Home Loan Bank Board Source Book.

Competitive Influences

The normal competition among life insurance companies for superior earnings on investments, which has been responsible for many innovations in capital market instruments, has been reinforced by competition from other managers of pension fund accumulations. In 1950, when insured pension reserves amounted to $5.6 billion, trusteed plans had amassed $6.5 billion of assets. By the end of 1965, trusteed assets of $58 billion were more than double the $27.3 billion of insured pension reserves.

The flexibility of trusteed plans, especially in equity investment, accounted for much of the loss in market share sustained by life insur-

[3] For extensive treatment of the lending and investing activities of life insurance companies, reference can be made to Life Insurance Association of America, *Life Insurance Companies as Financial Institutions*, Englewood Cliffs, N.J., 1962, and Andrew F. Brimmer, *Life Insurance Companies in the Capital Market*, East Lansing, Mich., 1962.

ance companies. The industry has obtained relief from taxation which formerly applied to insured pension plans and has taken a series of steps to be more competitive. The first was to promote split funding. In this arrangement, the insurance company managed the fixed-income portion of the fund, while a bank would handle the remainder committed to common stock investments. By offering a return based on the earnings on new money, instead of the average portfolio earnings rate, this type of contract has been an important competitive weapon. Since new money has been invested largely in corporate direct placements and conventional mortgages, the highest yielding classes of assets, the rate offered in recent years has been relatively attractive.

The most recent step taken by life insurance companies to improve their competitive position has been to secure authority to manage "separate accounts" in which insured pension funds can participate. These separate accounts enable a company to offer an equity investment facility outside of the usual range of guarantee and valuation problems. This development is too recent (only $580 million in separate accounts at the end of 1966) to determine whether it will be of major competitive assistance, but it is evidence that in the future life insurance companies will be more effectively competitive in the pension field. It is equally clear that the field of equity investment will become of greater importance to life insurance company portfolio managers.

TRUSTEED PLANS

Evolution of Investment Management

As previously indicated, trusteed pension funds have been one of the most rapidly growing financial intermediaries, especially since the end of World War II. Projected growth, as discussed in chapter II, assures them of a prominent place among major participants in the capital markets. Starting from a relatively small base prior to World War II, these funds have passed through a complete evolutionary development of investment management policy.

Initially, the restricted size and scope of noninsured plans influenced their investment along traditional trust lines. It was customary to invest in publicly issued bonds of high quality. Indeed the largest aggregation of funds, those of the Bell System, were largely funded through the issuance of 4 percent company notes from the start of the plan in 1913, until the late 1930's. The transition of the combined pension, trusts of the American Telephone & Telegraph Co. and its subsidiaries is shown in table V–4.

TABLE V–4.—BELL SYSTEM PENSION TRUSTS, 1935–50

[Book value of assets in millions of dollars at yearend]

Assets	1935	1940	1945	1950
4 percent demand and 1-year notes	125.4	103.8	5.1	----
Bonds of Bell System companies	22.5	45.9	45.7	200.9
U.S. Government securities	2.1	30.7	277.5	362.0
Other corporate bonds	----	32.9	102.7	646.6
Other investments	----	----	----	10.1
Cash and accrued interest	2.0	11.9	12.4	11.7
Total	152.1	225.2	443.3	1,231.3

Source: American Telephone & Telegraph Co. annual reports.

Prior to World War II, there was, in effect, no investment management of the Bell System trusts. They served merely as a medium for accruing and recording the estimated costs of future pension benefits.

It was a frequent practice of industrial companies to write investment restrictions into their pension trust agreements which limited the trustee to securities legal for life insurance companies or fiduciaries in New York State. As the funds grew, bank trustees urged the inclusion of modest amounts of common stocks, in the range of 10 to 25 percent. In the late 1940's, with Government bond yields still pegged at 2½ percent, equities were very attractive for current income. In 1947, for example, common stocks of good quality offered a current return of 5 percent while high-grade corporate bonds provided only 2.58 percent.

At about this time, bank trustees in States such as New York were greatly concerned about the plight of beneficiaries of personal trusts restricted to a list of bonds legal for savings banks. In 1950, they succeeded in obtaining a 35-percent prudent-man rule, enabling them to buy common stocks up to that proportion in legal trusts. In 1951, life insurance companies were authorized to buy stocks in limited amounts in New York State, and in the following year mutual savings banks received similar authority.

The early postwar interest in equities, stimulated by their unusually favorable yield advantage, was given legislative sanction in an important State by this series of changes in the laws. It was hardly a radical step for a company to amend the trust agreement to permit investment in securities legal for life insurance companies or fiduciaries in New York. This automatically gave the trustee authority to invest up to 35 percent of the fund in common stocks.

Thus, the breakthrough in investment policy came at the inception of the period of major growth in trusteed pension fund assets. Recognition was given to the permanence, built-in growth features, and lack of liquidity requirements of the typical corporate pension fund. Also, as costs mounted, business firms were made more aware of the importance of earning the better rate of return which equities could provide. Finally, it became increasingly clear that the company was funding a distant retirement income benefit which, together with OASI benefits, would be suitable or appropriate to the standard of living which the employee would be enjoying at the time of retirement. Viewed in these terms, the commitment being funded is not determined by some precise formula devised today and effective for decades to come, but by a level of benefits which would carry out this broad objective. The better the earnings of the fund, the more fruitful would be each dollar of contributions.

The transition from a concept of meeting a known liability, essentially the sinking-fund calculation of the payments needed at an assumed rate of interest to meet a future fixed liability, took place gradually. The dialog between company officials and trustees continued to broaden the concept of a pension trust fund. The logical result is the conclusion that a pension trust is a bundle of assets to be employed as productively as possible on a long-range basis for the sole purpose of meeting pension commitments already made (or likely to be made in the future).

The actuary's vital role in pension planning is to provide answers to such critically important questions as the following: (1) What benefits would a fund of a particular size, fed by a certain rate of contributions, be most likely to provide for this group of employees? (2) What would be the cost of changing the pattern of benefits for this group of employees? (3) How would alternative rates of contributions affect the incidence of the costs of providing these benefits? These and other questions involve assumptions as to mortality trends, turnover among employees at various ages and after various lengths of service, and the earnings of the fund.[4] The rate of earnings on the accumulated assets, unlike all of the other elements of cost, is something about which the trustee can take specific steps.

It is a commonplace to observe that the future cost of a pension program, over a long period such as 20, 30, or 40 years, is conjectural. Except in retrospect, no one knows precisely what the plan costs. But, the actuary could make a reliable estimate if he knew the rate of return that will be earned. This he does not know, nor does anyone else, except within fairly broad limits. Yet it is a major factor. One dollar a year accumulated and invested at 4 percent per annum builds up to $57.20 at the end of 30 years. But, if the earnings are 5 percent, the accumulation amounts to $68.09 in the same period, a difference of 19 percent.[5]

The problem of investment management, then, is not to earn any particular rate but to earn the best possible rate which investment opportunities permit. Corporate and Government bonds, mortgages, real estate, equities, or whatever else that provides the best long-term net yield may be the best medium of investment. (Yield is measured, of course, in terms of income received plus or minus changes in value.)

Current thinking about the management of pension trust assets has followed this line of reasoning to its logical conclusion. The fund is not analogous to life insurance assets or to a personal trust or to an investment company or to any other financial institution. It is *sui generis*. There is simply no other type of trust fund like it.[6]

This being the case, we might expect a distinctive pattern of pension fund portfolios to emerge. This expectation cannot be either supported or denied by experience to date. Investment management in a dynamic economy like the United States is not a science, nor can one with confidence set forth an estimate of the pattern which will emerge over the next decade or more. Nevertheless, the trends of recent years are suggestive and some estimates for the future can be entertained as being plausible.

Portfolio Composition

The distribution of noninsured pension fund assets at the end of 1965, and their growth during the past decade are shown in table V–5 and chart V–1. This composite picture includes the pension plans of business firms, nonprofit organizations, unions, and groups of employers acting jointly with unions.

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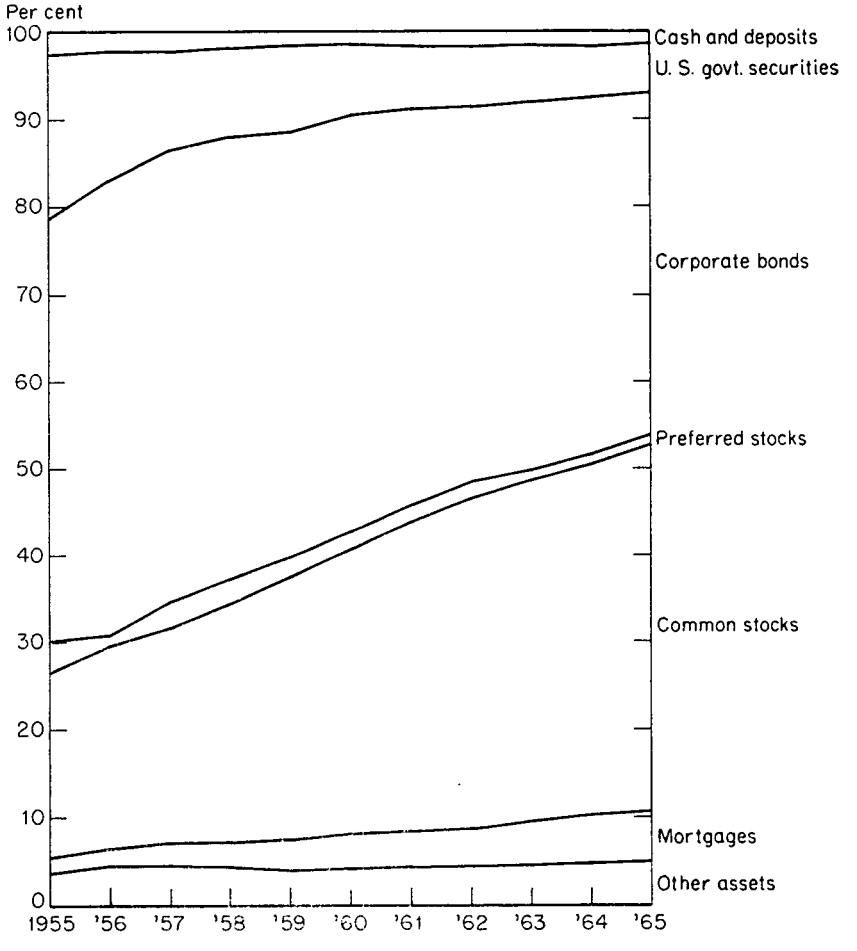
[4] There are, of course, other factors to be considered; these are only the principal ones. A clear exposition of the whole range of problems, intelligible to a layman, is to be found in James A. Hamilton and Dorrance C. Bronson, *Pensions*, New York, 1958.

[5] Computed from Jerome Bracken and Charles Christenson, *Tables for the Analysis of Capital Expenditures*, Boston, 1961, "Amount to Which $1 Per Period Will Accumulate, Received Continuously."

[6] Perhaps some charitable foundations have quite similar investment management objectives, but relatively few would be identical in all respects.

CHART V–1. Portfolios of Private Noninsured Pension Funds, 1955–65



Source: Securities and Exchange Commission.
NOTE: Book values, end of year.

TABLE V–5.—ASSETS OF PRIVATE NONINSURED PENSION FUNDS, 1965

[Dollar amounts in billions, book value]

Assets	Amount	Percent of total	Increase since 1955
Cash and deposits	$0.9	1.6	$0.5
U.S. Government securities	3.1	5.3	.1
Corporate bonds	22.7	39.1	14.8
Preferred stocks	.8	1.3	.1
Common stocks	24.5	[1] 42.1	21.1
Mortgages	3.3	5.7	3.0
Other assets [2]	2.8	4.9	2.2
Total	58.1	100.0	41.9

Source: Securities and Exchange Commission.

[1] If assets are valued at market, the common stock proportion was just under 55 percent.
[2] Includes real estate and other assets not classified elsewhere.

The preceding table and chart illustrate the trends of the past decade for which good data are available. In contrast to life insurance companies during the same period, pension fund trustees were not active in the mortgage market, but, were in a position to expand their common stock holdings at a rapid pace. Although it is not possible to identify dollars, it is a fair statement that these stocks were largely acquired with either incoming cash from contributions and interest earnings or from temporary investments of new money. In any event, net purchases of common stocks have not exceeded 60 percent of net receipts.

One of the problems of obtaining good results from equity investment is, of course, the matter of timing purchases to avoid a concentration in periods of high prices. This can be done by a strict dollar-cost-averaging program or a modification of one employing some sort of a range concept. In the early stages of programs of accumulation, the pattern appears to have been one of regularly allocating a substantial fraction of new money to equities. As funds grew in size and as initial objectives were achieved, the place of discretionary, as distinguished from programed, purchasing has increased.

In the trends of recent years, certain possible implications for the future are evident. First, it seems clear that common stocks will continue to be a major outlet for investment even if they do not prove to be quite as profitable as during the 1947–65 period of major upward revaluation of corporate earning power. Whether the proportion in equities eventually settles down at 40, 50, or 65 percent will depend upon comparative yields in all areas of the capital markets.

In any event, it appears that there will still be a substantial volume of business lending in the form of corporate debt, with a major fraction of it placed directly rather than through public offerings. Concurrently, we may expect a relatively great increase in mortgage lending and real estate investing. All of these trends are discussed in more detail below as part of an analysis of the participation of private pension programs in various sectors of the capital market.

Competitive Influences

Bank and company trustees have responded to the competitive drive of life insurance companies by seeking higher yields on fixed-income investments and by seeking to improve performance in managing stock portfolios.[7] The evidence of a more aggressive attitude is found in the record of sales of common stocks as a percentage of the average market value of holdings in corporate pension trust.

	Percent		*Percent*
1957	3.8	1962	4.6
1958	4.6	1963	6.3
1959	4.7	1964	7.2
1960	4.5	1965 [1]	7.1
1961	6.1	1966 [1]	7.8

Source: Securities and Exchange Commission.

[1] All private noninsured pension funds, including corporate.

[7] Evidence of this intensification of interest in investment management performance is to be found in the number of studies on the subject. See, for example, Peter O. Dietz, *Pension Funds: Measuring Investment Performance*, New York, 1966.

Other evidence of this more aggressive attitude is to be found in a widening of the range of companies selected for equity investment, greater concentration in directly placed corporate bonds, mortgage lending, and real estate investing. The stimulus of competition between trustees, always active, has been reinforced by competition from life insurance companies. As a result, there have been more imaginative approaches to investment management and many innovations in handling special types of assets. Special funds are established to hold mortgages and real estate, for example, in order to provide economical administration and diversification for the participating pension trusts. The use of commingled funds permits smaller accounts to share in the experience of a large and diversified portfolio.

Another technique for stimulating competition among portfolio managers is the practice of splitting among several bank trustees a large fund such as that of General Motors, Eastman Kodak, or constituent companies of the Bell System. The right to replace the trustee on short notice, normally reserved in the trust agreement, also militates against complacency. Some companies have established their own investment management organizations (General Electric, United States Steel, and Bethlehem Steel are examples) to assure the full attention of qualified personnel.

The consequences of this greater emphasis on efforts to improve realized yields have included the higher turnover in common stock portfolios noted above as well as interest in a much wider diversity of investment opportunities. Somewhat greater attention to the timing of commitments in both fixed-income securities and equities, a very difficult undertaking, has become evident with the passing of time. This trend represents a departure from the kind of dollar-cost-averaging approach which predominated during earlier years.

Flexibility

Data are not available to show the extent to which pension fund managers shift among different segments of the market for fixed-income investments, but observations of the writer suggest that flexibility is becoming increasingly required by competitive forces. Willingness to realize gains and losses has increased with greater recognition of the fact that they are not really relevant to long-term performance. Possibly this diminished "lock-in effect" has contributed to the narrowing yield differential between discount corporate bonds and current coupon issues in the most recent period of high interest rates.

Comprehensive and detailed information about asset management policies is not available on a continuous basis, but it is possible to document the changes which have taken place in the management of common stock portfolios. From the investigation of the Fulbright committee, completed in 1956,[8] portions of the study made of the New York State Banking Department in 1955,[9] and our analysis of representative portfolios in 1958 and 1959, we can piece together a general picture of how pension fund trustees managed their equity

[8] U.S. Senate, Committee on Banking and Currency, *Institutional Investors and the Stock Market, 1953–1955*, Washington, 1956.

[9] George A. Mooney, *Pension and Other Employee Welfare Plans*, New York State Banking Department, 1955.

investments about a decade ago, when this problem had emerged as a major aspect of total asset management.

These studies indicate that, in these formative years of the investment management of rapidly growing common stock portfolios, the practice was to invest in a relatively stable group of well-established companies. Because the portfolios were newly selected, there were few occasions for sales. However, there was, even then, a wide range of opinions as to the most suitable industries and companies.

The Fulbright committee staff selected 25 leading stocks in 17 industries for its study of activity during the 34 months from January 1953 through October 1955. The concentration of buying in these "institutional favorites" was highest for corporate pension funds (table V–6).

TABLE V–6.—PURCHASES OF 25 SELECTED COMMON STOCKS AND PERCENT OF TOTAL COMMON STOCK PURCHASES, BY INSTITUTIONAL GROUPS, JANUARY 1953–OCTOBER 1955

Group	Purchases (millions)	Percent
30 corporate pension funds	$201.8	24.0
5 closed-end investment companies	24.0	20.6
25 life insurance companies	66.0	20.3
30 bank-administered common trust funds	20.0	17.5
60 casualty and surety insurance companies	30.0	15.4
20 open-end investment companies	265.2	15.1
40 fire insurance companies	12.2	10.0
Total	619.2	17.9

Source: Fulbright Committee Report.

The indicated concentration of purchases declined markedly during the next several years. The National Bureau sample of 10 portfolios for the 18-month period from January 1958 through June 1959 showed only 16.5 percent of purchases in the same 25 leading companies.[10] Furthermore, 327 companies were represented in these portfolios during the period. Only 42 were owned by five or more of the funds, while 228 were owned by only two or one of the funds. Similar data are not available for later years, but the writer's direct observation supports the conclusion that fund managers have continued to increase the flexibility of their operations by broadening the range of alternatives.

The other major aspects of flexibility are, of course, in the timing of equity purchases relative to fixed-income investments and changes in the proportions of funds allocated to different types of bonds and stocks. Aggregate data for all trusteed pension funds conceal a wide range of policies pursued in individual funds. Over the 18-month period, the banks in the National Bureau sample showed a range from less than 23 percent to more than 45 percent in the allocation of new funds to common stocks. In 6-month periods, the range of allocation was between 7 and 69 percent despite an apparently stable level for the group as a whole of between 34 and 42 percent. A similar pattern

[10] The National Bureau sample was provided on a confidential basis by 9 banks which are leaders in the administration of corporate pension trusts. These banks probably managed more than 50 percent of all corporate pension funds. Each bank selected an unidentified fund which was well established, unrestricted as to investments, and under the bank's sole control. In effect, the quarterly statements furnished to us from December 31, 1957, through June 30, 1959, recorded each bank's unfettered judgment of what investment policy should be. For the analysis of common stock activity, the College Retirement Equities Fund was added to provide a 10th portfolio.

was found in the analysis of purchases of stocks when classified as defensive, cyclical, cyclical-growth, and growth issues. Divergent responses to changes in the economic environment and to shifts in relative values in the marketplace make sweeping generalizations about how pension funds invest in equities of doubtful validity. The available evidence supports, rather, the existence of wide variations among the strategies and selective processes of different portfolio managers.

Little or no support is found for the view sometimes expressed that the concentration of pension fund investing in a small number of leading company shares is tending to create scarcity premiums on institutional favorites. Attempts to identify such premiums have been unproductive and there are no surprises in the results. Pension funds are only one modest factor in a market which adjusts to underlying factors of earnings, dividends, growth, and stability. While price adjustments to changing expectations may take place slowly at times, there appears to be no compartmentalization of the market for equities which can create a different valuation for a few or many pension fund favorites in the marketplace. The increase in competitive pressures on portfolio managers, combined with the greater flexibility in investment decisions which has developed over the years, has largely eliminated tendencies toward concentration in relatively few issues, if, indeed, they ever existed in sufficient strength to influence selected stock prices.

Multiemployer and Union Pension Funds

Results of the National Bureau study of the asset growth of multiemployer and union pension funds, 1959–64, are reported more fully in the following report.[11] The portfolio composition of these funds, as Bartell has shown, varies in several material respects from the composite picture of trusteed corporate pension funds. A comparison for the year 1964, for example, shows the corporate funds holding higher proportions of assets in common stocks (41.6 percent versus 23.5 percent at book values). Mortgages and Government bonds were more favored by the multiemployer and union funds. These differences are not diminishing materially over time because of the active interest of many unions in contributing to the supply of funds for housing. Some of the newer and more rapidly growing funds have, however, given increasing emphasis to common stock investment.

The future pattern of investment policy will undoubtedly be influenced by certain union positions, notably instances of preferences for mortgages and real estate over common stocks. Despite the relatively rapid growth rate anticipated for the years immediately ahead, these differences will have relatively little influence since their proportion of the total assets of trusteed pension funds will increase only from 6.3 percent to perhaps 7 or 8 percent.

If the unions should succeed in negotiating a voice in the management of single-employer funds, more pressure might be exerted on fund managers to finance housing or other "socially desirable" projects. On the basis of developments to date, this possibility seems remote and there is some basis for questioning whether there would

[11] See Part I of H. Robert Bartell, Jr., and Elizabeth T. Simpson, "Pension Funds of Multiemployer Industrial Groups, Unions, and Nonprofit Organizations."

be any significant change in fund flows even if unions did obtain a voice in investment management decisions.[12]

Nonprofit Organizations

The smaller, but still vigorously growing, noninsured pension funds of nonprofit organizations represent less than 3 percent of all private noninsured funds. As shown in the following study by Simpson completed as part of the National Bureau's pension research project,[13] the asset composition of these funds is similar to the typical multi-employer portfolio.

Again, possible changes in investment policies will not have an important influence on aggregate capital market flows. Somewhat greater emphasis on common stocks and mortgage lending is indicated by the trends of recent years, but these asset shifts are in the same direction as those evident in single-employer funds.

FUTURE CAPITAL MARKET FLOWS

Recent Trends

A comparison of net flows through the capital markets during two recent years, 1960 and 1965, will serve to illustrate the importance, as suppliers of funds, of insured and trusteed pension programs covering individuals in private employment. For three major capital market sectors, the combined total of net acquisitions of financial assets by these two investor groups is expressed as a fraction of the net change in selected categories of assets. In the case of life insurance companies, the arbitrary assumption is made that assets acquired to fund pension plan reserves are distributed in the same proportions as all asset acquisitions.

The important trends to be observed from table V–7 are the shifts away from corporate bonds to corporate stocks and mortgages. Within the mortgage category, moreover, there has been a shift to multi-family and commercial property lending as contrasted with the prior concentration of lending in the one- to four-family market. Direct investment in real estate has also been growing in importance, although not of sufficient size to be separately classified in the table.

As both life insurance companies and pension fund portfolio managers have concentrated their corporate bond investments in directly placed issues, they have relinquished leadership in the market for publicly offered bonds to State and local government retirement systems. This shift has now been largely completed to the extent that offerings and yields make directly placed issues competitively attractive.

The net purchases of corporate stocks (largely common) have run in excess of net new issues by business firms, excluding investment companies (see note 2, table V–7). This fact has given rise to widespread discussion of the growth in institutionalization of stock ownership, particularly when the growth of mutual funds is also taken into account.[14] The net flows in the market for equity securities show a per-

[12] See the writer's "Management Interests in the Investment of Pension Funds," *Proceedings of the Eighteenth Annual Winter Meeting of the Industrial Relations Research Association*, December 1965, pp. 312–316.

[13] Bartell and Simpson, "Pension Funds," pt. II.

[14] See, for example, Daniel Seligman and T. A. Wise, "New Forces in the Stock Market," *Fortune*, February 1964, pp. 92–95, 194–206.

TABLE V-7.—NET ACQUISITIONS OF FINANCIAL ASSETS BY INSURED AND TRUSTEED PENSION PLANS COVERING INDIVIDUALS IN PRIVATE EMPLOYMENT, 1960 AND 1965

[Dollar amounts in billions]

Assets	1960				1965			
	Insured plans [1]	Trusteed plans	Total	Percent of total funds raised [2]	Insured plans [1]	Trusteed plans	Total	Percent of total funds raised [2]
U.S. Government securities	−$0.1	−$0.1	−$0.1	[3]	−$0.1	−$0.3	−$0.4	[3]
State and local obligations	.1	.....	.1	[3]	−.1	.....	−.1	[3]
Corporate bonds	.4	1.6	2.0	35.7	.7	1.5	2.2	25.6
Corporate stocks	.1	1.9	2.0	60.6	.2	3.1	3.3	97.1
Mortgages	.6	.3	.9	6.2	1.0	.6	1.6	6.3
Other	.2	.1	.2	[4]	.3	.....	.3	[3]
Total	1.3	3.8	5.0	[3]	2.1	4.9	7.0	[3]

Note: Individual entries may not add to totals because of rounding.

Source: Board of Governors of the Federal Reserve System, flow-of-funds accounts; figures differ from those compiled by Securities and Exchange Commission because of differences in concepts.

[1] That fraction of changes in life insurance asset holdings which is determined by the year's increase in insured pension reserves divided by total net acquisitions of financial assets.

[2] Total net acquisitions as percent of net new issues. In the case of corporate stocks, new issues include those of open-end investment companies. If these are eliminated, the percentage for 1960 is 111 and for 1965 about 1,100 because net new issues from other sources amounted to only $300,000,000.

[3] Not applicable.

sistent transfer of stock ownership from individuals and "all others" to professional managers. The data exaggerate, however, the impact of this trend on the market for equities.

In the first place, net new issues understate the supply of shares suitable for institutional ownership. Retirements tend to be disproportionately large for the smaller companies not widely available for public investment. That is to say, retirements are heavily concentrated in small privately owned businesses which sell their assets to large publicly owned corporations. Similarly, when a closely held company merges with one having a wide distribution of share ownership, the supply of broadly marketable shares is increased without a new issue being recorded. At least during recent years of great merger activity, this imparting of marketability to inactively traded common stocks has substantially exceeded the volume of recorded retirements. Gross new issues, therefore, better measure the quantity of new shares broadly available for pension fund investment. On average, this might add upward of $1.5 or $2 billion a year to what can be considered as the supply of new issues in the marketplace. Spot checks have shown that a disproportionately large fraction of the gross financing (including senior securities convertible into common stock) has been done by companies which are prominent in pension fund portfolios.

Second, we know that even gross new issues are not a true measure of the volume of equity financing. In a real sense, retained earnings represent a privileged subscription, a rights offering if you will, which has been fully taken up by existing stockholders. From 1961 through 1965, retained corporate profits averaged $18.5 billion a year, compared with new offerings of common stocks averaging only $2 billion a year. Pension funds, of course, "purchased" their proportionate share of these retained earnings.

Third, the supply of equity securities is constantly being enlarged in the marketplace from sales by wealthy individuals or their executors to meet Federal and State taxes on the transfer of property by gift or bequest. To the extent that the proceeds of these sales are used to meet such tax payments, instead of being reinvested in other common stocks, they measure a demand for equity capital in the marketplace in the same way as new stock issues. In a typical year, it appears that sales for these purposes are about as large as gross new issues.

In short, the net acquisitions of common stocks for private employee pension programs appear very large only when some major components of the aggregate supply are ignored. In perspective, it is evident that these investors are still only one important factor in the market and that their operations can have only a limited influence on the behavior of share prices.

Transaction studies made by the New York Stock Exchange over the last 15 years show that, prior to 1965, institutions and intermediaries typically accounted for less than 25 percent of the volume on that exchange. Studies in March 1965 and October 1966, however, showed 31.4 percent and 32.5 percent, respectively. In the year 1965, when purchases and sales on the New York Stock Exchange (twice reported sales volume) came to $146.4 billion, the total of trusteed pension funds' purchases and sales (obviously not all on the New York Stock Exchange) came to $8.1 billion. Possibly these funds accounted for 5 percent of the total. This would compare with about 4 percent in 1960 and less than 2 percent in 1955.

Pension funds can hardly be credited with a major role in the short-run behavior of share prices despite the rapid growth in their participation in the market. They did, however, perform a stabilizing function in the 1962 market break [15] and sustained their net purchases in good volume during the 1966 market decline.

Most recently, concern has been expressed over the rise in turnover rates for pension trusts and life insurance companies, presumably under the strong competitive pressure for performance. As such turnover rates are frequently computed (the average of purchases and sales divided by average holdings), a rapidly growing portfolio tends to show a relatively high figure. Nevertheless, trusteed private pension funds for the decade, through 1965, typically showed a turnover rate of between 11 and 12 percent, well below the range of 12 to 16 percent for all stocks on the New York Stock Exchange, and a 17- to 21-percent range for open-end investment companies.

As the emphasis on performance mounted in 1966, however, turnover rates exploded to 33 percent for open-end investment companies, the group on which the impact of this emphasis was strongest. In contrast, a rise of about 2 percentage points in the turnover rate for trusteed pension funds and life insurance companies was no more than the rise in the New York Stock Exchange turnover rate.

While developments to date have had only a modest impact on the structure of the market for common stocks, it must be recognized that further increases in the rate of turnover in institutional portfolios

[15] See New York Stock Exchange, *The Stock Market Under Stress*, New York, March 1963, and Securities and Exchange Commission, *Report of Special Study of Securities Markets*, pt. 4, ch. XIII, Washington, 1963.

could bring about major changes in the structure of markets. A rise in the volume of block transactions of 10,000 shares or more from 3 to 4.5 percent of total New York Stock Exchange volume is the principal consequence to date of greater institutional activity. An inventory of institutional ownership of stocks (SEC estimates) at the end of 1965 is shown below.

	Market value (billions)	Percent of total
Personal trust funds	$71.9	10.7
Investment companies	41.1	6.1
Trusteed private pension funds	39.7	5.9
Foundations	14.1	2.1
Property and casualty insurance companies	12.4	1.8
Life insurance companies	9.1	1.3
College endowments	6.4	.9
Bank common trust funds	3.5	.5
State and local government trust funds	2.2	.3
Total for selected institutions	200.4	29.7
All others, including foreigners	474.3	70.3
Total outstanding	674.7	100.0

Source: Securities and Exchange Commission, "Public Policy Implications of Investment Company Growth," Washington, 1966, pp. 276-277.

No doubt, much more than 30 percent of all stocks are under some form of institutional supervision or professional management. Data on the whole range of investment advisory services are not available. However, if the turnover of outstanding shares is to increase materially in the future, many holders other than pension funds will have to participate on a broad scale.

Neither the proposition that pension funds bid up the share prices for a limited group of "institutional favorites" nor the proposition that they are contributing to price volatility in selected shares can be supported by available evidence. On the contrary, it appears that portfolio managers are broadening their range of investment alternatives and taking advantage of the long time-horizon implicit in their decisions.

A Look at the Future

The longrun future of pension fund activities in the capital market will depend upon the economic environment and the demands for capital which are created. Rather than speculate on these matters, however, it may be more useful to set forth some educated guesses about the future flow of funds to indicate the range of possibilities over the next decade and more.

For this purpose, it is not too important whether insurance companies, bank trustees, or others administer the funds. An equity investment, a directly placed corporate obligation, a real estate mortgage loan, or a real estate purchase does not carry the label of the decision-maker into the capital market. Furthermore, life insurance companies are improving their capabilities to handle equity investments just as bank trustees are building up their facilities for mortgage and real estate investing. In the future, it will clearly make less difference to the flow of funds in the capital market whether a dollar of pension contribution goes to any particular class of institution or type of investment manager.

It is vitally important, however, whether Holland's projections of pension fund flows prove to be close to the actual events. As he correctly points out, the margin of error is likely to be modest for 1970 or 1975, but can increase materially for 1980. Essentially, he assumed that the role of social security in the years ahead would not substantially changed from what it has been. A few of the other crucial assumptions relate to the pace of increases in coverage, changes in standards for vesting and funding, and the rate of return earned by the investment portfolios.

Because changes in a number of the variables can have the effect of producing offsetting influences on the size of asset accumulations, we can have confidence in using Holland's average annual fund accumulation despite some recent surge of growth in years of high corporate earning power. His projections for the pace of annual net addition to assets follow:

Year	*Billions*
1965	$6.7
1970	7.5
1975	7.6
1980	7.4

Source: Holland's projections, table 28, p. 69.

This projected leveling off in fund accumulations, whether it occurs in another decade or is delayed by current developments, is the most significant aspect of future influences on capital market flows. Given an orderly pace of economic growth, it means that pension funds for individuals in private employment will account for a diminishing fraction of total net acquisitions of financial assets.

As trusteed portfolios become more seasoned—that is to say, as the average holding period of fixed-income securities lengthens—maturities and repayments will become much more important. In the 1970's, we may anticipate that gross acquisitions will continue to rise long after net acquisitions have leveled off. A projection for any year after 1970 will, therefore, be subject to a wide margin of error when expressed in terms of net acquisitions. With all of these qualifications, it may be useful to look at some possible patterns for the future (table V–8).

TABLE V-8.—POSSIBLE FUTURE NET ACQUISITIONS OF FINANCIAL ASSETS BY PENSION FUNDS COVERING INDIVIDUALS IN PRIVATE EMPLOYMENT, 1970, 1975, AND 1980

[In billions of dollars]

Assets	1970	1975	1980
Government securities	(1)	0.2	0.2
Corporate and other bonds	1.3	1.9	2.4
Corporate stocks	4.3	3.0	2.0
Mortgages	1.6	2.0	2.2
Other assets, including real estate	.3	.5	.6
Total	7.5	7.6	7.4

[1] Negligible.

The division of fund flows between bond, mortgage, and real estate investments is clearly a function of relative yields and terms. Since it is impossible to determine precisely what these will be, the distri-

bution of funds among assets other than common stocks shown in table V–8 has been arbitrarily made. Some weight has been given, however, to the anticipated strength in housing demand around the turn of this decade.

To project a meaningful flow of funds into corporate stocks (largely common), however, it was necessary to take some account of the effects of market appreciation, reflecting the value of retained earnings. If this appreciation should average 5 percent per annum in the years ahead—not an unreasonable assumption on the basis of past history and one consistent with the pursuit by fund managers of an aggressive program to increase and maintain a substantial position in equities—the composition of total portfolios would be approximately as shown in table V–9.

TABLE V–9.—POSSIBLE FUTURE ASSETS OF PENSION FUNDS CONCERNING INDIVIDUALS IN PRIVATE EMPLOYMENT, 1970, 1975, AND 1980

[Dollar amounts in billions]

Assets	1965 [1]		1970		1975		1980	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Book values:								
Common stocks	$25.5	30.0	$47.0	38.7	$62.0	38.8	$72.0	36.4
All other assets	59.5	70.0	74.5	61.3	98.0	61.2	126.0	63.6
Total	85.0	100.0	121.5	100.0	160.0	100.0	198.0	100.0
Market values:								
Common stocks	40.0	40.8	75.0	50.0	113.0	53.3	155.0	54.4
All other assets	58.0	59.2	75.0	50.0	99.0	46.7	130.0	45.6
Total	98.0	100.0	150.0	100.0	212.0	100.0	285.0	100.0

Note: For purposes of this calculation, the artificial assumption is made that no gains or losses are realized, so that changes in book values reflect only net inflows. The allocations of funds to common stock investment shown in table V–8 are assumed to apply to the preceding 4 years as well.

[1] Actual. Based on arbitrary allocation of life insurance company assets to reserves for insured pensions plus Securities and Exchange Commission data for trusteed funds.

The pattern of net financial asset acquisitions presented here is conjectural, to be sure, but it attempts to recognize several important changes which will or may occur. The striking feature is, of course, the projected decline in net acquisitions of common stocks after 1970. This possibility deserves to be recognized because of the following three factors or assumptions:

1. It is assumed that life insurance companies will greatly expand their equity investments in the next few years through the use of separate accounts. Similarly, trusteed funds are expected to be heavy investors in equities in order to increase the proportion in existing portfolios. The increase in the common stock component of the Bell System pension trusts is a substantial case in point. As a consequence of these factors, common stocks are assumed to increase from 30 percent in 1965 to 38.7 percent by the end of 1970 at book values, and from 40.8 percent to 50 percent at market values.

2. As the number of beneficiaries climbs in the years immediately ahead, funds accumulated under insured deposit administration contracts will be used to purchase guaranteed annuities for the pensioner. These funds, along with assets supporting existing deferred group and individual annuity contracts, will be invested largely in fixed-income securities. This is the dramatic maturing of pension promises, involv-

ing a doubling of the number of individuals drawing benefits between 1965 and 1973. It would be reasonable to suppose that at least $30 billion of the $130 billion in assets other than common stocks at market values projected for 1980 will be supporting insured annuity contracts on a guaranteed basis. If these are eliminated from the total, the proportion in common stocks would be close to 61 percent instead of 54 percent.

3. With increasing recognition of the fact that market, rather than book, values are the significant measure of assets and yields, it is assumed that portfolio decisions will be based primarily on the distribution of assets valued at average market prices. The fund, in reality, is recognizing the purchase of retained earnings with the receipts from average market appreciation. For example, for the year 1976, in terms of these projections, the pension funds will receive $7.7 billion in net additions to assets plus $5.65 billion in appreciation on the $113 billion common stock portfolio at the assumed average rate of 5 percent. The investment in equities is the projected $2 billion in cash plus $5.65 billion in appreciation, or a total of $7.65 billion, which represents 57 percent of total "net receipts" of $13.35 billion for the year.

Obviously, this possible projection is not susceptible of proof, and the declining allocation of funds to common stocks is not essential to our conclusions. This exercise in quantifying a possible change in trend serves its purpose if it only raises a question in the minds of those who make freehand extrapolations of the rising volume of net purchases of common stocks by these groups of investors. Even a stable level of net common stock acquisitions would mean a diminution of capital market influence. Such a stable allocation at, say, 60 percent of net additions to assets would produce the following results in 1980, using the same assumptions as in table V–9.

[Dollar amounts in billions]

	Book value		Market value	
	Amount	Percent	Amount	Percent
Common stocks	$93	47	$182	63
All other assets	105	53	108	37
Total	198	100	290	100

The relatively modest change in assets at market value is attributable to the delay in the projected cutbacks in stock purchases until after 1970 and 1975.

The reader may well conclude that this possible future allocation of funds is more probable than that shown in table V–8. However, even this higher level of acquisitions implies that, in a growing capital market, the influence of these investors in the market for corporate stocks has already reached its peak and will be declining in the future. On the other hand, the possible pattern in table V–8 would suggest a resurgence of influence in the markets for directly placed corporate obligations, mortgages, and real estate.

But these pension fund managers will continue to be a major factor in the market for common stocks outstanding in the hands of the public. The recent growth of block transactions on the New York Stock Exchange illustrates one of the adaptations of the market mechanism

which is necessary to handle the growing volume of turnover in institutional portfolios. Given the projected volume of equity holdings by 1980, it is evident that an adjustment in the balance between fixed- and variable-income securities can create substantial swings in the amount of net acquisitions. There is little reason to expect that purchases will be made at the even pace implied by table V–8. Nor, indeed, can it be accepted as a certainty that fund managers will inevitably continue their steady accumulation of common stocks through sustained or even brief periods of adverse experience. In short, much greater variability in net acquisitions of equity securities must be expected in the years ahead.

One final qualification to all these estimates and conjectures: If variable annuity pension plans spread widely among industrial employers, it will be necessary to modify substantially the entire range of possible asset acquisition patterns. Only the future can tell whether this is a real possibility. The increasing familiarity of the public with common stocks and renewed concern over inflationary pressures in the economy are factors conducive to the adoption of variable benefit plans. However, stock purchase plans, savings plans which include equity investments, and profit-sharing plans provide outlets for this interest in owning common stocks without disturbing the stability of fixed-dollar pension programs.

VI. The Impact of Pensions on the Capital Markets: Governmental Programs

Because of the widely differing characteristics of the various governmental retirement income programs, no general observations are applicable to the whole range of Federal, State, and local systems. It is necessary, therefore, to consider them separately as to present and future influences on flows through the capital markets.

FEDERAL GOVERNMENT PROGRAMS

OASDI

While by far the most important of all Federal programs to provide retirement incomes, the Old-Age, Survivors, and Disability Insurance program by its very nature is not an important factor in the capital markets. Asset holdings of the Federal Old-Age and Survivors Insurance Trust Fund and the Disability Insurance Trust Fund appear below:

[Book values in billions of dollars]

Yearend	OASI	Disability	Total
1956	22.5	----------	22.5
1957	22.4	0.6	23.0
1958	21.9	1.4	23.3
1959	20.1	1.8	21.9
1960	20.3	2.3	22.6
1961	19.7	2.4	22.1
1962	18.3	2.4	20.7
1963	18.5	2.2	20.7
1964	19.1	2.0	21.1
1965	18.2	1.6	19.8
1966	20.6	1.7	22.3

Source: Social Security Bulletin, Statistical Supplement, 1965, and SSB, July 1967.

The practice has been to maintain a contingency reserve of varying amounts in the trust funds. That is to say, an approximate balance is sought between payroll taxes and benefit payments so that the assets held by the trust fund increase or decrease by only small amounts from year to year. This means that the OASDI program plays only a minor part in Treasury debt management operations. The trust funds can, of course, participate in advance refundings and acquire public issues, but there are not likely to be important net sales or purchases from this source.

Federal Employees

In the 5 fiscal years ended June 30, 1965, the Federal Employees Retirement Funds acquired $5.5 billion of Federal Government securities as the trust funds grew at a steady pace to more than $15 billion. These funds, principally the Civil Service Retirement System, are far from fully funded by conventional actuarial standards. There has been no disposition on the part of the Congress to vote the necessary appropriations to fund the deficiency, and it appears likely that accumulations will remain modest.

Unless this pattern is changed, these retirement programs for Federal employees will not become important in management of the public debt. While receipts rose from a $2.0 billion rate in fiscal 1961 to $2.7 billion in fiscal 1965, expenditures showed an increase from $1.0 billion to $1.4 billion. The cost-of-living adjustment feature could cause pension payments to rise even more rapidly under certain circumstances.

Railroad Retirement

The assets of the Railroad Retirement account have shown no significant change for a number of years. A mature system, with an aging membership and faced with the need for periodic increases in contribution rates, the Railroad Retirement System is unlikely to show any growth in the years ahead. The present assets of $3.9 billion, furthermore, no longer represent an important accumulation of funds.

Armed Services and Veterans

While pensions to retired members of the armed services and veterans' benefits are significant components of aggregate transfer payments, they involve no participation in the capital markets. Benefit payments are current expenditures from general revenues as much a part of the Federal budget as regular salaries. It seems quite unlikely that any portion of accrued liabilities will be recognized through the creation of trust funds and the accumulation of security holdings. Thus, these large programs will not have any impact on the capital markets except, of course, as they may indirectly affect the budgetary position of the Federal Government, and, hence, its demand for funds.

Federal Government Programs as a Whole

Taken as a whole, Federal social security and pension programs produce a modest annual cash surplus on the average. If the administrative budget is in balance, the cash surplus is enlarged and publicly held debt is retired to this extent. (Or publicly held debt is increased less if the administrative budget is in deficit.) To this extent, Federal programs are a factor in determining the new money needs of the Treasury. On the basis of the past decisions made by the Congress in

repeated reviews and revisions of the applicable laws and appropriations, however, it seems most unlikely that these programs will ever be in a position to reduce substantially the publicly available supply of Federal securities. The capital markets impact of their operations will probably remain minimal, despite their extremely important role in redistributing income.

The growth of Federal investment accounts does, of course, raise some important questions about the rates of interest to be paid on special obligations because it determines the amount of contribution from general revenues in the form of interest payments. If only public issues are held in these accounts, other questions about the maturity distribution are bound to arise, especially when the Treasury is interested in some rearrangement of the structure of publicly held issues. As the economy has grown so much more rapidly than the Federal debt during the postwar years, however, these questions have become less pressing.

Periodically, proposals are made to employ funds of the trust accounts in public or even private investments. The financing of urban renewal, low-cost housing, or public projects for various purposes are most frequently suggested. If this course were pursued, the impact on selected sectors of the capital markets could be appreciable. No doubt the relevant markets and participating financial institutions would adjust to the new direction of fund flows, but in the process, we could expect a significant impact on yield relationships. Other factors remaining equal, it would seem logical to expect a narrowing of the differential in yields between direct Treasury obligations and the favored investment media.

A different question regarding Federal programs is whether any particular degree of funding (current recognition of the accruing costs of commitments) is either desirable or necessary. Federal employees and members of the armed services are not concerned about the goodness of their pension promises just because there is an inadequate sum, or nothing at all, deposited in a trust account for their collective benefit; they are quite content to rely upon the Federal taxing power. The basis for funding or lack of it seems to be largely traditional.

In the absence of other adjustments in the pattern of revenues and expenditures, full funding on an actuarial basis through the issuance of Federal securities would not change the position of the cash budget but would enlarge the administrative budget by recognizing the full cost of Federal Government services and national defense. There would be a higher debt service charge and a larger public debt. Recognition of the amounts owed to career public servants for deferred income payable in retirement would not really change their position. This is, of course, only one example of the vagaries of accounting in the public sector, where the matching of costs and revenues is seldom precise. It is simply a reminder to economic analysts that statistics on public and private debt should not be accepted as raw material for decisionmaking without careful study of the coverage of the data.

STATE AND LOCAL GOVERNMENT SYSTEMS

Evolution of Investment Management

As discussed in chapter II, the retirement systems of State and local governments are emerging as major participants in the capital

markets now, and will continue as such in the years ahead. If our projections are not wide of the mark, these systems represent one of the most dynamic groups of financial intermediaries. Attention has been devoted primarily to corporate pension programs during the last 15 years. It is high time that the changing role of these governmental systems be recognized as the most important single development affecting the capital markets of the next decade and more.[1]

Whether or not we have correctly appraised future growth in State and local government retirement systems, the dramatic changes in their investment management policies and practices are bound to have a major impact on the capital markets, a portion of which has been witnessed in recent years. These developments have been especially important because of the extent of the changes which have taken place.

Historically, the typical State or municipal pension fund was handled by the State or city controller as a part of the debt management function of his office. It was considered analogous to the management of the sinking fund for term bonds, and the choice of investments was similarly restricted. In 1942, for example, the assets of State and local retirement systems were distributed as is shown below:

	Amount (millions)	Percent of total
Cash and deposits	$72	3.9
U.S. Government securities	318	17.1
State and local government securities	1,342	72.0
Other securities	131	7.0
Total	1,865	100.0

Source: Bureau of the Census.

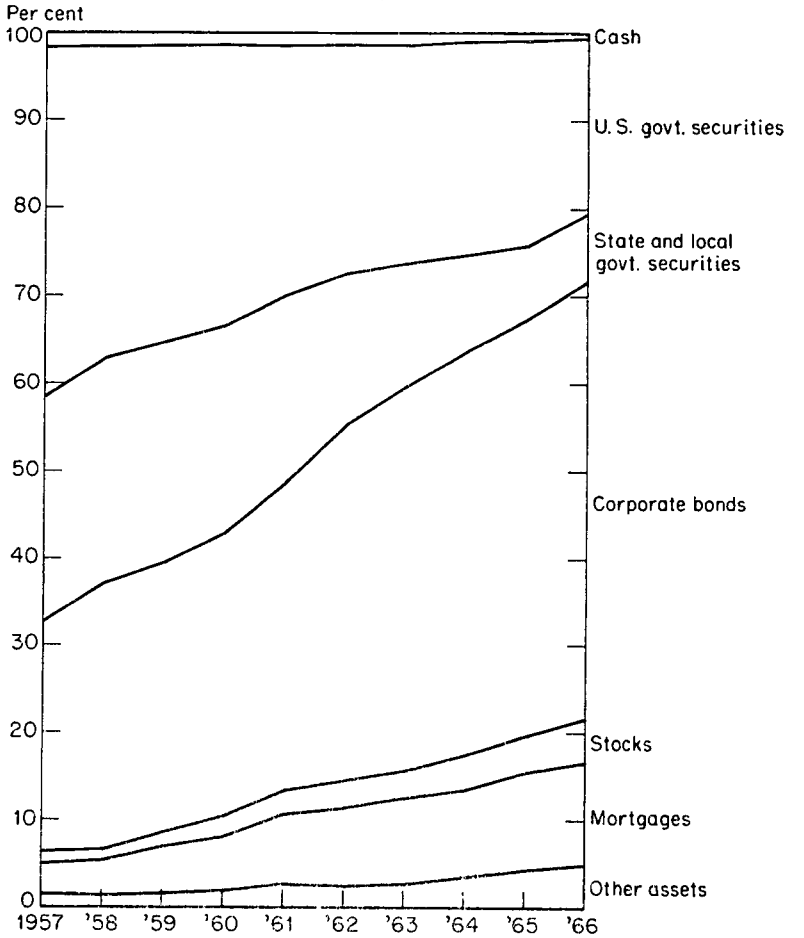
The increase in Federal income taxes, enhancing the value of the tax exemption privilege, and the low volume of State and local bond offerings caused a shift to U.S. Government securities during World War II. By 1947, over 70 percent of assets were in Federal securities and only 20.4 percent remained in State and local obligations. Other securities and mortgages, however, still represented less than 7 percent of the total.

By 1957, total asset holdings had grown to more than $11 billion. The low rate of return, contributing to the high cost of retirement benefits,[2] and the example of noninsured corporate funds fostered a continuing trend toward relaxation of statutory restrictions on eligible investments. The resulting change in the distribution of assets is shown in chart VI–1.

[1] These expectations may not be realized, of course, if full funding is abandoned by some of the more important governmental units. It is idle to speculate on whether or when this will occur, but the possibility must be recognized.

[2] The extreme case was that of the New York City Retirement Systems, which as late as 1959 were 72.6 percent invested in New York City bonds and 16.9 percent in U.S. Government securities. The deficiency of interest earned on their contributions below rates guaranteed to members of the systems between 1938 and 1964 aggregated $205 million. Maturities and sales of New York City bonds reduced the proportion to 32 percent of the $4.5 billion of assets on June 30, 1966. Nevertheless, the remaining $1.4 billion of city bonds represents 57 percent of all tax-exempt bonds held by State and local government retirement systems. Almost one-half of the bonds will mature during the next decade.

CHART VI–1.—Portfolios of State and Local Government Employee Retirement Funds, 1957–66



Source: Bureau of the Census.
NOTE: Book values, end of fiscal year.

The net acquisitions of financial assets between 1957 and 1966 fiscal yearends are shown in table VI–1.

TABLE VI–1.—ASSETS OF STATE AND LOCAL GOVERNMENT RETIREMENT SYSTEMS, FISCAL YEARS 1957 AND 1966

[In billions of dollars]

Assets	1957	1966	Net change
Cash and deposits	0.2	0.3	0.1
Federal Government securities	5.1	7.0	1.9
State and local government securities	3.3	2.5	−.8
Corporate bonds	3.4	17.7	14.3
Mortgages	.4	4.1	3.7
Corporate stocks	.2	1.8	1.6
Other assets	.2	1.8	1.6
Total	12.8	35.2	22.4

Source. Bureau of the Census.

Net acquisitions of corporate bonds during this period, it will be observed, equaled the similar total for the much larger private trusteed funds during a comparable period. These were predominantly high-quality publicly offered bonds. Mortgage lending has expanded substantially in a few large funds and the pace of mortgage acquisitions has been accelerating. The relaxation of statutory restrictions on common stock investments has been proceeding at a slow pace. In general, the retirement systems have not fully utilized the permitted leeway because of accounting conventions and other problems.

A change in the distribution of assets tends to reflect the decisions of a relatively small number of very large funds. Assets are highly concentrated in relatively few systems. State-administered funds in six States, together with the New York City Retirement Systems, accounted for 53 percent of the $35.2 billion book value of assets at the end of the 1966 fiscal year. Another nine large State systems accounted for an additional 15 percent of the total.[3] In contrast, the 50 companies and union groups with the largest industrial plans accounted for only 37 percent of total assets in 1964, and the top 15 corporate employers accounted for less than 24 percent of the total.

Put another way, there are now 10 individual State and city retirement systems each with more than a billion dollars of assets. The pension funds of corporate giants like Du Pont and Western Electric have just crossed that figure. It is no exaggeration to characterize the leading State retirement systems as the giants of the pension field.

Some years ago, this writer suggested that one might usefully compare the diversification of State and local retirement systems with that of corporate trusteed pension funds a decade earlier.[4] With State and local government securities excluded from the 1958 totals, the comparison was as shown below:

PERCENT OF TOTAL ASSETS AT BOOK VALUE

	State and local government retirement systems, 1958	Corporate trusteed pension funds, 1948
Cash	2	3
U.S. Government securities	46	39
Corporate bonds	42	43
Corporate stocks	2	11
Other assets, including mortgages	7	4
Total	100	100

By updating this kind of comparison, we can measure the lag in the investment policies permitted and pursued by managers of the State and local funds:

[3] The six largest State aggregations of capital are in California, New Jersey, New York, Ohio, Pennsylvania, and Texas. The above figures somewhat overstate the case because State teacher and public employee retirement systems, as in New York, may be administered by different trustees. However, the statutory authority is usually the same for all systems and there is a tendency for generally similar policies to be followed. (Ohio's three systems are perhaps an exception.)

[4] "Retirement System Investments," *Report of the 44th Annual Convention of the National Association of State Auditors, Comptrollers, and Treasurers, 1959*, pp. 114–119 (reprinted as "New Investment Policies Loom for Public Retirement Systems," *Commercial & Financial Chronicle*, Oct. 1, 1959).

PERCENT OF TOTAL ASSETS AT BOOK VALUE

	State and local government retirement systems, 1966	Corporate trusteed pension funds, 1956
Cash and deposits	1	2
U.S. Government securities	22	14
Corporate bonds	54	51
Corporate stocks	6	26
Mortgages	13	2
Other assets	5	5
Total	100	100

The striking differences are, of course, the persistent lag in common stock investment and the surge in mortgage lending during the past 8 years.[5]

In summary, then, we can observe that State and local government retirement systems in the last 15 years have ceased to be captive markets for governmental securities. They have entered the private capital markets on a large scale—notably the corporate bond market, more recently the mortgage market—and the market for corporate common stocks on a modest scale. They have increasingly sought professional investment advisory services and become conscious of rate of return and investment management performance.[6] They are somewhat better prepared than in the past to follow the lead of private funds in improving the earning power of their assets. Will they follow? How far?

Restraints on Investment Management

Because they have been in existence longer, State and local retirement systems have a somewhat higher level of benefit payments relative to the total of contributions and interest earnings. The contrast with corporate trusteed plans is shown below:

[Dollar amounts in millions]

	State and local Government retirement systems, 1965–66		Corporate trusteed pension funds, 1965	
	Amount	Percent	Amount	Percent
Employer contributions	$2,630	45.6	$4,368	57.5
Employee contributions	1,771	30.7	581	7.6
Earnings on investments	1,370	23.7	2,111	27.7
Other income and capital gains	----------	----------	545	7.2
Total receipts	5,771	100.0	7,606	100.0
Benefits and expenses	[1] 1,859	32.3	2,040	26.8
Withdrawals	359	6.2	----------	----------
Total disbursements	2,218	38.5	2,040	26.8
Net additions to assets	3,553	61.5	5,566	73.2

Source: Bureau of the Census and Securities and Exchange Commission.

[1] Benefits only; expenses were not reported to Census Bureau.

[5] My own projection for 1968 will apparently be close to the mark, except that I underestimated the substitution of federally insured and guaranteed mortgage investments for direct U.S. Treasury obligations (*ibid.*).

[6] This trend is illustrated by the fact that in recent years consultants have been retained to study the investment management policies and procedures of a number of public funds. One of these studies, made by this writer, was published in January 1964 by the New York State Teachers Retirement System as part of the report of the Review Committee of the Retirement Board.

Relatively large employee contributions, usually credited to an "annuity" fund as distinguished from the "pension" fund, become almost like a savings account, which the employee usually can withdraw upon termination of employment and often can borrow against. In conventional accounting terms, this fund from employee contributions prior to retirement has some characteristics of a deposit-type liability. A stable rate of interest is paid upon it and some withdrawals are inevitable.

Furthermore, a number of systems are not being funded on an actuarial basis by adequate contributions from the units of Government. The claims or equity of employees may in fact be a large proportion of the total assets on hand. In the two Massachusetts State funds, for example, benefits and withdrawals represented 58 percent of contributions. The locally administered systems in Illinois show a ratio of 60 percent. In such cases, it is not surprising to find bond investments constituting practically all of the systems' portfolios.

Typically, there is no provision for dealing with capital gains and losses except to include them in the current year's "earnings." The "lock-in effect" is powerful after a long period of rising interest rates. Similarly, there are no systematic provisions in general use for recognizing more than current dividends from a portfolio of common stocks. Their purchase may tend to depress the important rate of return on employee contributions. This writer's argument for shifting to a market-value basis for valuation, rate of return, and performance measurement (or in the alternative to the use of capital gain and loss reserve accounts) has received little or no acceptance among retirement system administrators.[7]

More imaginative investment policies are inhibited by a number of other factors. Retirement system trustees are not chosen just for their knowledge of and experience with investments. They have other important duties to perform as well. The practice of seeking to secure competent investment advice by competitive bidding, the inability to pay adequate salaries for expert staff, and the apparent unwillingness to lay out even very modest sums for investment management are all factors conspiring to produce uninspired and mediocre portfolio management. Despite the great progress of recent years, few systems have adequate staffs, strong investment advisory arrangements, effective finance committees, and the capability of providing first-rate management. These former sleeping giants of the pension-fund field sometimes appear to be only partially awake.

Under the circumstances, it is doubtful that State and local retirement systems will soon break out of the statutory, accounting, and institutional restraints on their effective management of huge aggregations of capital. While the high cost of pension benefits will create increasing pressure to improve rates of return, it is not likely that the public systems will greatly accelerate the pace at which they follow private funds. Nor is it likely that they will be as flexible in approaching investment opportunities as they occur in the future of a dynamic capital market structure.

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[7] See "Rates of Return: Standardizing Measurement," a paper presented at the Second Annual Conference for Public Pension Fund Administrators at New York University on Apr. 29, 1966. Reprinted in *Commercial & Financial Chronicle*, May 26, 1966.

FUTURE CAPITAL MARKET FLOWS

Federal Government Programs

As discussed at the beginning of this chapter, the Federal Government's employee retirement programs have only a minimal impact on the capital markets. Principally, their operations are relevant to management of the public debt.

There is no evidence to suggest that future trust fund accumulations will average appreciably higher than in recent years. Although the Treasury is afforded some flexibility in debt management as a result of its captive market for some public issues, it is difficult to see how this provides much leverage on the recurrent task of funding and refunding operations. Accordingly, we conclude that the operations of Federal pension programs are unlikely to have any important effects on the capital markets in the near-term future.

State and Local Government Systems

The retirement systems of State and local governments, in contrast, seem destined to be increasingly important factors in major sectors of the markets for investment funds. The most startling of Holland's projections was the potential growth in these funds. Although to date actual additions to asset holdings have modestly exceeded his projections, it is well to recall his warning about the reliability of projections beyond 1975. Nevertheless, the approximate doubling of employees potentially eligible for coverage between 1965 and 1980 is not unreasonable. High coverage and liberal benefits appear inevitable.

On a calendar-year basis, Holland's projections [8] were as follows for fund levels and annual increase in assets in selected years:

[In billions of dollars]

Year	Fund accumulations	Net addition
1965	32.6	2.9
1970	50.7	4.2
1975	76.9	6.0
1980	114.9	8.9

The net demand for financial assets generated by these State and municipal funds *could* surpass that of pension programs for individuals in private employment during the year 1979. Whether or when this actually occurs is not as important as the suggestion that, as an emerging capital market factor, it is this sector, rather than the private programs, which should engage our attention when we look to the future instead of recounting the past.

Table VI–2 suggests a possible future pattern of acquisitions of financial assets. To repeat, it must be obvious that capital market demands, relative rates of return, the pace of relaxation of statutory restraints on investment selections, and the institutional arrangements made to manage these portfolios will determine what *actually* happens. The projection is presented simply in order to illustrate what current expectations suggest.

[8] Table 50, p. 131, adjusted from fiscal to calendar years.

TABLE VI-2.—POSSIBLE FUTURE NET ACQUISITIONS OF FINANCIAL ASSETS BY STATE AND LOCAL GOVERNMENT RETIREMENT SYSTEMS, 1970, 1975, AND 1980

[In billions of dollars]

	1965 [1]	1970	1975	1980
Cash and deposits	[2]	[2]	[2]	[2]
U.S. Government securities	−0.1	[2]	0.2	0.4
State and local government securities	−.3	−0.2	[2]	[2]
Corporate bonds	2.3	2.0	2.5	3.1
Mortgages	.6	1.0	1.3	2.0
Corporate stocks	.4	.9	1.4	2.5
Other assets, including real estate	.4	.5	.6	.9
Total	3.3	4.2	6.0	8.9

[1] Estimate for calendar year based on estimates and interpolation between fiscal year data.
[2] Negligible.

The general assumptions implicit in table VI–2 include: (1) Changes will come gradually as in the past. (2) The reduction in holdings of State and local government securities will continue for several years, but about two-fifths of present holdings will be retained indefinitely for special reasons. (3) The trend toward mortgage and real estate activity will continue strong, probably stimulated by a strong housing demand around 1970 and the subsequent years. (4) Common stock purchasing will continue to lag, but eventually it will exceed one-quarter of net flows, moderately stimulated by the adoption of variable annuity options in scattered instances. (5) Mortgages and corporate bonds may be considered interchangeable asset holdings with mortgages obtaining a somewhat larger share of the systems' investment flow. (6) At some point in the future, the Federal Government will offer securities to this type of investor which are relatively more attractive than at present.

There is no presumption that State and local government retirement systems, taken as a whole, will succeed in eliminating all of the archaic statutory, accounting, and institutional constraints on effective asset management. Some relaxation is expected, however, as the very size of outlays for retirement benefits creates a demand for the more productive employment of funds.

The pattern presented here is consistent with the conclusion expressed earlier that these retirement systems will lag behind developments in the pension programs for individuals in private employment and will not follow their lead in a number of respects. This can be illustrated by trying the 10-year test—that is, comparing the 1975 pattern of asset distribution, exclusive of holdings of State and local government securities, with the actual distribution of corporate trusteed pension funds in 1965.

PERCENT OF TOTAL ASSETS AT BOOK VALUE

	Projected State and local government retirement systems, 1975	Corporate trusteed pension funds, 1965
Cash and deposits	1	1
U.S. Government securities	10	5
Corporate bonds	49	39
Mortgages	18	5
Corporate stocks	14	45
Other assets, including real estate	8	5
Total	100	100

Our projections, in short, presume that in the future State and local government retirement systems will not pursue the policies of corporate trusteed funds because they will also be following, in part, the traditional practices of legal reserve life insurance companies. Even by 1980, our projections would produce an asset distribution only moderately closer to that of the corporate funds of 1965.

Percent of Total Assets at Book Value, 1980

Cash and deposits	1
U.S. Government securities	8
Corporate bonds	45
Mortgages	19
Corporate stocks	18
Other assets, including real estate	9
Total	100

Nevertheless, if these projections as to both the volume and distribution of fund flows through State and local government retirement systems are at all reasonable, a major financial institution will have emerged in another decade. Now managing assets equal to 57 percent of those of all mutual savings banks, these systems could be handling assets 75 percent as great by 1975. Just as growth to date has brought a material improvement in investment management, we can anticipate continued progress in the quality of personnel and sophistication in dealing in the securities market.

As investors in common stocks, however, it is not likely that the system portfolio managers will depart from the current pattern of dollar-cost-averaging a broad list of high quality issues. Our projections suggest the accumulation of more than $10 billion at book value by 1975 and over $20 billion by 1980. On the assumption of 5 percent per annum appreciation, the 1980 portfolio would be worth over $28 billion, but might still represent only 23 percent of total assets at market value. If annual purchases reach the $2.5 billion level by that date, however, these systems will be a factor in the stock market even if their turnover in existing holdings remains at a relatively low level.

Some variable annuity plans have been adopted by State and local governments, but other methods such as a fixed rate of increase in benefits to meet rising living costs have also been employed. At this time, it is difficult to tell whether equity funding, especially for teachers, will spread widely. If it should, of course, the effect upon the volume of projected net acquisitions of common stocks would be substantial.

The picture which emerges is of an eminently respectable, slow moving, conservatively oriented structure of financial institutions performing an important function with care and prudence. As competitive factors have encouraged risk-taking in other institutions, the question has frequently been asked: "But who is going to hold the really high quality investment securities?" Here is the answer: State and local government retirement systems. Their capacity to do so should be reassuring.

VII. Concluding Observations

We have seen that the economic aspects of pensions are as broad as the flows of income, consumption and saving, and the network of

public and private arrangements which characterize an urban industrial society. We have reviewed the creation and development of a mammoth pension structure and have attempted to preview its future growth and progress in attaining maturity. In the process of looking at these several segments of the whole, we have been at pains to remind the reader that pensions are not a separate structure but a part of the warp and woof of the fabric of our economy. The purpose of this chapter is to reflect briefly on some of the implications of this study of economic aspects of public and private pensions.

IMPLICATIONS FOR SAVING AND ECONOMIC GROWTH

The social security and other pension programs of the Federal Government, we have seen, act to sustain consumption and to depress the ability of individuals to save. The present system of payroll taxes to finance the OASDI system is less powerful in this direction than the financing of noncontributory programs through general revenues. It is simply not possible to lift living standards of the aged without the redistribution of income which these and other fiscal activities involve. The size and especially the prospective growth of these redistributive arrangements should, however, be taken into account in any appraisal of the influence of the total Federal tax structure on economic growth.

The pension plans covering employees of State and local governments and individuals in private employment, to the extent that they are systematically funded, generate saving which is substantially a net addition to total saving in the economy. This is especially significant because the saving permits investment in business capital and housing. The flow of funds to finance business plant and equipment, inventories, research and development, and trade credit plays an increasing role in enlarging and improving the efficiency of productive capacity.

On the basis of our projections, the net flows into the markets for corporate securities and mortgages from both State and local government and private pension plans will increase from $10.4 billion a year in 1965 to more than $12 billion by 1975 and over $14 billion by 1980. These figures for net flows ignore the funds also provided in the form of corporate retained earnings of portfolio equity securities. To that extent, the projections represent an understatement of the volume of business capital financed. In any event, unless there is a major change in the trends presently indicated, it is clear that while these funds will finance a growing amount, they will contribute a diminishing share to the growth of capital assets in the business sector. This may or may not be disturbing to our expectations for economic growth, depending upon how we anticipate developments in other influences on the saving and investment process.

The projections, of course, are only an expression of the probable net effects of many influences. The realization of substantially higher returns can depress the level of contributions and of pension savings. An acceleration in the pace of the extension of coverage, in the trend toward more liberal vesting provisions, and in the rate of funding can continue to increase the rate of pension saving for another span of years. Our analysis of the working of the pension structure is, therefore, more illustrative than predictive.

Our exploration of the question of the burdensomeness of pension arrangements suggests that there is no precisely determinable level of what the economy can afford without sacrificing some of its vitality and potential for growth. The size of the net burden attributable to the structure of benefit programs is apparently not great, especially if the plans for employees of State and local governments and private organizations continue to carry an important share of the provision of benefits.

The need for improved data and techniques for the measurement of the gain-loss patterns involved in huge transfers of income has been demonstrated by our analysis. The fruitfulness of further investigation and research in this area is evident for the informed evaluation of the economic consequences of alternative courses of action.

To set tax-supported pension programs apart from all of the other fiscal operations of government and to attempt to assess their influence on incentives and productivity gains is to create an artificial and unreal framework of analysis. Rather, the issue of what we can afford in the way of old-age income provision must be considered together with the whole range of public policies which affect the returns to different factors of production. Indeed, the interrelations between these and other public welfare objectives must be examined and constantly reexamined in a changing economic environment.[1] It is idle to appraise the influence of pension commitments running far into the future apart from the whole range of commitments being made in other areas. What we can afford, in some meaningful sense, is the total share of real output that can be diverted from the factors of production which provide it without impairing the incentives and motivations for continued expansion and growth.

IMPLICATIONS FOR ECONOMIC STABILITY

Pension and disability benefits clearly operate as contracyclical influences in the direction of economic stability. Retirements tend to increase when employment opportunities wane. The level of contributions, especially in private plans for the funding of past service liabilities and in profitsharing plans, is sensitive to changes in corporate profits. Income maintenance is aided by rising benefits in periods of slack employment, and pension saving declines slightly in periods of less active demand for business capital investment.

In any case, the regularity of benefit payments is another of the built-in stabilizers in the economy.[2] Public and private pension programs will continue to provide a growing share of the income payments not susceptible to cyclical variations in aggregate economic activity.

The question has been raised as to whether pension saving is not too stable in times of deficient aggregate demand for consumer goods and services. As a consequence, it is argued, the cyclical changes in saving rates which contribute to stability are muted by the regularity of pension saving.[3] One answer is that the limits on the variability of pen-

[1] See this writer's "The Future of Private Pensions: Some Economic Aspects," *Journal of Risk and Insurance*, March 1967, pp. 27–32.
[2] Cf. Arthur F. Burns, "Progress Towards Economic Stability," *American Economic Review*, March 1960.
[3] [Nelson D. McClung] *Old Age Income Assurance: An Outline of Issues and Alternatives*, U.S. Congress, Joint Economic Committee, November 1966, p. 18.

sion saving are not entirely indigenous to the pension structure. In the case of private plans, indeed, corporate managements have preferred to use variable contributions as a method of averaging income. Public regulation to assure the fulfillment of pension promises seeks to regularize contributions and so does the Internal Revenue Code. Financial analysts and the public accounting profession seek regular recognition of pension costs as they are incurred and not when flexible contributions are actually made to the fund.[4] Also, variability in employer contributions is not feasible under the budgeting practices of State and local governments.

Essentially, however, the reality is that pension systems are not well designed to provide variability in saving flows. The long-term nature of their contracts calls for regularity in provisions to meet them. Finally, equity investment is a major outlet for the saving flow, and there is some presumption that rates of return will prove higher on investments made during periods of slack economic activity. The stabilizing influence of pension fund investing on the secondary market for equity securities would diminish if pension saving flows were permitted to be highly variable.

One of the most important aspects of economic stability is the question of inflation. We have repeatedly observed that inflation can erode the value of pension promises and warned that, unless the burden of income transfers is willingly borne by the working members of society, they will acquiesce in policies which lighten the burden by inflation. This unfortunate outcome of the pension movement is not now in sight. But, neither has the full burden been felt. The volume of claims to be presented has only well begun its long rise. Capital formation at a high level has spurred real output. Pension saving in the future may contribute less to this progress if, in fact, saving is the limiting factor on economic growth.

As we move into the period of substantial rise in benefit payments and witness the diminishing pace of pension saving, it will be necessary to adjust fiscal policy to the changing situation. Again, the availability of more precise measures of possible future effects of income redistribution through pension programs will be required to judge the adjustments most appropriate to the emerging situation.

IMPLICATIONS FOR THE CAPITAL MARKETS

The stability of net fund flows makes pension systems almost unique among the major suppliers of funds to the capital markets. Apart from the mild cyclical fluctuations mentioned above, no unpredictable changes in inflows need be anticipated by the portfolio manager. Another unique characteristic is the absence of valuation problems. There is no requirement, as with a deposit-type financial institution or a life insurance company, to demonstrate on a certain day an excess of assets over liabilities on the basis of some prescribed or conventional valuation of assets.

These two salient characteristics, the absence of both liquidity and published statement requirements, impart different dimensions to

[4] Ernest L. Hicks, *Accounting for the Cost of Pension Plans*, Accounting Research Study No. 8, American Institute of Certified Public Accountants, 1965.

the portfolio management decision to be made in relation to the long-time horizon of pension commitments. Despite competitive pressures to show good performance, the outcome of decisions is still to be judged over an extended period of time. If the illiquidity of a financial asset carries a premium in yield, pension funds are in about the best position to capture it. Hence the evolution of portfolio management has been steadily in the direction of holding less liquid assets, even in State and local government retirement systems.

The stability of lending and investing in the capital markets obscures some variability in the pace of forward commitments for directly placed corporate obligations and mortgage loans. The tendency to enlarge forward commitments in periods of strong demand for funds may have the effect of contributing to a situation in which idle balances are being activated and velocity is rising. However, there can be no important shift into claims on pension funds and pension fund managers have little capacity or inclination to supply liquid assets, such as Government securities, to holders of idle balances.[5] The important role of these funds, therefore, is as a rather neutral financial intermediary between savers and investors, with little impact on income velocity or the money markets.

We have observed that both State and local government and private plans, as suppliers of loanable funds, have shown a strong preference for corporate securities. Our projections for the future show a continuation of the growth of participation in the area of real estate finance. Slow but steady progress has been made in solving the administrative and expense problems of handling mortgages. It is now possible for a pension fund to secure most of the services normally encompassed in home-office administration from organizations which economically perform these functions. A mortgage portfolio can be handled with almost the ease and economy of a bond portfolio. If net yields after allocated expenses are competitive, risk factors considered, there will undoubtedly be a substantial growth in pension fund mortgage lending across the Nation in conventional as well as FHA-insured and VA-guaranteed loans. By the late 1970's, the volume could easily be comparable to the average net acquisitions of mutual savings banks in recent years.

The ownership of real estate equities would appear to be a natural avenue of investment. Sale and leaseback financing has been, in fact, a growing outlet. The tax-exempt status of a private pension plan, however, can be impaired by engaging in an unrelated business. The operation of income-producing property, especially if the purchase is financed with borrowed funds and only an equity position is retained, is susceptible to being considered such an unrelated business. The tax benefits from accelerated depreciation to a real estate operator, and his ability to introduce substantial financial leverage, usually justify his paying a higher price for property than a pension fund is prepared to pay without these possibilities. Hence, pension fund ownership of true real estate equities is not likely to grow rapidly in the years ahead.

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[5] For a full discussion of these points, see Victor L. Andrews, "Noninsured Corporate and State and Local Government Retirement Funds in the Financial Structure," in *Private Capital Markets*, Englewood Cliffs, N.J., 1964, especially pp. 465–481.

Corporate equity securities, we have seen, are likely to continue to occupy a major position in privately organized pension programs and to become increasingly important in State and local government retirement systems. Common stocks have historically produced a higher total yield than bonds or mortgages for the holder in a position to accept price volatility and irregularity in the realization of long-term rates of return. Pension funds are particularly well situated to accept these disadvantages of corporate equity securities. The principal limitation on their role is the need to support guaranteed annuity contracts and the problems with stocks as an investment medium for employee contributions subject to withdrawal and borrowing privileges.

In the accumulation of pension fund assets for the provision of future benefits of indeterminate amount, common stocks have especially desirable characteristics. The recent changes in life insurance operations to provide for separate accounts for corporate stocks should stimulate the rate of accumulation over the immediate future. Whether the benefits of equity investment will be more widely shared with present and future pensioners by use of the variable annuity contract is less certain. The 15-year record of the College Retirement Equities Fund in providing variable benefits for educators is persuasive of the merits of this approach, but many employee groups are not anxious to trade off the certainty and stability of retirement income for the possibility of a materially higher but fluctuating average level of benefits. There are also communication problems involved, and CREF's experience may not be readily transferable to other situations. Nevertheless, a trend toward the greater use of variable annuity arrangements is the most important single factor which might affect our projected capital market flows.

Our projections show modest purchases of U.S. Government securities at some point in the future and an early cessation of net liquidation. This reflects the assumption that in the course of an orderly approach to public debt management the 4¼ percent interest rate ceiling on long-term bonds will be removed and that the Treasury will find occasions to offer securities which are attractive in comparison with alternative investments in terms of yield, freedom from an early call provision, and marketability. There is always room for marketable securities, especially as the concentration in direct placements, mortgages, and common stocks limit flexibility in portfolio management at times.

Fund management has been criticized both for being too cautious and for accepting too great risks.[6] Equating the proportion in common stocks with high risk ignores what we know of the role of diversification—the right combination of high-risk equities, with a minimum of covariance between them, can comprise a portfolio with very limited risk. The investment of pension funds in unseasoned, marginal enterprises, on the other hand, clearly raises questions as to whether the trustees are observing the long-established standards of the prudent-man rule.

There has not been any visible pattern of relating the aversion to risk in the pension fund portfolio to the risk characteristics associated

[6] See, for example, *Old Age Income Assurance*, pp. 19–20.

with the enterprises which contribute to it. If there were, we should expect to find the highest acceptance of risk among pension funds for State and local government employees or public utilities. Conversely, the greatest aversion to risk should be characteristic of plans for employees in highly cyclical or chronically unstable activities. Actually, almost the reverse is true. This may be a result of transferring to fund investment management decisionmaking the attitudes and outlook most frequently applied to the organization's internal investment decisionmaking.

Generalizations about the cautiousness of fund managements are, therefore, difficult to make. All kinds of portfolio policies are emerging and being followed. The spectrum of policies is nearly as broad as the range of investment opportunities. Over time, the funds will flow to the areas of the best returns, the allowance for risk being taken into account not perfectly but at least rationally.

Within the framework of recognized standards of fiduciary responsibility, then, the flow of pension saving will continue to spread through most segments of the capital markets. It is not material if these funds acquire predominantly seasoned equity securities, for example, because those who sell to pension funds may be in a position to reinvest in companies with greater risk exposure. In an aggregate flow-of-funds view of the capital markets, the significant factors are aggregate sources and uses, the absence of compartmentalization of markets, and a market structure which permits prompt responses to changing demands.

The growth of insured and noninsured pension plans for individuals in private employment, because of their flexibility in the allocation of saving flows, has probably done more than any other single development to improve the breadth and responsiveness of the capital markets to changing patterns of demand. They provided a major remedy to the shortage of equity capital in the period immediately following World War II, as evidenced by the subsequent recovery in the value of corporate earning power to previous levels. They have contributed to a closing of the yield differential between directly placed and publicly offered corporate bonds in the upper-quality ranges. They may have aided the responsiveness of certain classes of mortgage yields to bond yields.[7]

The picture which emerges is of an additional source of funds for the capital markets with a minimum of permanent commitments to any particular sector of those markets. In the years ahead, we can anticipate somewhat greater flexibility in the allocation of fund flows and greater responsiveness to yield differentials which express the comparative intensity of demands for funds. Our projections are illustrative of possible patterns of response, but what actually takes place will be a function of the changing pressures in the marketplace. On balance, these public and private pension accumulations have made a major contribution to the efficiency of the capital markets in channeling funds to the most productive areas of investments.

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[7] More definitive conclusions on these points will emerge from the National Bureau's interest rate study. See Joseph W. Conard, *The Behavior of Interest Rates: A Progress Report,* New York, NBER, 1966.

IMPLICATIONS FOR FINANCIAL INSTITUTIONS

The increasing readiness of noninsured private pension trusts and State and local government retirement systems to participate in the mortgage market on a much larger scale suggests that life insurance companies, savings and loan associations, mutual savings banks, and commercial banks will find new competition for loans. Some of these institutions have already been working to establish relationships and to provide essential services to fund administrators. Mortgage bankers are also active in tailoring their facilities to these new markets. Such arrangements and correspondent services will undoubtedly develop further.

Efforts to develop a secondary market for mortgages seem unlikely to engage the interest of pension fund portfolio managers. The possibility of resale is well down on the list of desired objectives. Greater uniformity of mortgage terms and characteristics would, however, be an attractive feature of mortgage market developments.

Unless there is a major change in the saving habits and motivation observed in our study, other financial institutions will have good markets for financial services which either supplement or complement pension saving. Mutual fund plan accounts, efficient financing of household capital, additional life insurance protection, and variable savings accounts are a few of the possible areas of growth which may be stimulated by the extension of pension coverage.

IMPLICATIONS FOR PUBLIC POLICY

The Cabinet Committee appointed by President Kennedy chose as the title of its report "Public Policy and Private Pension Programs." Major sections of that report dealt with economic aspects of pension growth and the public interest in private pensions. Although it is not within our province to make or endorse policy recommendations, certain of our findings are relevant to the Committee's analysis.

The Committee recognized that it is essential to the operation of public and private pension programs that the highest standards of fiducial responsibility be maintained. More complete disclosures of portfolios and changes in them were recommended. Also, the Committee advocated strengthening statutory provisions for enforcing recognized standards of fiducial responsibility in preference to the application of regulations or formulas which would reduce the flexibility of asset management.

Our analysis of portfolio management indicates that diversity and flexibility of investment decisions account for much of the contributions of these funds to the more efficient functioning of the capital markets. At the same time, we have found no reason to conclude that more complete disclosure to participants would hamper portfolio management.

Another relevant issue of public policy is the question of concentration of economic and financial power. Limitations on the purchase of employer securities in private funds have long been recognized on the grounds that collateralizing a promise with the promisor's evidence of debt or a share in its equity is no security at all. At the same time, this type of limitation seeks to prevent use of the pension funds for pur-

poses of control, support of the market for employer securities, facilitating acquisitions or control of other companies, and in other ways transforming the fund into an agency for purposes other than its intended one, the funding of pension commitments. In this report we have accepted the view that the governing considerations in portfolio management decisions will be comparative yield expectations and not the search for control or opportunities to exert influences on portfolio companies.

Certain safeguards are already operative. The most important is the established requirement that a trustee show undivided loyalty to his trust. Conflicts of interest must be avoided. The record of life insurance companies and bank trustees is excellent in this respect. Economic pressures are equally powerful in the same direction. Increasing emphasis on the quality of investment management to reduce the cost of pension benefits has strengthened the competitive forces at work. As large employers have divided their funds among a number of bank trustees or placed different funds under the management of different trustees, the measurement and appraisal of results have emerged as a practical prohibition against any course other than strict attention to the business of investing.

It is true, of course, that some very large concentrations of assets are emerging, particularly in the case of State-administered public employee retirement systems. Despite a few lapses from undivided loyalty to their participants, public fund administrators also have an excellent record of probity. Examinations of many cases by State insurance departments reinforce the system of internal controls. The trustees of these systems have their good names, and often public office, at stake in the administration of the retirement systems.

Admittedly, it is not feasible for a State retirement system to split its assets among several trustees as industrial corporations have frequently done. But concern is more properly with lethargy and lack of flexibility in asset management which may affect these large pools of capital, especially when governmental units show reluctance to employ qualified staffs to deal with financial management responsibilities of these proportions.

Our study suggests, therefore, that competitive factors and greater disclosure are exercising strong pressures against the abuse of economic and financial power. It is clearly appropriate, however, that these issues in the realm of public policy should be examined and debated. In a relatively short span of years, public and private efforts have brought major new financial institutions into being. Mass coverage of the contingency of loss of income because of age or disability has been extraordinarily successful and shows promise of even further development. It is only prudent that we should take stock of both the economic and public policy issues which emerge, in this case, from the realization of accomplishments beyond our expectations. We can only hope that this kind of review will take place again and again, each time with better grounds for reaching judgments. We can also expect that it will become common knowledge that the validity of pension promises ultimately rests on the capacity of our economy to grow in productivity and to achieve higher standards of living for citizens of all ages.

PENSION FUNDS OF MULTIEMPLOYER INDUSTRIAL GROUPS, UNIONS, AND NONPROFIT ORGANIZATIONS*

BY H. ROBERT BARTELL, JR.,† and ELIZABETH T. SIMPSON‡

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*Occasional Paper 105, National Bureau of Economic Research, New York, 1967. This report is one of a series emerging from an investigation of pension plans made possible by grants to the National Bureau from the Maurice and Laura Falk Foundation and the Life Insurance Association of America. These organizations are not, however, responsible for any of the statements made or views expressed.

† Northwestern University.

‡ National Bureau of Economic Research.

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(*Resolution adopted October 25, 1926, as revised February 6, 1933, and February 24, 1941.*)

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In the planning and review of its pension studies, the National Bureau has benefited from the advice and guidance of this committee. The committee's concurrence with the views expressed in this report, however, is not to be assumed. The members of the committee are:

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The authors acknowledge responsibility for errors that still remain in these papers.

H. ROBERT BARTELL, JR.
ELIZABETH T. SIMPSON.

FOREWORD

Gaps in available data are not an unusual discovery in the exploration of a field as broad as public and private pensions. Early in the National Bureau's research project on the economic aspects of pensions, it became evident that data on the relatively new multiemployer and union pension programs were not available in enough detail to indicate their size, rate of growth, and portfolio composition. Comparable data were also incomplete even for the long-established plans of nonprofit organizations. Lack of convenient sources of information, rather than any lack of interest, seemed responsible for these particular gaps in the otherwise comprehensive measurement of saving and investment in the field of private pensions.

This third report from the pension research project seeks to remedy these deficiencies in basic information.[1] The results have been especially useful to Government agencies in revising their time series data on the private pension structure. The findings have also materially aided in the displacement of widely circulated but erroneous impressions by factually supported insights into significant trends.

In recent years, the rapid growth of multiemployer and union pension funds was expected by some observers to create a new economic power in the hands of union officials. It was suggested, for example, that a degree of control over employers might be exercised; that the character of union organization might be changed by newly created financial management responsibilities; and that great stimulus to the financing of middle-income housing might be provided by the investment of vast sums from these sources. Bartell's survey shows that aggregate assets amounted to less than $1.3 billion in 1959 and grew to $3.0 billion by 1964. Although this is a rapid rate of growth, the aggregate amount in 1964 only represented approximately 4 percent of the book value of all industrial pension fund accumulations. Furthermore, he shows that the funds were generally invested in accordance with traditional standards of trusteeship.[2]

Despite vigorous growth in coverage and assets, therefore, it is easy to exaggerate the role of multiemployer and union pension funds in the total structure of public and private pension programs. In contrast, there is a tendency to regard similar programs of nonprofit organizations as of diminishing importance because of the relatively mature stage of their development. To appraise their role in accurate perspective, a different approach had to be taken by Elizabeth Simpson in her study. The principal questions related to nonprofit institutions outside of the well-known group of major Protestant churches with long-estab-

[1] The two preceding reports are Phillip Cagan's *The Effect of Pension Plans on Aggregate Saving: Evidence From a Sample Survey*, Occasional Paper 95, New York, NBER, 1965, and Daniel M. Holland's *Private Pension Funds: Projected Growth*, Occasional Paper 97, New York, NBER, 1966.

[2] The impact of new pension plan responsibilities on union organization and leadership was further explored by Bartell in "Unions and Pension Funds," unpublished Ph. D. dissertation, Columbia University, 1962.

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lished retirement benefit programs. What are the trends in the coverage of employees of other religious bodies? Medical and health, cultural, and social service organizations have been slow to extend pension coverage. Will there be well-sustained future growth in programs for these nonprofit activities?

Aided by the rapid growth of educational institutions and the extension of pension coverage, it appears that the nonprofit sector, contrary to what might be expected, faces an extended period of strong growth in asset accumulation. To support this conclusion Miss Simpson has surveyed trends in a wide range of activities. Complete coverage was beyond the scope of this study, but an attempt was made to identify most of the areas of potential importance.

These studies serve a twofold purpose: to assemble the facts in areas where data were incomplete and to identify trends which will affect the future structure of pension arrangements. In the process of serving these two objectives, it was possible to correct some exaggerated expectations regarding the adolescence of multiemployer and union pension funds. Similarly, it was found that a vigorous middle age rather than approaching senility characterized the programs of nonprofit institutions. For these reasons, the Bartell and Simpson studies fit together in this volume of research studies dealing with the economic aspects of pensions. The facts and interpretation which they supply serve to illuminate not just the dark corners but the main stream of developments in the dynamic evolution of the public and private pension structure.

ROGER F. MURRAY.

PART I: GROWTH IN MULTIEMPLOYER AND UNION PENSION FUNDS, 1959–64

BY H. ROBERT BARTELL, JR.

1. INTRODUCTION

Corporate pension funds, which cover the employees of a single company or a group of financially related companies, are the most carefully reported sector of the private pension structure. The aggregate estimates of assets and portfolio composition, which are provided regularly for this sector by the Securities and Exchange Commission,[1] are derived from a questionnaire submitted to a large sample of U.S. corporations. In using the corporation (and primarily larger corporations) as the unit of inquiry, the Securities and Exchange Commission survey does not include funds which cover the employees of two or more financially unrelated corporations or unincorporated businesses, usually known as multiemployer funds. Only in recent years has the SEC attempted to consolidate these and nonprofit organization funds with corporate noninsured pension funds to estimate a total of assets of private noninsured pension funds.

The Social Security Administration's yearly report on employee benefit plans regularly includes an estimate of the reserves of all private pension plans (both insured and noninsured), including "pay-as-you-go, multiemployer, and union administered plans, those of nonprofit organizations and railroad plans supplementing the Federal railroad retirement program." [2] Thus, the estimate for multiemployer and union funds, as in SEC tabulations, is combined with figures for the assets of other private pension funds. However, the rapid growth of these funds in recent years justifies a more detailed description of their attributes. Furthermore, recent attention being paid to the effect of union policies on pension fund investments prompts a closer look at the portfolio composition of those funds—multiemployer and union—where labor unions have some measure of control over investment policy.

2. DESCRIPTION AND SIZE OF FUNDS

The history of labor unions in the United States reveals that one of the major reasons for the organization of unions in the late 1800's was the provision of accident, death, and retirement benefits for certain classes of workers who were unable to obtain them from ordinary insurance companies at rates which the unions considered equitable. The early unions in the railroad, printing, and construction industries were good examples of the organizational importance of benefit pro-

[1] Securities and Exchange Commission, *Survey of Corporate Pension Funds, 1951–54*, Washington, 1956, and annual surveys published in its *Statistical Bulletin*.
[2] A. M. Skolnik, "Ten Years of Employee Benefit Plans," *Social Security Bulletin*, April 1966, pp. 3–19.

grams. Until the first part of the 1900's, the beneficial activities of these unions were limited to providing death and disability benefits and homes for aged members.

Although there were several earlier attempts at providing regular superannuation benefits, the system of the International Typographical Union, established in 1908, was the first which covered any large number of workers and which is still in existence. This was followed by plans established by the Brotherhood of Locomotive Engineers in 1912, the Bricklayers, Masons, and Plasterers in 1915, the Railway Conductors in 1917, the Bridge and Structural Iron Workers in 1918, the Locomotive Firemen and Enginemen in 1920, the Railroad Trainmen in 1923, the Printing Pressmen in 1924, and the Brotherhood of Electrical Workers in 1928. These systems were financed by assessments on the membership and were, except in the case of the railway brotherhoods, compulsory. Eligibility for pension benefits was based upon age, length of membership in the union, and inability to get employment in the trade. Benefits were looked upon as a form of charity rather than as a right earned for long service in the trade.

Union pension funds had assets of $11.5 million in 1929, according to Latimer,[3] and only 10 unions had such funds. The American Federation of Labor reported 14 unions paying "old-age benefits" in 1929, and 20 in 1931, paying just over $6 million in benefits. During the 1930's a number of union pension programs were dropped or their funds exhausted, so that by 1940 only 12 unions were paying benefits and the payments came to $1.7 million.[4]

Beginning in the 1940's unions shifted their efforts from financing retirement benefits by member assessments to obtaining employer support in providing pension payments to retired workers. In the larger, financially secure firms with relatively stable labor forces, a company-wide pension plan provided the best compromise between union demands for adequate retirement payments and management's desire to limit the costs of such benefits. Thus most negotiated pension plans were restricted to the employees of a single company.

However, workers in industries with small firms and frequent transfers of employees between firms also had need for retirement security which could not be economically provided by single-company pension plans. The first areawide pension system supported by employer contributions was initiated in 1929 by Local 3 of the Brotherhood of Electrical Workers and the Electrical Contractors Association of New York City. A similar plan for Electricians and the Electrical Employers Association of St. Louis was agreed upon in late 1929, but the agreement was voided by the Missouri Supreme Court in 1931 as a conspiracy in restraint of trade. During World War II, wage controls encouraged unions to seek contract improvements in the form of welfare benefits. The Amalgamated Clothing Workers and the International Ladies' Garment Workers' Union negotiated multiemployer pension systems in the garment trades, beginning with Local 324 of the ACWA in 1943. Benefits are financed entirely by employer contributions, but the funds are administered and the level of benefits determined solely by the union.

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[3] Murray W. Latimer, *Trade Union Pension Systems*, New York, 1932.

[4] H. A. Millis and R. E. Montgomery, *Organized Labor*, New York, 1945, Table 6, p. 334. See also Bureau of Labor Statistics, *Beneficial Activities of American Trade Unions*, Bulletin 465, 1928.

The Taft-Hartley Act, passed in 1947, required that all plans established subsequent to January 1, 1946, which involved negotiated employer contributions to a fund be administered jointly by employers and employees. Thus the great majority of multiemployer funds are jointly administered.

The bulk of negotiated single-company funds are established under collective-bargaining agreements which specify the benefits to be received upon retirement. Since the entire cost of the benefits (above employee contributions, if any) is borne by the corporation, investment of accumulated funds is left to the discretion of management. Virtually all multiemployer plans are established under collective-bargaining agreements which specify the amount of contributions to be made by employers and employees, and the benefits received upon retirement are dependent upon the size of the fund. Since the size of the fund is a function not only of contributions but also of investment yield, both union and employers are concerned with the management of the accumulated fund, especially as it may affect the level of benefits.

In summary, union funds are relatively old, administered solely by the union, and few in number. By contrast, multiemployer funds are newer, more numerous, and jointly administered by union and management.

SOURCES OF DATA

Until the passage, in 1958, of the Federal Welfare and Pension Plans Disclosure Act, consistent and comparable data on multiemployer and union pension funds were not available for all such funds.[5] New York State, since 1956, has had a reporting and disclosure act which requires all jointly administered funds covering more than 25 workers in the State to file comprehensive annual reports on the financial condition of the fund, including a list of all securities held. Reports submitted are subjected to a desk audit to check their internal consistency, and State agencies are authorized to make field audits of the funds when necessary and at least once every 5 years. Therefore, information obtained from these records is ample for investigations of asset size and portfolio composition and sufficiently accurate for the generation of aggregate figures. However, while the State disclosure act has wide coverage of multiemployer funds, these funds are either national in scope or cover employees in New York State and adjoining areas. Thus funds of a local or areawide character in other parts of the country are excluded. Funds administered solely by unions are completely exempt from reporting requirements in New York.

Before the passage of Federal legislation, several other States had reporting acts which covered various types of plans—mostly those jointly administered.[6] However, the reports filed with the Office of Welfare and Pension Plans of the Department of Labor include virtually all multiemployer and union pension funds in operation. The annual financial data on fund assets are in summary form and, unlike

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[5] For estimates back to 1945, based on estimates for 1957, from New York State reports, see Raymond W. Goldsmith, Robert E. Lipsey, and Morris Mendelson, *Studies in the National Balance Sheet of the United States*, Princeton University Press for NBER, 1963, vol. II, table III–5j–2, pp. 182–183.

[6] See National Industrial Conference Board, *Management Record*, July–August 1958, pp. 246 ff., for a summary of State disclosure laws.

the New York State reports, do not include a list of specific securities held. In addition, reports filed under the Federal act are not checked for accuracy by the Labor Department. Nevertheless, for the purpose of providing aggregate estimates of assets and broad classes of investments, the Federal reports are satisfactory since most are audited by a public accountant before being submitted.

The Bureau of Labor Statistics reported that 798 multiemployer pension plans, covering approximately 3.3 million active and retired workers, had been filed by the spring of 1960.[7] There is no public list of these funds, but tables I–1 and I–2 indicate that practically all the funds of major significance are contained in the present survey, and that in addition a broad sample of the smaller funds has been included.

TABLE I–1.—NATIONAL AND INTERNATIONAL UNIONS PARTICIPATING IN MULTIEMPLOYER PENSION PLANS BY NUMBER OF WORKERS COVERED—COMPARISON OF BLS AND NBER SURVEYS

Union	Number of plans	
	BLS	NBER
100,000 workers and over:		
Carpenters	18	18
Clothing (ACWA)	14	12
Electrical (IBEW)	32	27
Garment, Ladies	48	53
Mine (UMW) (excluding District 50)	2	2
Teamsters	121	104
50,000 and under 100,000 workers:		
Bakery (BCW)	8	5
Hod Carriers	23	25
Hotel	13	14
Longshoremen (ILA)	21	17
Meat Cutters	31	31
Plumbing	63	56
Retail Clerks	11	9
25,000 and under 50,000 workers:		
Bakery, American (ABCW)	5	3
Building Service	8	8
Engineers, Operating	18	17
Iron	20	15
Maritime (NMU)	4	4
Painters	23	24
Retail, Wholesale (RWDSU)	12	13
Sheet Metal	24	22
Upholsterers	1	1
5,000 and under 25,000 workers:		
Actors (AFTRA)	1	1
Automobile	6	6
Bookbinders	6	5
Brewery	9	6
Bricklayers	30	29
Electrical (IUE)	3	5
Furniture	6	6
Hatters	23	17
Lathers	5	5
Leather Goods	5	2
Longshoremen and Warehousemen (ILWU)	5	5
Machinists	10	10
Marine Engineers	3	4
Masters, Mates	2	2
Musicians	1	1
Plasterers	8	9
Printing Pressmen	14	10
Pulp	6	4
Shoe Workers, United	1	1
Stage (IATSE)	13	10
Textile Workers (TWUA)	1	1
Toy Workers	1	1
Typographical	13	10

[7] Bureau of Labor Statistics, *Multiemployer Pension Plans Under Collective Bargaining, Spring 1960*, Bulletin 1326, June 1962.

TABLE I–1.—NATIONAL AND INTERNATIONAL UNIONS PARTICIPATING IN MULTIEMPLOYER PENSION PLANS BY NUMBER OF WORKERS COVERED—COMPARISON OF BLS AND NBER SURVEYS—Continued

Union	Number of plans	
	BLS	NBER
1,000 and under 5,000 workers:		
Asbestos	17	11
Boilermakers	2	2
Distillery	5	6
Jewelry	1	3
Leather Workers	1	1
Lithographers	1	1
Mine, District 50	3	3
Newspaper Guild	2	2
Newspaper and Mail Deliverers	1	1
Patternmakers	5	3
Photo Engravers	4	5
Roofers	4	5
Stereotypers	3	3
Watchmen's Association	3	1
Fewer than 1,000 workers:		
Engineers, Technical	1	1
Firemen and Oilers	1	1
Garment, United	2	----
Hosiery	1	1
Machine Printers	1	1
Mailers	2	1
Marble	1	2
Metal Polishers	1	1
Office	2	3
Radio	1	2
Shoe and Boot Workers	1	----
Telegraphers	1	1
Textile Workers (UTWA)	1	1
Not included in BLS survey:		
Seafarers	----	2
Writers Guild	----	1
Industrial Workers, Allied	----	1
2 or more national unions	26	10
Unclassified (AFL–CIO directly affiliated and independent locals, and unknown)	12	9
All plans	798	715

Source: Bureau of Labor Statistics, "Multiemployer Pension Plans Under Collective Bargaining, Spring 1960, Bulletin" No. 1326, June 1962, table 4, and National Bureau of Economic Research survey (1959) conducted by the author.

TABLE I–2.—MULTIEMPLOYER PENSION PLANS BY NUMBER OF WORKERS COVERED—COMPARISON OF BLS AND NBER SURVEYS

Number of workers covered [1]	Number of plans	
	BLS	NBER
All plans	798	715
Under 100	54	29
100 and under 500	230	175
500 and under 1,000	154	132
1,000 and under 5,000	257	211
5,000 and under 10,000	51	51
10,000 and under 25,000	29	33
25,000 and under 50,000	15	14
50,000 and under 100,000	2	3
100,000 and over	6	5
Coverage not determined [2]	----	62

Source: Bureau of Labor Statistics, "Multiemployer Pension Plans Under Collective Bargaining, Spring 1960," Bulletin No. 1326, June 1962, ttable 2, and National Bureau of Economic Research survey (1959) conducted by the author.

[1] BLS survey includes annuitants; NBER survey does not.
[2] For plans where coverage was not reported, BLS estimated coverage at 1,200. This would cause them to fall into the 1,000 and under 5,000 category.

Since it was important to secure estimates of trends in assets and portfolio composition of self-insured [8] multiemployer and union funds, a stratified sample of funds covered in the initial survey of 1959 was drawn and used to provide estimates for subsequent years. A description of the sampling method used is provided in appendix I.

TOTAL ASSETS AND GROWTH

The total assets of multiemployer and union pension funds were approximately $1,270 million at book value in 1959. Estimates through 1964 are presented below in comparison with corresponding data for single-employer industrial noninsured pension funds:

	Multiemployer and union funds		Single-employer funds	
	Book value (millions)	Percent increase	Book value (millions)	Percent increase
1959	$1,270	(1)	$26,667	14.8
1960	1,548	21.9	30,343	13.8
1961	1,856	19.9	34,302	13.0
1962	2,209	19.0	38,233	11.5
1963	2,601	17.8	42,427	11.0
1964	3,040	16.8	47,285	11.5

[1] Not available.

Growth in a pension fund's assets is particularly rapid, of course, in the early years following its establishment. A constant amount of contributions will cause a fund's assets to double during its second year of operations and increase by 50 percent during the third year. Benefit payments are usually low in the early years, and provision for the gradual funding of past and current service liabilities means that receipts will exceed expenditures from the fund for a number of years. The history of a number of multiemployer funds shows that extension of coverage to new groups of employees and increases in contemplated benefits proceed rapidly after the fund is established and participants are persuaded that pension coverage is feasible. This "demonstration effect" also encourages other employer and employee groups to establish their own funds. In the aggregate, growth in fund assets is derived from funding of current and past service liabilities, establishment of new funds, and extensions of coverage and contribution increases in old ones. The effect of these factors on overall growth rates is most dramatic where newer funds predominate.

Most multiemployer pension plans have been established in recent years. According to the Bureau of Labor Statistics study, over 60 percent of the plans covering 43 percent of the workers under multiemployer pension plans were started in the 5-year period from 1955 to 1959. Less than 8 percent of the plans were over 10 years old in 1960.[9]

The effect of funding on per capita asset growth is demonstrated by table I–3, which shows assets per active employee by age of the fund for a sample of 360 self-insured multiemployer and union funds for

[8] In this paper the terms "self-insured" and "noninsured" are used interchangeably. Insured plans are included in tables I–1 and I–2, but have been omitted from the remainder of the study. See app. I and BLS *Bulletin No. 1326* for number of insured and self-insured plans.

[9] *Ibid.*, table 1, p. 98.

which coverage, total assets, and date of establishment were available. For funds established after 1947, assets per employee rise continuously as the age of the fund increases. The sharp drop in assets per employee in funds started before 1948 reflects the influence of the large Clothing Workers', Electrical Workers', and Mine Workers' funds, which do not provide for funding of past service liabilities on an actuarial basis. If the funds of the ACWA, IBEW, and UMW are omitted from the funds established in 1946–47, the assets per employee of the remaining funds exceed $1,000.

TABLE I-3.—MULTIEMPLOYER AND UNION PENSION FUNDS—ASSETS IN 1959 PER WORKER COVERED, BY YEAR OF ORGANIZATION

Year organized	Number of funds in sample	Assets per worker covered
1958 and 1959	89	$130
1956 and 1957	89	265
1954 and 1955	59	443
1952 and 1953	46	523
1950 and 1951	47	1,023
1948 and 1949	13	1,201
1946 and 1947	10	427
1945 and earlier	7	313

Source: NBER survey.

CONCENTRATION OF ASSETS

The assets of multiemployer and union pension funds, like those of corporate funds, are heavily concentrated in a few large funds. Of the funds included in the National Bureau survey, those having more than $10 million in total assets accounted for less than 4 percent of the funds but for more than 53 percent of the assets of all funds. On the other end of the scale, 53 percent of the funds had under $½ million each in total assets, and they held less than 5 percent of the assets of all multiemployer and union funds. Table I–4 shows the data on asset concentration in greater detail.

TABLE I-4.—CONCENTRATION OF ASSETS IN CORPORATE AND IN MULTIEMPLOYER AND UNION PENSION FUNDS

[In percent of total]

Size of fund (thousands)	Corporate funds,[1] 1957		Multiemployer and union funds, 1959	
	Number of funds	Total assets [2]	Number of funds	Total assets [2]
$100,000 and over	1.5	55.3	0	0
$10,000 to $99,999	12.3	28.3	3.8	53.6
$5,000 to $9,999	9.1	6.0	2.6	8.1
$1,000 to $4,999	25.5	6.9	26.9	29.4
$500 to $999	13.0	1.2	13.3	4.3
Under $500	38.6	2.3	53.4	4.6

Source: Corporate funds, SEC data, calculated from P. P. Harbrecht, "Pension Funds and Economic Power," New York, 1959, table 30, p. 224; multiemployer and union funds, in BER survey.

[1] Noninsured single-employer pension funds of business corporations.
[2] Assets are recorded at book value.

The 10 largest funds in 1959 had $478 million in assets, or about 38 percent of the total. The funds and their assets are shown in table I–5.

TABLE I–5.—10 LARGEST SELF-INSURED MULTIEMPLOYER AND UNION PENSION FUNDS, 1959

[In thousands of dollars]

No.	Name of fund	Total assets
1	IBEW pension benefit fund (union)	$85,010
2	United Mine Workers welfare and retirement fund	[1] 82,945
3	Teamsters' Central States, Southeast, and Southwest areas pension fund	61,333
4	Amalgamated insurance fund (retirement)	55,765
5	National electrical benefit fund of the National Employees Benefit Board for the Electrical Contracting Industry	46,000
6	Retirement fund of the New York Dress Joint Board of the ILGWU	40,396
7	Retirement fund of the New York Cloak Joint Board of the ILGWU	29,612
8	The 65 security plan pension fund (District 65, Retail, Wholesale & Department Store Union)	26,449
9	National Maritime Union Pension trust	25,801
10	Amalgamated Cotton Garment & Allied Industries fund (retirement)	24,682

Note: Assets are shown at book value.

Source: NBER survey.

[1] Estimated.

TOTAL ASSETS BY MAJOR INDUSTRY GROUPS

Classification of individual funds by industry is difficult because some funds include employees working in several different industries. Therefore, the data presented in table I–6 on assets by industry of employment can represent, at best, only approximations. However, they show rough similarities to the BLS data on coverage by industry. About 60 percent of coverage and assets are in nonmanufacturing industries. High concentrations of both coverage and assets are found in the apparel, construction, and motor transportation industries.[10]

TABLE I–6.—ASSETS OF MULTIEMPLOYER AND UNION PENSION FUNDS, BY INDUSTRY GROUP, 1959

	Assets [1] (millions)	Percent of total
All industries	$1,270.3	100.0
Manufacturing	512.5	40.3
Food and kindred products	124.7	9.8
Apparel and other finished textile products	246.7	19.4
Printing, publishing, and allied industries	61.9	4.9
Leather and leather products	6.7	.5
Metalworking	36.2	2.8
Other manufacturing	36.3	2.9
Nonmanufacturing	752.2	59.2
Mining	85.1	6.7
Contract construction	278.0	21.9
Motor transportation	133.2	10.5
Water transportation	110.5	8.7
Wholesale and retail trade	74.1	5.8
Services	42.4	3.3
Motion pictures and recreation	28.5	2.2
Other nonmanufacturing	.3	[2]
Not classified	5.5	.4

Note: Figures are rounded and may not add to totals.

Source: NBER survey.

[1] Assets at book value.
[2] Less than 0.05 percent.

In addition to concentration in certain industries, there is also a virtual absence of multiemployer and union pension funds in durable goods manufacturing, railroads, and public utilities other than transportation. These observations underline the proposition that multi-

[10] *Ibid.*, table 3, p. 99.

employer pension systems are particularly suited to industries where small firms predominate and where employment mobility within an industry is a prevalent characteristic.

3. Portfolio Composition

The assets of multiemployer and union pension funds are invested in a variety of financial instruments. For the most part, the instruments are the same as those found in corporate pension funds: Federal Government obligations, corporate stock and bonds, and mortgages. However, the distribution of assets among the various investment categories and the proportion held uninvested; that is, in cash, show significant differences between corporate and multiemployer and union funds when viewed in the aggregate. A closer look, though, indicates that these differences are not great, that they can be partly explained by differences in size and operating characteristics, and that they are diminishing.

Table I–7 presents the aggregate portfolios of multiemployer and union pension funds for the years 1959 through 1964. Multiemployer and union funds, as a whole, have a greater proportion of their assets in cash. Government securities, and mortgages (40.2 percent versus 10.9 percent for corporate funds in 1964) and a smaller proportion in corporate stock and bonds (56.3 percent) as compared to corporate pension funds (84 percent).[11] However, over the 6 years, the multiemployer and union funds have sharply reduced the proportion of their portfolio in Government bonds and increased investments in corporate securities. A continuing difference between the two types of funds appears to be the greater emphasis of multiemployer and union funds on mortgage investment, although corporate funds also increased their investment in this field in recent years.

TABLE I-7.—PORTFOLIO COMPOSITION OF MULTIEMPLOYER AND UNION PENSION FUNDS, 1959-64

	1959	1960	1961	1962	1963	1964
Total assets (millions)	$1,270	$1,548	$1,856	$2,209	$2,601	$3,040
Percent of book value:						
Cash	6.5	5.2	5.5	6.1	6.5	6.2
U.S. Government securities	34.0	26.1	21.0	18.6	16.0	14.8
Corporate and other bonds	28.0	31.5	32.1	31.7	31.9	31.8
Preferred stock	1.7	1.8	1.6	1.4	1.2	1.0
Common stock	14.0	17.5	20.4	22.2	22.4	23.5
Mortgages	12.3	15.1	16.4	17.0	17.9	19.2
Other investments	1.4	1.2	1.2	1.4	2.5	1.9
Other assets	2.1	1.7	1.7	1.6	1.6	1.6

Source: NBER survey for 1959, with subsequent years estimated as described in app. I.

FLOWS OF NEW FUNDS

The changes in multiemployer and union pension fund portfolios are more sharply highlighted by the figures in table I–8. "New" funds have been channeled into mortgages and common stock at a faster rate in the years since 1959 than the average for the years prior to 1959. Corporate and other bonds gathered a larger share of new funds in 1960 and 1961 than previously, but the portfolio of these securities has grown at about

[11] See Securities and Exchange Commission, *Statistical Bulletin*, June 1965 and earlier.

the same rate as total assets in more recent years. Multiemployer and union funds were net sellers of U.S. governments in 1960 and 1961, and have added rather small amounts of these securities to portfolios since. Thus, assuming no change in the distribution of additions to portfolios in the future, the aggregate holdings of multiemployer and union pension funds will continue to shift toward a larger proportion of common stock and mortgages for several years to come.

TABLE I-8.—MULTIEMPLOYER AND UNION PENSION FUNDS—SOURCES AND USES OF FUNDS, 1960-64

	1960	1961	1962	1963	1964
	Millions of dollars				
Sources: Net asset growth	278	308	353	392	439
Uses:					
Net acquisition of financial assets	278	303	349	386	431
Cash	−2	23	32	33	22
U.S. Government securities	−27	−16	21	7	32
Corporate and other bonds	131	109	104	129	137
Preferred stock	5	3	2	−1	(1)
Common stock	93	108	111	94	130
Mortgages	78	71	70	91	117
Other investments	(1)	5	9	33	−7
Other assets	(1)	5	4	6	8
	Percent distribution of uses				
U.S. Government securities	−9.7	−5.2	5.9	1.8	7.3
Corporate and other bonds	47.1	35.4	29.5	32.9	31.2
Common stock	33.5	35.1	31.4	24.0	29.6
Mortgages	28.1	23.1	19.8	23.2	26.7
All other uses	1.0	11.6	13.4	18.1	5.2

[1] Less than $500,000.

ATYPICAL FUNDS

Several of the very large multiemployer and union pension funds show portfolio distributions quite dissimilar to the overwhelming number of smaller funds. Because these larger atypical funds represent a significant proportion of all multiemployer and union fund assets, they tend to distort the weighted average portfolios shown in table I-7. In order to approximate the asset distribution of the typical or modal fund, the typical and atypical funds have been segregated; the resulting portfolios are shown in table I-9.

TABLE I-9.—PORTFOLIO COMPOSITION OF ATYPICAL, SELECTED, AND ALL MULTIEMPLOYER AND UNION PENSION FUNDS, 1964

	All funds	Atypical funds	Selected funds
Total assets (millions)	$3,040	$799	$2,241
Percent of book value:			
Cash	6.2	10.0	4.9
Other assets	1.6	1.5	1.6
Invested assets	92.2	88.6	93.5
U.S. Government securities	14.8	19.1	13.3
Corporate and other bonds	31.8	10.7	39.2
Preferred stock	1.0	.4	1.2
Common stock	23.5	8.0	29.0
Mortgages	19.2	46.9	9.3
Other investments	1.9	3.5	1.4

Source: NBER survey.

The atypical group comprises eight funds containing about 26 percent of total multiemployer and union fund assets in 1964. The eight funds cover members of five unions—the Teamsters, Ladies' Garment Workers (two funds), Brotherhood of Electrical Workers (two funds), Amalgamated Clothing Workers (two funds) and United Mine Workers.

Both the Garment Workers' and Clothing Workers' funds follow a policy of not investing in corporate stock. In addition, the Clothing Workers exclude purchases of corporate bonds and the Garment Workers first began acquiring these investments in 1955–56.

The two large IBEW funds and the largest Teamster fund invest heavily in mortgages, the principal difference being that the bulk of IBEW mortgages are Government-insured or guaranteed and on single-family dwellings, while the Teamsters have recently favored conventional multifamily and commercial mortgages. Over two-thirds of the assets of these three funds are mortgage investments.

The United Mine Workers' fund reflects substantial variation in investment policy over the years 1959–64. In the earlier years, U.S. Government bonds were favored. This was followed by a shift to cash, particularly bank time deposits, and in 1963 and 1964 the fund more than doubled its holdings of corporate stock.

The category of "selected" funds, obtained by excluding the eight atypical funds, represents a wide range of sizes, industries, unions (the smaller funds of the unions represented in the atypical group are included), and portfolio policies. It is, therefore, more typical than the aggregates heavily weighted by the extremes in portfolio policy. Furthermore, the "selected" group is growing more rapidly than the atypical funds. Because of this, the aggregate portfolio of the future will look more like the selected funds, assuming no radical change in policy by any of the funds.

LIQUIDITY

Multiemployer and union pension funds have relatively greater cash holdings than do corporate funds. One reason for this is that the average corporate pension fund is substantially larger than the average multiemployer fund, and, as table I–10 indicates, fund holdings of cash tend to decline as a proportion of total assets as fund size increases.

TABLE I-10.—PORTFOLIO COMPOSITION OF MULTIEMPLOYER AND UNION PENSION FUNDS BY SIZE OF FUND 1959

[In percent of book value]

	Assets per fund (thousands)				
	$10,000 and over	$5,000 to $9,999	$1,000 to $4,999	$500 to $999	Under $500
Cash	3.4	6.2	6.9	17.0	31.7
Other assets	1.7	2.4	3.0	2.3	3.2
Invested assets	94.9	91.4	90.1	80.7	65.1
U.S. Government securities	38.7	25.4	30.3	24.7	24.9
Corporate and other bonds	20.1	45.4	37.8	35.5	20.0
Preferred stock	1.7	2.2	1.9	1.2	.9
Common stock	12.1	14.5	17.0	17.4	12.2
Mortgages	20.8	3.6	2.5	.4	.9
Other investments	1.4	.3	.8	1.6	6.2

Source: NBER survey.

Furthermore, multiemployer and union funds undoubtedly have greater cash needs than corporate funds of comparable size. Most corporate funds are level-of-benefit types, with the employer making regular payments in order to meet qualification requirements. In the case of multiemployer funds, however, the employer usually has a fixed contribution rate and, in the short run, cannot be required to assure the payment of specified benefits or to supply additional contributions to carry the fund through occasional periods of illiquidity. Thus, the trustees of multiemployer funds probably consider the precautionary need for cash greater than the managers of corporate funds.

The need of multiemployer funds for cash may exceed that of corporate funds since most payments for administration of the system come directly from the fund. Much of the administrative expenses of the corporate system, such as the costs of recordkeeping, legal and investment counsel, and actuarial advice, are usually paid directly out of the company's accounts rather than out of the fund.

In multiemployer systems, tasks which do not exist in the corporate systems must be performed, and these require sizable outlays of funds at certain times. For instance, the collection of delinquent contributions may represent substantial costs to the fund, and these outlays tend to be high when income to the fund is low because of nonpayment of contributions.

Several of the very large multiemployer plans have high benefit payments in relation to contributions because of age or lack of funding. A higher ratio of benefits to contributions would indicate a greater need for liquidity for payment purposes and because of a lower "margin of safety" of contribution inflow over benefit outgo.

It may be true that not all the cash held by multiemployer and union funds can be attributed to greater need for liquidity. Some portion represents certificates of deposit and savings and loan association share accounts held for investment. Also liquidity is provided by near-cash assets, such as Government bonds; and multiemployer and union funds show a marked, but declining, preference for this type of asset when compared to corporate pension funds.

OTHER ASSETS

A third factor, which, together with atypical funds and greater liquidity needs, tends to distort portfolio comparisons between multiemployer and corporate pension funds, is the existence of "other assets" in the multiemployer and union funds. This category includes accrued and delinquent contributions receivable and fixed assets, such as office buildings and equipment. These assets would not appear on the balance sheet of a corporate fund since the company does not have contractual contributions which can be accrued, and it usually administers the pension system on the premises and using the facilities of the firm.

4. Comparison With Portfolios of Corporate Pension Funds

The portfolio distributions shown in table I–11 reflect the investment decisions of typical multiemployer and union and corporate pension fund managers. The atypical funds of multiemployer and

union plans have been omitted along with cash and other asset holdings. While the comparison is not perfect because some cash holdings may represent investment decisions and some Government bond holdings may reflect liquidity needs, it is superior to a comparison based upon total assets. The portfolios of the selected multiemployer and union funds and the corporate funds in 1964 still demonstrate significant differences, but they are approaching each other rapidly in their composition. As a demonstration of how fast the portfolio composition of the funds can change and how close the present portfolio of multiemployer and union funds is to that of the corporate funds a few years ago, the investment distribution of corporate funds in 1959 is also presented.

TABLE I-11.—INVESTMENT PORTFOLIOS OF SELECTED MULTIEMPLOYER AND UNION PENSION FUNDS, 1964, AND CORPORATE PENSION FUNDS, 1959 AND 1964

[In percent of book value]

	Multiemployer and union funds, 1964	Corporate funds	
		1959	1964
U.S. Government securities	14.2	8.8	5.3
Corporate and other bonds	42.1	51.3	41.8
Preferred stock	1.3	2.6	1.2
Common stock	31.0	30.9	42.2
Mortgages	10.0	2.3	4.5
Other investments	1.5	4.0	5.1

Note.—Figures are rounded and may not add to totals.

Source: Multiemployer and union funds, NBER survey; corporate funds, calculated from data in SEC Statistical Bulletin June 1965.

A possible explanation of the close similarity between the multiemployer and union fund portfolio and that of the corporate funds several years earlier is suggested by the newness of most multiemployer funds. Investment advisers observe that it takes several years to change the thinking of inexperienced trustees—both union and management—from their natural investment conservatism and concern for the preservation of fund assets. Meyers and Miller report, on the basis of a survey of investment advisers, that it usually takes from 2 to 3 years to educate fund trustees in the advantages of a flexible investment policy, that is, one which would include liberal portions of corporate bonds and common stock in the fund portfolio.[12] Many of the larger multiemployer plans were established in the 1955–58 period,[13] and it would be the trustees of these funds who were making decisions to change portfolios in the period of this survey. Since it usually takes several years for the change in policy to be fully implemented, it can be predicted that the shifts in overall multiemployer and union fund portfolio composition which are evident in the 1959–64 figures will continue for several more years at least.

BANK-ADMINISTERED FUNDS

One of the most plausible reasons for the similarity between the investment portfolios of multiemployer and union funds and corporate

[12] F. Meyers and C. R. Miller, "Investment Policies of Bilaterally Managed Pension Plans," *Quarterly Review of Economics and Business*, February 1962, p. 49.
[13] Bureau of Labor Statistics, Bulletin 1326, table 1.

funds is that in both a strong influence on investment policy is exerted by commercial bank trust departments.[14]

When a bank trust department is connected with the investment of the fund, multiemployer pension funds show a greater proportion of corporate bonds and common stock and a smaller proportion of Government bonds and mortgages than do the selected funds in which the effect of large atypical funds is eliminated. That is, the bank-associated funds are closer to corporate funds in portfolio distribution than are the selected funds, which are taken as representing the average multiemployer and union fund. This is shown in table I–12. The portfolio for bank funds is derived from a sample of 128 funds (having $420 million in assets in 1959) for which it could be determined that a bank acted either as trustee, agent, or investment adviser.

TABLE I–12.—INVESTMENT PORTFOLIO OF SELECTED AND BANK-ADMINISTERED MULTIEMPLOYER AND UNION FUNDS AND CORPORATE FUNDS, 1959

[In percent of book value]

	Multiemployer and union funds		Corporate funds
	All selected	Bank administered	
U.S. Government securities	28.1	16.3	8.8
Corporate and other bonds	43.3	54.1	51.3
Preferred stock	2.6	3.3	2.6
Common stock	19.4	23.1	30.9
Mortgages	4.7	2.9	2.3
Other investments	2.0	.3	4.0

Note.—Figures are rounded and may not add to totals.

Source: Multiemployer and union funds, NBER survey; corporate funds, calculated from data in SEC Statistical Bulletin, June 1962.

VARIATIONS IN PORTFOLIO COMPOSITION BY UNION

Union policy is sometimes considered to be the most important factor influencing the distribution of multiemployer and union pension fund assets among the different investment media. While this is obviously true for some unions, e.g., those which are associated with atypical funds, it does not appear to be true for the bulk of unions involved with multiemployer funds.

Table I–13 shows the portfolio composition of 348 self-insured multiemployer and union pension funds classified by union. The compilation includes 18 national unions, or all those that had total assets in excess of $15 million in funds covering their members in 1959. In all, these funds include just over 60 percent of all self-insured multiemployer and union funds in the 1959 survey, and contain $1 billion, or almost 80 percent of the assets in this type of fund.

[14] Evidence of trust department influence in the investment of corporate funds is given in Harbrecht, *Pension Funds and Economic Power*, New York, 1959, pp. 226–227. BLS data on multiemployer funds show that the person determining investment policy was a corporate trustee or investment agent, acting either alone or in conjunction with the board of trustees, in about one-fourth of the funds, covering about 15 percent of the workers (Bulletin 1326, p. 92). These data probably understate the influence of trust departments in the actual investment decision making since a corporate trustee is usually given broad discretion in the trust agreement, and boards of trustees frequently hire banks as investment advisers and then abide by the bank's judgment in portfolio policy.

TABLE I-13.—PORTFOLIO COMPOSITION OF MULTIEMPLOYER AND UNION PENSION FUNDS BY UNION (ALL UNIONS WITH FUNDS TOTALING $15,000,000 OR MORE), 1959

Union	Number of funds	Total assets (millions)	Percent of book value									
			Cash	Other assets	Investments							
					Total invested	Corporate				Other		
						Bonds[1]	Preferred stock	Common stock	Total[1]	U.S. Government securities	Mortgages	Miscellaneous
Teamsters, Chauffeurs, Warehousemen & Helpers (TCWH)	88	$208.4	6.3	2.8	90.9	32.5	2.7	16.6	51.8	27.8	8.3	3.0
Electrical Workers (IBEW)	20	143.8	6.9	.7	92.4	3.4	.8	12.5	16.7	5.4	67.4	2.9
Garment Workers Union; International Ladies (ILGW)	53	135.5	4.3	.3	95.4	9.4	0	0	9.4	67.9	18.1	0
Clothing Workers (ACWA)	12	92.3	3.3	1.1	95.6	0	0	0	0	95.6	0	0
Mine Workers of America; United (UMW)	5	84.4	10.2	0	89.8	0	0	4.7	4.7	85.0	[2]	0
Retail, Wholesale and Department Store Union (RWDSU)	12	37.7	6.1	1.1	92.8	41.7	.7	33.6	76.0	9.9	4.9	2.1
Lithographers of America (ALA)	3	33.8	.9	9.4	89.7	45.4	10.0	12.6	68.0	11.9	9.8	0
Plumbing and Pipe Fitting (PPF)	38	33.0	10.8	1.1	88.1	45.4	3.9	16.9	66.2	20.0	0	1.9
Longshoremen's Association; International (ILA)	16	30.6	4.2	5.4	90.4	40.8	6.3	15.9	63.0	25.6	1.1	.6
Maritime Union (NMU)	4	29.8	4.2	3.9	91.9	41.3	1.2	25.2	67.7	24.2	0	0
Carpenters and Joiners (CJA)	9	28.2	6.3	5.6	88.1	38.9	[2]	20.0	58.9	26.0	3.2	0
Longshoremen's and Warehousemen's Union; International (ILWU)	5	26.5	1.4	0	98.6	78.9	1.7	4.5	85.1	9.5	0	3.9
Bakery and Confectionery Workers (BCW)	4	23.8	3.8	4.0	92.2	56.9	3.5	26.2	86.6	4.6	1.0	0
Meat Cutters and Butcher Workmen (MCBW)	28	21.4	19.6	4.4	76.0	26.9	.2	14.1	41.2	28.5	5.8	.4
Hotel and Restaurant Employees and Bartenders (HREU)	12	20.7	7.8	3.7	88.5	42.3	.6	26.4	69.3	17.8	.3	1.1
Automobile, Aerospace, and Agricultural Implement Workers (UAW)	6	20.4	1.7	1.9	96.4	58.8	3.7	25.5	88.0	8.4	0	0
Sheet Metal Workers (SMW)	15	18.7	8.9	2.0	89.1	43.7	1.7	23.1	68.5	18.8	0	1.7
Hod Carriers, Building and Common Laborers (HCL)	18	16.1	10.0	3.4	86.6	33.7	4.3	20.5	58.5	25.2	2.1	.9

[1] Includes small amounts of bonds other than U.S. Governments and corporates.
[2] Less than 0.05 percent.

Source: Survey described in app. I. Abbreviations are from Bureau of Labor Statistics, Directory of National and International Labor Unions in the United States, 1963, "Bulletin 1395," May 1964.

With the exception of the unions having atypical funds, there is a relatively narrow range of portfolio proportions for rough categories of assets. If we postulate a portfolio such as the following:

Cash	10 percent or less.
Bonds	55 to 70 percent.
Stock	20 to 30 percent.
Mortgages	less than 10 percent.

the aggregate portfolios of 11 of the 18 unions (14 if the atypical ones are excluded) with more than $15 million in pension assets fall approximately within the percentages cited. Two of the remaining seven (or three typical) deviate from the "average" union portfolio only slightly. In one case this reflects a preponderance of small funds with heavy cash holdings; in the other, a liberal portfolio of common stock.

It is significant to note that the portfolio of bank-associated funds (table I–12) falls squarely in the middle of the "average" union's portfolio.

FUNDS HOLDING STOCKS AND MORTGAGES

The substantial increase in the proportion of common stock and mortgages in multiemployer and union funds raises the question: Does this increase derive primarily from funds adding to their existing holdings of these securities at a faster rate than heretofore, or are more funds moving into stock and mortgages for the first time?

Only four funds in the sample of 87 [15] bought common stock for the first time during the period 1960–64, although it should be noted that a large proportion (76 percent) held stock at the beginning of the period (see table I–14). Thus the increase in common stock in the aggregate portfolio appears to have come primarily from increased holdings by the funds already committed to this type of investment.

TABLE I–14.—NUMBER OF MULTIEMPLOYER AND UNION FUNDS IN SAMPLE HOLDING, SELECTED TYPES OF ASSETS, 1959–64

	1959	1960	1961	1962	1963	1964
Total number of funds in sample	87	87	87	87	87	87
Total number of funds holding—						
Mortgages	27	32	33	41	49	50
Common stock	66	68	68	69	70	70

Source: NBER survey.

By contrast, the number of funds in the sample having mortgage investments nearly doubled between 1959 and 1964. In addition, several large funds, for example, the Teamsters' Central States, Southeast, Southwest Areas Pension Fund, channeled the greater proportion of their new moneys into mortgages. Therefore, the growing percentage of mortgages in multiemployer and union pension funds can be traced to a large number of new entrants into the mortgage field as well as to increased holdings by those funds already having substantial mortgage investments.

[15] Although the sample used to estimate asset totals and portfolio distributions numbered 90 funds (see app. I), 3 of these funds did not provide detailed investment breakdowns for each of the years covered.

5. Summary

Assets of multiemployer and union pension funds are small in comparison to corporate pension funds, but their rate of growth is substantially higher than that of corporate funds.

The high growth rate of multiemployer and union funds is a reflection of their younger average age.

Assets of multiemployer and union pension funds, like corporate funds, are highly concentrated in a relatively few large funds.

Assets and coverage of multiemployer and union pension funds, unlike corporate funds, are concentrated in nonmanufacturing industries. An exception is the large accumulation of assets in funds covering employees in the apparel and other finished-textile products industry.

The portfolio composition of multiemployer and union pension funds shows significant differences when compared to corporate pension funds. However, these reflect, in part, differences in structural characteristics and, in part, highly atypical responses to investment choices by a few large multiemployer and union funds. The remaining differences are fast diminishing because of shifts in investment choices by the average multiemployer and union fund and because of the slower growth rates of atypical funds. For the future, although we can expect the two types of fund—multiemployer and corporate—to become more alike in portfolio composition, it is likely that dissimilarities will always exist because of the persisting structural differences, that is, average size and liquidity needs, and because of investment preferences.

Most unions do not take an active role in shaping the investment policies of pension funds covering their members. For the most part, this responsibility is delegated to professional investment managers, such as commercial bank trust departments. Many of the funds that do *not* delegate the function of portfolio management nevertheless follow the pattern of investment diversification common to bank administered pension funds.

In the funds covering members of the TCWH, IBEW, ILGW, ACWA, and UMW, the effect of union policy on portfolio composition is clearly discernible. In all of the other unions with substantial pension fund assets, union policy per se appears to play little or no role in shaping fund investment policy.

Union policy does not appear to be a factor affecting the type of union participating in the administration of multiemployer funds. The unions which control or jointly administer large aggregates of pension fund assets demonstrate a wide variety of structures, leadership, and approaches to unionism. The common characteristic of these unions is that some members work in small establishments or are included in small bargaining units attached to medium- or large-sized companies, or that employment with a single firm in the trade or industry for a long period of time is improbable. These characteristics are common to a wide range of unions. Since approach to unionism does not appear to be a deciding factor influencing union involvement in multiemployer and union pension funds, it should not be surprising that union policy plays, in the aggregate, only a minor role in shaping the investment of pension funds.

Appendix I: Estimating Procedures

Data on assets of multiemployer and union funds for 1959 are derived from the survey described above. Of the 715 multiemployer and eight union funds surveyed, 85 were insured and 577 self-insured; information was not available on the remaining 61. The total asset figure used in the study represents an estimate for all self-insured funds, and the aggregate portfolio composition is that of all self-insured funds where asset breakdowns were available (561 funds).

The proportion of insured plans in this survey is approximately the same as that found by the Bureau of Labor Statistics.[16]

Data on assets and portfolio composition for subsequent years were derived from a stratified random sample of the funds included in the 1959 survey. Information on all of the funds that had more than $5 million in total assets at the end of 1959 was obtained. These 36 funds represented over 60 percent of the assets in all multiemployer and union funds in the 1959 survey. In addition a sample of 64 funds in the size classes below $5 million was drawn. (See table I–4 for data on the concentration of assets.) The sample size and the number of sampling units in each size stratum were based on a system of optimum allocation which takes into account not only the number of funds in each stratum of the population (N_h) but also the standard deviation of each stratum (S_h). The allocation of sampling units to each stratum was proportional to the product of the number of funds in each stratum and the standard deviation of the stratum (N_hS_h).[17] A sample size of

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[16] Bureau of Labor Statistics. Bulletin 1326. p. 17.

[17] When optimum allocation is used, the sample size (n) for estimating a total, e.g., total assets for all funds, is given by the formula:

$$n=\frac{n_0}{1+\frac{1}{V}\Sigma N_hS_h^2}$$

where

$$n_0=\frac{(\Sigma N_hS_h^2)}{V},$$

or the sample size uncorrected for a finite population, and V is the desired variance in the sample estimate and is determined by the formula $V=(dXT)^2$, where d is the acceptable margin of error or the half-width of the confidence interval (in this case .025) and T is the universe total (in this case the total assets of all funds with less than $5 million in 1959).

Thus,

$$V=(.025X\$478,240)^2=142,945,936.$$

$$n_0=\frac{(114,872)^2}{142,945,936}=92.3$$

$$n=\frac{92.3}{1+\frac{62,897,542}{142,945,936}}=64.1$$

or a sample size of 64.

Allocated according to the ratio in each stratum of $\frac{N_hS_h}{\Sigma N_hS_h}$, the sample size in each stratum was:

Stratum	*Total Assets (thousands of dollars)*	*Sample Size* (n_h)
1	0–99	1
2	100–249	3
3	250–499	4
4	500–999	6
5	1,000–1,999	14
6	2,000–4,999	36
		64

Source: William G. Cochran, *Sampling Techniques*, New York, 1953, pp. 73–74, 87–90.

64 for the funds with less than $5 million in total assets will give an estimate of the aggregate assets in these funds, with a maximum error of 2.5 percent. Since each of the funds with assets over $5 million was surveyed, the resulting estimate for all multiemployer and union funds for years subsequent to 1959 would be in error by substantially less than plus or minus 2.5 percent.

The portfolio composition of multiemployer and union funds was determined by weighting the sample portfolio distribution for each stratum by the amount of assets in that stratum in 1959. The results of this calculation are show in table I–7.

Since the sample used to estimate aggregate assets and portfolio distribution was drawn from the universe existing in 1959, funds formed since that year are not included. No attempt was made to derive an independent estimate of the assets added by newly formed funds in the years 1960–64. This means that the aggregate assets figures may be too low, and the size of the error may tend to increase as the sample year moves farther from 1959.

However, there are two factors that may keep the error within reasonable bounds. First, the growth of funds in the sample is sometimes augmented by the merger of an existing fund not in the sample. This lends an offsetting upward bias, but probably not a very large one, to the estimate of aggregate assets. Second, new funds are likely to be relatively small in terms of assets for several years after their inception, even if they cover sizable numbers of persons, because past service liabilities are funded slowly.

On balance, it appears that the sample estimates are better for the earlier years. However, the figures for later years are not likely to be greatly in error.

PART II. PENSION FUNDS OF NONPROFIT ORGANIZATIONS

BY ELIZABETH T. SIMPSON

6. INTRODUCTION

Nonprofit organizations comprise a diverse group, but, in the past, statistics on their noninsured pension funds have been based mainly on funds for Protestant ministers. This paper attempts to compile more exact data for the group as a whole on total assets, their investment pattern, and the rate at which they are increasing.

The term "nonprofit organization" is used here to refer to nongovernmental organizations exempt from taxation and described in section 501(c)(3) of the Internal Revenue Code. Included are membership corporations, community chests, funds, and foundations organized and operated exclusively for religious, charitable, scientific, literary, educational, or humane purposes. No part of their net earnings may benefit any stockholder or individual, and no substantial part of their activities may be directed toward influencing legislation. Other nongovernmental exempt organizations are also discussed briefly below in the section "Other Nonprofit Organizations."

An investigation of pension plans for employees of nonprofit organizations showed reliable statistics on the size and portfolio composition of the noninsured funds reporting annually to the Church Pensions Conference and on a few similar funds for colleges, groups of independent schools, small hospitals, and other organizations. Surveys have been made by various associations of nonprofit organizations to ascertain the number of units with pension plans and the popularity of different plan features. In general, however, the surveys contribute only indirectly to knowledge of fund assets, growth rates, and portfolio composition.

This paper presents (by methods discussed in app. II) fairly comprehensive data on noninsured funds and the first estimates of reserves of insured plans for nonprofit organizations. The latter cover the years 1958–64. Pay-as-you-go pension plans are practically unfunded and have, therefore, been excluded.

The Standard Industrial Classification includes most nonprofit organizations under these major group headings: medical and other health services; educational services; museums, art galleries, and botanical and zoological gardens; nonprofit membership organizations; and miscellaneous services.[1] Historically, nonprofit retirement programs can be divided into four categories: religious bodies, educational institutions, hospitals, and other nonprofit organizations. The Standard Industrial Classification includes religious bodies and

[1] It should be noted that several of these headings also include profit-seeking organizations, but only nonprofit organizations will be included in this paper.

other nonprofit organizations in their category: nonprofit membership organizations. Educational institutions, as used here, include the nonprofit part of SIC's educational services, museums, art galleries, etc., and miscellaneous services. The SIC classifies each organization under its function rather than its affiliation; for example, all schools are grouped together, including parochial schools, and all hospitals together, including those that belong to a university.

This study is limited to private nonprofit organizations in the United States. In 1964, there were over 400,000 such organizations, counting each religious congregation, each nonpublic nonproprietary school and college, each voluntary hospital, and each other nonprofit organization. They had approximately 2.7 million employees. That figure excludes members of religious orders and ordained or unordained ministers who accept little or no remuneration for their services. The former are cared for by their orders whether they are active or no longer able to perform their duties. In a sense, they can be considered covered by a pay-as-you-go retirement plan, but that is outside the scope of this paper. Ministers who preach on Sundays, but depend on other jobs for their livelihood, probably look toward the latter for pension coverage. Probably between 10 and 20 percent of the 2.7 million employees work only part time and, therefore, may not be eligible for pension plan membership. The annual payroll for the full- and part-time employees was approximately $10 billion.

7. Size of Funds: Variations by Type of Plan and Type of Nonprofit Organization

Pension funds of nonprofit organizations amounted to $3.4 billion [2] at the end of 1964, or 4 percent of total private pension funds. Almost one-half of the nonprofit funds ($1.6 billion) were included in the figures on insured pension plans compiled by the Institute of Life Insurance. In contrast, as table II–1 shows, insured funds accounted for less than one-third of all other private pension funds.

TABLE II-1.—PERCENTAGE DISTRIBUTION OF PENSION FUNDS BY TYPE OF PLAN, NONPROFIT ORGANIZATION AND ALL OTHER PRIVATE GROUPS, 1958–64

[Dollar amounts in billions]

End of year	Nonprofit organization funds insured with—			Non-insured (percent)	All other private funds		
	Total	TIAA-CREF (percent)	Agency companies (percent)		Total	Insured (percent)	Non-insured (percent)
1958	$1.7	33.7	21.7	44.6	$39.2	37.5	62.5
1959	1.9	34.1	21.7	44.2	44.8	37.0	63.0
1960	2.2	34.0	22.5	43.5	49.9	35.5	64.5
1961	2.4	34.8	21.7	43.5	55.3	34.3	65.7
1962	2.7	36.0	20.9	43.1	61.0	33.3	66.7
1963	3.0	37.5	19.9	42.6	67.1	32.5	67.5
1964	3.4	38.4	19.7	41.9	74.1	31.9	68.1

Source: For derivation of funds of nonprofit organizations, see app. II. All other private funds: Insured, from "Life Insurance Fact Book," pension plans in the United States insured with life insurance companies, reserves end of year less TIAA and agency company plans for nonprofit organizations; noninsured from Securities and Exchange Commission, Statistical Bulletin, assets of private noninsured pension funds, book value, less corresponding funds for nonprofit organizations.

[2] In terms of book value, i.e., book value for noninsured funds, admitted assets (generally close to book value) for insured funds, including TIAA, and an estimate of book value for CREF. The latter was computed here by cumulating income and disbursements but omitting changes in market value of common stock.

The largest part of the insured funds of nonprofit organizations ($1 billion in 1964) was carried with Teachers Insurance & Annuity Association. TIAA is a legal reserve life insurance company, but it does not employ agents, and its services are restricted to nonprofit, tax-exempt educational and scientific institutions. Other insurance companies are called agency companies here. They include a few companies, generally affiliated with religious bodies, similar to TIAA but unimportant in the aggregate; also the National Health & Welfare Retirement Association, which maintains a retirement system for employees of nonprofit organizations engaged in charitable, health, and welfare work. The latter's reserves of $0.2 billion in 1964 were reinsured 100 percent with an agency company.

College Retirement Equities Fund provides variable annuities for participants in TIAA's fixed-dollar pension plans. While CREF is not an insurance company and its funds are not included in the ILI tabulations, they are included here with those of TIAA because of their affiliation. In 1964 CREF accounted for $0.3 billion.[3]

The TIAA–CREF percentages are an overstatement since they include reserves for some publicly supported universities and for educational institutions in Canada and other foreign countries. The agency-insured and the noninsured percentages of nonprofit organizations, on the other hand, are understated because of incomplete coverage. The total figures for nonprofit organizations, however, may be fairly accurate.[4]

A further breakdown of funds by purpose of nonprofit organization is possible for 1960 and is shown in table II–2. The largest amounts are for educational institutions with TIAA–CREF plans and for religious bodies with noninsured plans. Total funds for hospital pension plans have increased substantially since 1960, but they are still probably smaller than for any of the other groups.

TABLE II-2.—PERCENTAGE DISTRIBUTION OF PENSION FUNDS OF NONPROFIT ORGANIZATIONS BY PURPOSE OF ORGANIZATION AND TYPE OF PLAN, END OF 1960

	Religious bodies	Educational institutions	Hospitals	Other nonprofit organizations	Total
Insured with—					
TIAA–CREF	0	33.8	0.1	0.1	34.0
Agency companies	1.0	7.6	3.9	9.9	22.5
Noninsured	33.5	2.2	.1	7.8	43.5
Total	34.5	43.6	4.1	17.8	100.0

Note: Totals do not always add because of rounding.

Source: See app. II.

Growth rates of the dollar amounts depend on rates of increase in pension coverage, contributions, benefit payments, and fund earnings. Table II–3 shows that in 1960 about a third of all units of nonprofit organizations had pension plans and a fifth of the employees were

[3] In terms of market value, total pension funds of nonprofit organizations aggregated $3.7 billion. This figure is composed of $1.6 billion noninsured (compared to book value of $1.4 billion), $0.7 billion agency-insured, $1 billion TIAA, and $0.4 billion CREF. Admitted assets were used for the insured funds, but if market values were available, in all probability the total would not be affected.

[4] For sources of data and estimating techniques, see app. II.

covered. It should be noted that pay-as-you-go coverage is omitted since it would add virtually nothing to total pension funds. Within the four groups, coverage rates varied from 10 to 35 percent; within subgroups, the variation was even greater.

TABLE II-3.—PENSION COVERAGE RATES OF NONPROFIT ORGANIZATIONS BY PURPOSE OF ORGANIZATION, END OF 1960

	Religious bodies	Educational institutions	Hospitals	Other nonprofit organizations	Total
Units:					
Number (thousands)	310	26	4	75	415
Percent with pension plans	40	15	15	10	33
Employees:					
Number (thousands)	400	450	850	500	2,200
Percent with pension plans	30	35	10	20	20

Note: Excludes pay-as-you-go coverage.

SOURCES

Number of units; Religious bodies, from National Council of Churches, "Yearbook of American Churches for 1961"; Educational Institutions, from Bureau of the Census and Bureau of Old-Age and Survivors Insurance, "County Business Patterns," 1st quarter 1959 and 1962, part I, educational services, museums, art galleries, etc., and nonprofit research organizations less correspondence and vocational schools; Hospitals, from American Hospital Association, Hospitals, Guide Issue (Aug. 1, 1961) for voluntary hospitals. Other nonprofit organizations from "County Business Patterns" (1959 and 1962), nonprofit membership less religious organizations.

Number of employees: Religious bodies, lay workers, from "County Business Patterns"; ministers, priests, and rabbis: see app. II. Educational Institutions, Hospitals, and Other Nonprofit Organizations, same as for number of units. Members of religious orders are excluded.

Coverage: From annual reports of TIAA–CREF and various noninsured funds and answers to questionnaires sent to life insurance companies and pension boards. See app. II.

Protestant Ministers

The Church Pensions Conference, a group of pension-plan officials that has been meeting annually for 50 years, accounts for most of the noninsured funds of religious bodies. A group of 19 Protestant denominations reporting to the conference for the 23-year period 1942-65 showed a rise in coverage of ministers from 50 to 70 percent.[5] In 1965 the coverage rates of the different denominations included ranged from 60 to 95 percent. While there were many other Protestant bodies, they were represented by comparatively few ministers who devoted most of their time to and derived most of their income from the ministry and, therefore, were potentially eligible for coverage by a church plan. Most of the larger Protestant denominations not affiliated with the Church Pensions Conference, even some with little or no central organization, had plans either in operation or under study by 1965. In general, the plans were relatively new and had low but gradually increasing coverage. Less than 55 percent of all Protestant clergymen (estimated at about 175,000 in 1960) making a career of the ministry were covered by a pension plan. The well-established CPC plans had an average total contribution rate of 12 percent of salary. Some of the other plans depended mainly on special annual offerings of church members and had low dues, but in general the tendency was to try to pattern them after the larger CPC plans. There is, therefore, a good chance of expansion in noninsured funds of Protestant bodies; over the years 1960–64, there was an annual increase of almost 11 percent.

[5] Estimates based on data given by Kenneth H. Ross in "Pension Plans of the Various Religious Denominations," *Transactions of the Seventeenth International Congress of Actuaries*, vol. II, pp. 727–740, and on the 1965 statistical report of the Church Pensions Conference. It should be noted that the 19 denominations had been reduced by merger to 14 in 1965.

Catholic Priests

Retirement plans for the 33,000 diocesan Catholic priests in the United States vary among the 26 archdioceses and 112 dioceses. In 1960 more than half of the jurisdictions had an organization with a title such as Infirm Priests' Fund or Priests' Mutual Benefit Society. These provide medical care and, in some dioceses, a pension plan. Correspondence with a sample of the larger archdioceses reporting such funds or societies suggests that pension plans were available to about 10 percent of all diocesan priests. In other dioceses a priest is promised a salary or sustenance payment for life. There is ordinarily no fixed retirement age; the priest retires at his request and with permission of his bishop, but usually only when he feels he is no longer able to perform his duties. Some of the plans were funded, but not fully, and a few were insured. Whether there is a partially funded plan or just an agreement to support the priests for life, the payments required from the general funds of the diocese or from its parishes are proving very expensive these days, and some dioceses are looking into funding arrangements. The plans on which we have information generally provide a flat-sum benefit of $50 or $100 a month. Since no provision is made for dependents and few priests ask to be retired, the funds would be expected to be proportionately less than those for Protestant and industrial plans.

Rabbis

Over 3,000 ordained rabbis were active in religious work in the United States in 1960, and almost half of them belonged to three major rabbinical associations which reported insured pension plans. Coverage was estimated at almost 60 percent for this group. Information was not available for the remaining rabbis, some of whom belong to two other major associations or to minor groups, but their pension coverage is estimated to be low. The high proportion of rabbis who had elected social security coverage (92 percent in 1958) suggests a future increase in their pension funds.

Clergy of Other Religious Bodies

Other religious groups in the United States probably had around 2,000 ministers. Pension information is not available, but the largest group—Eastern Orthodox, with about 80 percent of total ministers—had 71 percent social security coverage in 1957, and may, therefore, have some pension coverage.

Lay Employees of All Religious Bodies

There were approximately 190,000 lay employees of religious bodies in 1960. Almost 60 percent were employed by Protestant churches and almost 40 percent by Catholic churches. Probably a large proportion only worked part time, and some were retired from jobs in industry or Government. Beginning in the 1930's, members of the Church Pensions Conference started to set up plans for lay employees. In a few denominations lay workers may join ministerial pension plans, but in the majority of the denominations the same board administers separate though similar plans for the two groups. In general, the lay Protestant plans are included in table II–2 among noninsured funds for religious bodies. In 1960 coverage was probably less than 3 percent for lay em-

ployees of local churches, but well over 50 percent for denominational board and National Council employees. Also included in the funds of religious bodies are small amounts for teachers and other employees of church-affiliated educational institutions which could not be subtracted. In general, however, church-affiliated educational organizations have joined the same plans as private schools and colleges.

Pension coverage is also very low at present for Catholic lay employees, but it received a stimulus in July 1962 with the inauguration of a plan that will eventually cover all lay employees of the Archdiocese of New York (including some in education, hospitals, and other nonprofit organizations).

EDUCATIONAL INSTITUTIONS

Colleges and Universities

In 1960 there were approximately 1,500 nonprofit, nonproprietary colleges and universities with 240,000 teachers, administrative personnel, and other employees. Ninety-five percent of the teachers were eligible for pension plans, or would be if they fulfilled certain requirements. Similar percentages for other types of employees were lower, but were probably over 80 percent for all employees including teachers. In contrast to this potential percentage of coverage was the actual rate of less than 50 percent. This was mainly the result of waiting periods and voluntary participation in numerous plans, and also of high turnover among nonacademic employees, some of whom were past the age of plan entry. The average waiting period was from 1 to 3 years, or until attainment of assistant professorship or equal rank, or age 30. Participation was voluntary in plans affecting approximately 28 percent of faculty members and 44 percent of clerical and secretarial employees. About three-quarters of the coverage was with TIAA–CREF. Recent TIAA–CREF annual reports have mentioned that waiting periods are being reduced and eligibility extended to new categories of employees. Also, as an added fringe benefit, contributory plans are being changed to noncontributory, and the change naturally tends to increase the coverage rate.

From 1960 to 1965 there was a large increase in private colleges participating in the TIAA–CREF retirement system. A few were new colleges or previously had had no pension plans, but most were just giving their employees a choice between TIAA–CREF and their other plan, or allowing them to add a variable annuity. Although about 20 percent of the private institutions of higher education (including junior colleges) had no pension plans, they employed only about 4 percent of all college faculty members, excluding members of religious orders. Therefore, the establishment of plans in colleges which do not have them at present will not have a large effect on coverage rates and fund assets.

Increasing contribution rates should increase fund assets, and this has been happening recently. Sixty percent of college teachers in 1959 and 75 percent in 1965 were members of plans with total contribution rates of over 10 percent (and up to 20 percent) of annual salary.

Elementary and Secondary Schools

There were approximately 19,000 nonpublic, nonproprietary elementary and secondary schools in the United States in 1960, with 120,000 teachers and other employees. Three thousand were independent or private schools and 16,000 were parochial schools. Pension plans were quite usual for teachers in private schools, including many more or less closely affiliated with religious bodies.

Almost three-quarters of the parochial schools were run by Catholic churches, but they employed just over half of all lay teachers. Protestant parochial schools accounted for a quarter of the schools and over one-third of the teachers. Approximately 2 percent of the schools and 10 percent of the teachers served Jewish education. George N. Shuster has pointed out that the present-day plight of Catholic parochial schools stems from the great surge in enrollment in the past two decades without a corresponding increase in members of teaching orders.[6] The situation has caused a large increase in the number of lay teachers and in the cost of school operation. Since it has not been possible to make most teachers' salaries comparable with those paid by the public and private schools, it is not surprising that pension plans are slow in developing. However, correspondence around the end of 1960 with dioceses and archdioceses with the largest numbers of lay teachers revealed that they were considering the problem. In 1961 the Diocese of Pittsburgh put into effect a TIAA plan for its high schools, and the following year the Archdiocese of New York announced a plan for all lay employees including those in its schools. By October 1960, pension plans were available for teachers and administrators in Jewish schools of all ideologies and in all communities in the United States and Canada. Among Protestant parochial schools there were various plans, including some of the Church Pensions Conference, for the National Union of Christian Schools and for individual schools. In general, coverage was low for all parochial schools; in fact, only about 20 percent of all private and parochial school employees were eligible.

It would appear that almost half of the coverage was in agency-insured plans, and a quarter each in TIAA and noninsured plans. In general, the TIAA plans were for the long-established private schools, and the noninsured plans for Protestant parochial schools in church plans. In 1960–65 the number of independent schools in TIAA increased from 272 to 368. Coverage of independent schools may be expected to increase as college and university coverage has in recent years. Protestant and Jewish parochial school coverage may also be expected to rise fairly rapidly, but it is very difficult at present to foresee how much Catholic parochial pension funds will increase. Pension increases won by unionized public schoolteachers may have an effect on independent and parochial schools.

Other Educational Services

There were about 90,000 employees in other educational services, of which two-thirds were in nonprofit research organizations. The remainder were in libraries, museums, art galleries, botanical and zoological gardens, and schools and educational services not elsewhere

[6] "Schools at the Crossroads," *Atlantic Monthly*, August 1962.

classified. Correspondence and vocational schools have been omitted because they were generally proprietary. About 25 percent of the employees in other educational services were actually covered by a pension plan. The majority had agency-insured plans, and a goodly number had TIAA–CREF annuities.

Greenough found that a very high proportion of the large research organizations and foundations had pension plans.[7] The waiting period was similar to that for colleges and universities and has probably been shortened somewhat since 1960. It was hoped that a new plan for museum personnel would raise the number covered in that field.

HOSPITALS

The greatest possibility of pension asset growth appears to be in the hospital field. The smallest amount of funds of any of the four types of nonprofit organizations (table II–2) is matched with the largest number of employees (table II–3). Most plans are comparatively new, and both coverage rates and assets per covered employee are low.

Approximately half the hospital employees are nonprofessional, other than clerical workers. They include nursing aids, practical nurses, maintenance workers, housekeeping and food service employees, and laundry workers. The next most populous class—the registered professional nurses, including those in supervisory and teaching positions—accounted for about a fifth. Both registered nurses and the nonprofessional group have high turnover rates and a large proportion of part-time workers. From the Bureau of Labor Statistics survey of hospital employees in the Nation's metropolitan areas in mid-1960, it is estimated that pension plans other than social security were available (or would be once certain requirements had been met) to about 37–38 percent of full-time registered nurses and nonprofessional employees in voluntary hospitals (see app. II). The rate was about 45–46 percent for full-time professional and technical employees other than nurses and full-time clerical workers. The latter two groups had lower turnover and fewer part-time workers than the former two groups. Information was not collected on executive and administrative personnel and part-time workers. Most of the plans are applicable to all categories of employees, but a great many are voluntary and contributory.

Although the American Hospital Association's national retirement program has been in existence since 1947, the highest coverage rates seem to be in areas where a regional plan operates, such as those of the Cleveland Hospital Council, Texas Hospital Association, Kaiser Foundation Hospitals in the Far West, and Jewish federations in the larger cities. Over 95 percent of the funds are insured with agency companies, including about 18 percent with National Health and Welfare Retirement Association.

Pension eligibility has been growing; the BLS study in mid-1963 showed 47 percent of registered nurses and nonprofessional workers and 50 percent of professional and technical and clerical employees

[7] William C. Greenough, "Compensation for Foundation Staff: Salary and Benefits," in Henry Sellin (ed.), *Fifth Biennial Conference on Charitable Foundations*, New York, 1961.

in hospitals with pension plans (see app. II). And, the rate is likely to grow steadily in the near future. "Hospitals are * * * finding it necessary to establish pension plans as a fringe benefit, so that they can compete with industry and other professional fields where pension and retirement benefits have long been an accepted part of the job." [8] "The hospital personnel of the future will have to come from closer to the top than the bottom of the barrel," says Ray E. Brown, vice president for administration, University of Chicago.[9] Union activity among nurses and nonprofessional hospital workers has created additional pressure for increased pension coverage. Furthermore, prepayment plans are helping general hospitals raise salaries and fringe benefits.

OTHER NONPROFIT ORGANIZATIONS

This category includes all of the Standard Industrial Classification Code's group 86, nonprofit membership organization, except group 8661, religious organizations, which corresponds to our category "religious bodies." These organizations together have approximately 500,000 employees, broken down as follows:

Charitable organizations	100,000
Professional membership organizations	10,000
Civic, social, and fraternal associations	205,000
Labor organizations	100,000
Business associations	50,000
Political organizations	5,000
Nonprofit membership organizations, n.e.c.	30,000

The first two groups and subgroups of some of the others fall under section 501(c)(3) of the Internal Revenue Code. The other groups and subgroups are not organized for profit and are also exempt from Federal income tax, but they promote the interests of their members and many engage in lobbying. They are included here only because they are probably not included elsewhere and our data are not detailed enough to exclude them.

The majority of the charitable organizations are affiliated with religious bodies. Most Jewish agencies are included in the federation plans which were mentioned in the section on hospitals. On the national level, coverage of Catholic charitable organizations is generally high; on the diocesan level, as is the case for other diocesan lay employees, pension plans are being studied but few have begun operating. Coverage is rather low, on the average, in Protestant charitable organizations. The American Red Cross dominates the groups not affiliated with religious bodies, and it has its own trusteed plan. In Cleveland there is a plan of the Welfare Federation to which religious and secular organizations belong. Approximately half of the charitable plans are insured, mostly with the National Health and Welfare Retirement Association, and the other half are self-administered.

Pension plans are quite common in the other groups listed under "other nonprofit organizations" except when the organization has very few paid employees. Most of the plans are insured, but some of the

[8] George R. Wren, "Why Waste Scarce Manpower With a Fixed Retirement Age?" *Hospitals*, Jan. 16, 1964.
[9] "The Impact of Wages and Hospital Costs," *Hospitals*, July 1, 1963.

larger ones are not. There are also some rather informal unfunded arrangements, which are not counted.

A study of full-time social welfare workers, including supervisors and executives, in 1960 [10] shows that two-thirds of the 40,000 in these classifications were enrolled in a pension plan other than social security. While most of these worked for charitable organizations, some are employed by the Y's, Scouts, Camp Fire agencies, and so forth, which are included by the Standard Industrial Classification Code and our population figures among "civic, social, and fraternal associations." Those employed by hospitals and schools have been omitted. The high average rate for full-time social workers and supervisors and executives in the social welfare field compared with the low rate for all workers in the other nonprofit organization category suggests that coverage is generally very low for clerical and maintenance personnel.

8. Growth Rates

High growth rates are usually associated with new pension funds, but if there are no extraneous influences, such as war, inflation, or depression, the rates gradually decline. A low growth rate would signify a mature fund with all employees covered, little increase in the work force or in compensation, and all pension liabilities fully funded.

The same pattern might also be expected for a large group of funds, such as all corporate noninsured pension funds. Pension systems for profit as well as nonprofit organizations and for governments began to be established in the United States toward the end of the 19th century, and an article in the *Atlantic Monthly* of April 1916 stated that "practically every large and well-established industry is providing for the disability and the old age of its employees." [11] It is estimated that corporate funds amounted to about $50 million in 1920 and grew at an average annual rate of almost 30 percent through the beginning of 1930. After that, depression and war brought about fluctuation of the growth rate. Through the thirties the rate was down to 8 percent, but with the war it rose sharply and then, as shown in table II–4, began to fall again.[12] The *Inland Steel* decision in 1949 that pensions are subject to mandatory collective bargaining pushed the rate up again, but since 1951 it appears to have been following the pattern.

Noninsured pension funds of nonprofit organizations may have accounted for 25 to 30 percent of total private noninsured funds in 1920, but the percentage has decreased rapidly to 9 percent in 1945 and 3 percent in 1964. The estimates for the period before 1945 are rough, but they suggest that growth rates were lower for nonprofit than for corporate noninsured funds. Growth rates of nonprofit funds were higher in the 1920's than in any subsequent period, but they were not as high as those of corporate funds. The nonprofit plans were voluntary, salaries were low, and most of the pension boards found that promotion of the pension idea to employers and young employees was a time-consuming process. They had still more difficulty in the 1930's

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[10] *Salaries and Working Conditions of Social Welfare Manpower in 1960*, a survey conducted by the Bureau of Labor Statistics, the National Social Welfare Assembly, Inc., and the Department of Health, Education, and Welfare.

[11] Joseph H. Odell, "The Economic Crime of the Protestant Church," pp. 442–451.

[12] Data for 1920–44 from Raymond W. Goldsmith, *A Study of Saving in the United States*, Princeton, N.J., 1955, vol. I, table I–15, p. 468.

TABLE II–4.—ANNUAL GROWTH RATES OF NONINSURED PENSION FUNDS OF NONPROFIT ORGANIZATIONS AND CORPORATIONS, 1946–64

Fiscal year	Nonprofit organizations	Corporations
1946	8.7	22.2
1947	7.0	20.9
1948	9.9	17.8
1949	10.1	16.0
1950	8.8	19.2
1951	10.9	24.0
1952	9.0	21.8
1953	8.0	21.9
1954	9.9	19.0
1955	10.5	17.3
1956	10.1	17.1
1957	9.6	16.3
1958	9.7	14.6
1959	10.5	14.8
1960	11.6	13.8
1961	10.6	13.0
1962	10.1	11.5
1963	10.0	11.0
1964	11.1	11.5

Source: Nonprofit organizations, see app. II. Corporations, 1946–50, computed from Raymond W. Goldsmith, Robert E. Lipsey, and Morris Mendelson, "Studies in the National Balance Sheet of the United States," Princeton University Press for NBER, 1963, table III–5j–1; 1951–64, computed from SEC, "Corporate Pension Funds, Supplemental Tables," table 15, and "Statistical Bulletin," June 1966.

when contributions to nonprofit organizations, and accordingly salaries and fringe benefits, were very low. Since nonprofit organizations are exempt from income tax and the majority of their employees are not unionized, their pension funds increased much less than those of corporations in the early 1940's and just following the 1949 decision. The silver lining to the nonprofit organizations' cloud is the slight upward trend in their growth rates from 1946 through 1964, as shown in table II–4, compared to a downward trend for corporate funds. It should be noted that the two growth rates were quite similar in 1964. Actually, the nonprofit pattern is wavelike; an increase in growth rates is followed by a decrease and then by another increase. The increases have been caused by the addition of new funds, increased coverage, and improvements in contribution rates and investment earnings. Inflation has been an important factor in raising contribution rates in the hope that future benefits will match cost-of-living rises. As shown in the preceding chapter, there is still room for a large pension expansion in the nonprofit field. There is a question as to how much of the expansion will be in noninsured funds, but it appears that the wavelike pattern of table II–4 will continue for nonprofit noninsured funds for some time.

The first insured pension policies were issued by TIAA in 1919 and by agency life insurance companies in 1921. By 1930, reserves for all insured pension plans amounted to $100 million. These funds seem to have followed the model; their growth rate dropped almost continuously from over 50 percent in the last half of the 1920's to 7 percent in the first half of the 1960's.[13]

[13] The growth rate for 1925–29 is based on figures for the 5 insurance companies that did the bulk of pension underwriting in that period, according to Murray Webb Latimer in *Industrial Pension Systems in the United States and Canada*, New York, 1932, vol. II. The 1930 figure for all insured pension plans is from the Institute of Life Insurance's *Private and Public Pension Plans in the United States*, New York, 1967.

Growth rates are shown separately in table II–5 for TIAA and all other insured pension plans (designated as agency insurance companies). The TIAA growth rate was above 30 percent in the late 1920's, but it dropped almost continuously through 1945. The table shows that it was lower in 1946 than the corresponding rate for agency insurance companies. TIAA rates began to rise again in the late 1950's, while those of agency companies continued to fall through the early 1960's. It is uncertain whether or not the slight rise in 1963–64 means a change in trend for the latter. The relative position of the two growth rates had changed between the beginning and end of the table; TIAA had a lower rate in 1946 and a higher rate in 1964 than agency companies.

TABLE II–5.—ANNUAL GROWTH RATES OF TIAA, CREF, AND AGENCY LIFE INSURANCE COMPANY PENSION RESERVES, 1946–64

Calendar year	TIAA	CREF	TIAA and CREF	Agency insurance companies for		
				Total	Nonprofit organizations	All others
1946	10.6	----------	10.6	18.1	----------	----------
1947	11.3	----------	11.3	17.0	----------	----------
1948	11.2	----------	11.2	19.0	----------	----------
1949	12.1	----------	12.1	16.5	----------	----------
1950	11.4	----------	11.4	16.3	----------	----------
1951	11.1	----------	11.1	17.7	----------	----------
1952	10.3	----------	10.6	17.4	----------	----------
1953	8.3	----------	9.6	14.9	----------	----------
1954	8.1	122.5	9.8	13.5	----------	----------
1955	8.0	67.8	9.8	13.5	----------	----------
1956	7.7	51.8	9.7	10.5	----------	----------
1957	8.5	44.3	10.7	13.0	----------	----------
1958	9.2	43.4	12.0	10.7	----------	----------
1959	9.3	40.2	12.6	12.8	11.2	12.8
1960	9.6	35.9	13.1	7.2	17.6	6.9
1961	10.1	32.2	13.6	7.3	7.0	7.3
1962	10.9	30.9	14.6	6.6	6.8	6.6
1963	12.6	28.9	16.0	7.6	5.9	7.6
1964	12.3	27.0	15.7	8.2	11.8	8.1

Source: TIAA and CREF from TIAA–CREF annual reports. See app. II. Agency insurance companies from "Life Insurance Fact Books," total reserves at end of year from table "Pension Plans in the United States insured with life insurance companies," less reserves mentioned above for TIAA. Plans for nonprofit organizations, see app. II.

The TIAA rise was caused by large increases in the number of participating institutions, mainly publicly supported colleges and universities, but also private nonproprietary institutions; and by reduction of waiting periods, extensions of coverage to other categories of employees, and increasing contribution rates. The increases would have been even larger if it had not been for the diverting of part of TIAA annual premiums to CREF beginning in mid 1952.

Since CREF offers variable annuities, its statements are in terms of market value and its balance sheets show no fixed reserves. The second column of table II–5 was obtained from cumulated funds, omitting increases in market value of common stock. For the available years CREF growth rates follow the model perfectly. When the data are combined for TIAA and CREF, the fall is reduced and the following rise magnified. TIAA–CREF and noninsured funds for nonprofit organizations both show wavelike patterns with an upward trend.

The growth rates for pension plans carried by agency life insurance companies are practically the same as for all insured pension plans,

which, as we have seen, follow the model rather closely. Only since 1958 has it been possible to break agency-insured pension funds down into reserves for nonprofit organizations and for all others. The period is rather short for detecting trends, but all funds except those for nonprofit organizations include such a large proportion of all agency-insured funds that one would expect the former to follow the trend of the latter. In the 6-year period that expectation appears to come true. In 4 of the 6 years insured funds for nonprofit organizations show quite different growth rates from those of all agency-insured or all insured pension plans. This suggests that growth rates of plans for nonprofit organizations, whether self-administered (noninsured) or insured, and whether insured with TIAA–CREF or agency companies, tend to have a wavelike pattern and probably will continue for some time to show an upward trend. This is in contrast to corporate funds, whether insured or noninsured.

9. Portfolio Composition

The investment portfolios of noninsured pension funds of nonprofit organizations and corporations are distributed as shown in tables II–6 and II–7. Table II–6 shows that in nonprofit funds the proportions of common stock and mortgages increased and Government bonds and preferred stock fell over the period 1951–64. The proportion of non-Government (corporate and other) bonds increased through 1960, but has since decreased slightly.[14]

Comparison of tables II–6 and II–7 suggests that, on the average, the investment managers of nonprofit and corporate funds have followed similar policies, although the former have been slower in increasing their holdings of common stock and decreasing their holdings of non-Government bonds. In general, the nonprofit funds have professional investment counsel, and their trustees include businessmen and bankers. However, ministers, Y secretaries, social workers, and others are also on their boards, and some of them have conservative leanings. In addition, some of the funds must observe investment restrictions that can only be changed at statutory meetings of the parent body. The proportion of the portfolio in mortgages has been larger for nonprofit than for corporate funds. The latter, however, have recently been increasing this proportion more rapidly than nonprofit funds.

Table II–8 shows that, in general, the ratio of market to book value was as high for the nonprofit organization funds as for the corporate funds.

Before 1962 the assets behind insured pension plans were entirely commingled with all other assets of life insurance companies and, therefore, were subject to the same investment regulations. Greater

[14] These distributions were obtained from aggregate figures. Individual funds show wide variations, but the aggregate does not seem to be dominated by large atypical funds. In 1964, approximately 80 percent of the number of funds fell within the following ranges:

U.S. Government securities	3–15 percent.
Corporate and other bonds	20–60 percent.
Preferred stock	Less than 3 percent.
Common stock	10–40 percent.
Mortgages	Less than 20 percent.

TABLE II-6.—PERCENTAGE DISTRIBUTION OF PORTFOLIOS OF NONINSURED PENSION FUNDS OF NONPROFIT ORGANIZATIONS, SELECTED YEARS, 1951-64

	1951	1955	1960	1964
Book value, end of year:				
Cash and deposits	1.2	1.7	1.5	0.7
U.S Government securities	26.6	18.3	11.1	8.2
Corporate and other bonds[1]	37.6	43.9	47.4	45.4
Preferred stock	12.6	7.5	4.1	1.7
Common stock	15.6	20.4	21.1	26.2
Mortgages	5.7	7.6	11.6	13.2
Other assets	.7	.6	3.2	4.6
Total assets:				
Percent	100.0	100.0	100.0	100.0
Amount (billions of dollars)	.4	.6	1.0	1.4
Market value, end of year:				
Cash and deposits	1.2	1.5	1.4	.6
U.S. Government securities	25.5	15.7	10.0	6.7
Corporate and other bonds[1]	36.1	38.6	40.6	39.0
Preferred stock	12.3	6.9	3.3	1.4
Common stock	18.6	30.0	31.2	36.7
Mortgages	5.6	6.7	10.6	11.5
Other assets	.7	.6	2.9	4.1
Total assets:				
Percent	100.0	100.0	100.0	100.0
Amount (billions of dollars)	.4	.7	1.0	1.6

Source: See app. II.

[1] Includes World Bank, State and local government, eleemosynary, and foreign government and corporate as well as U.S. corporate.

TABLE II-7.—PERCENTAGE DISTRIBUTION OF PORTFOLIOS OF NONINSURED CORPORATE PENSION FUNDS, SELECTED YEARS, 1951-64

	1951	1955	1960	1964
Book value, end of year:				
Cash and deposits	4.1	2.4	1.4	1.5
U.S. Government securities	31.4	17.8	7.1	5.2
Corporate bonds	44.7	49.9	48.4	41.1
Preferred stock	4.0	3.6	2.3	1.2
Common stock	12.3	21.2	33.5	41.6
Mortgages	3.4	1.4	3.0	4.4
Other assets		3.7	4.3	5.0
Total assets:				
Percent	100.0	100.0	100.0	100.0
Amount (billions of dollars)	7.2	14.9	30.3	47.3
Market value, end of year:				
Cash and deposits	(1)	2.1	1.3	1.2
U.S. Government securities	(1)	15.6	6.2	4.2
Corporate bonds	(1)	43.7	40.2	32.4
Preferred stock	(1)	3.3	1.9	1.0
Common stock	(1)	30.7	43.9	53.4
Mortgages	(1)	1.2	2.7	3.6
Other assets	(1)	3.3	3.8	4.2
Total assets:				
Percent	(1)	100.0	100.0	100.0
Amount (billions of dollars)	(1)	16.7	34.1	58.1

Source: "SEC Statistical Bulletin," June 1966, and SEC release of July 1964, "Corporate Pension Funds, Supplemental Tables."

[1] Not available.

latitude in investments of pension funds kept in separate accounts is now permitted in practically all States, but only 0.3 percent of all insured pension funds were in separate accounts by the end of 1964. Therefore, the portfolio distribution of all life insurance assets is used for pension funds of agency insurance companies in table II-9,

TABLE II-8.—RATIOS OF MARKET TO BOOK VALUES FOR SECURITY INVESTMENTS OF NONINSURED PENSION FUNDS OF NONPROFIT ORGANIZATIONS AND CORPORATIONS, SELECTED YEARS, 1951-64

	1951	1955	1960	1964
Nonprofit organizations, end of year:				
U.S. Government securities	0.97	0.97	0.98	0.94
Corporate and other bonds	.98	1.00	.94	.98
Preferred stock	.99	1.05	.89	.98
Common stock	1.21	1.67	1.62	1.60
Corporations, end of year:				
U.S. Government securities	(1)	.98	.99	.99
Corporate bonds	(1)	.98	.93	.97
Preferred stock	(1)	1.02	.92	1.02
Common stock	(1)	1.62	1.47	1.58

Source: Same as tables II-6 and II-7.

[1] Not available.

and is comparable with the book-value panels of tables II-6 and II-7. The main difference between insured and noninsured portfolios is in common stock and mortgages. In 1964, agency insurance companies held 3.6 percent of their assets in common stock and 36.8 percent in mortgages, and the corresponding percentages were 26.2 and 13.2 for noninsured funds for nonprofit organizations. The discrepancy between insured and corporate noninsured was even greater. Information is not now available for the separate accounts of insured pension reserves; but, it is probable that if their portfolio were substituted for that of all insurance company assets, the discrepancy between insured and noninsured pension fund portfolios would be smaller.

TABLE II-9.—PERCENTAGE DISTRIBUTION OF PORTFOLIOS OF INSURED PENSION FUNDS, AGENCY INSURANCE COMPANIES, AND TIAA-CREF, SELECTED YEARS, 1951-64

	1951	1955	1960	1964
Agency life insurance companies, end of year:				
Cash and deposits	1.6	1.4	1.1	1.0
U.S. Government securities	16.2	9.5	5.4	3.8
Corporate and other bonds [1]	41.9	43.3	43.6	41.7
Preferred stock	2.1	1.9	1.5	1.7
Common stock	1.2	2.1	2.7	3.6
Mortgages	28.2	32.5	34.8	36.8
Other assets	8.8	9.3	10.9	11.4
Total assets	100.0	100.0	100.0	100.0
TIAA-CREF, end of year: [2]				
Cash and deposits	.7	.6	.4	.2
U.S. Government securities	1.5	1.2	.7	.3
Corporate and other bonds [1]	40.5	41.0	34.9	29.9
Preferred stock	1.6	.8	.3	(3)
Common stock	(3)	5.2	16.3	27.0
Mortgages	52.9	48.4	43.9	39.7
Other assets	2.8	2.8	3.5	2.9
Total assets	100.0	100.0	100.0	100.0

Source: Based on Life Insurance Fact Books and annual reports of TIAA-CREF. See app. II.

[1] See table II-6, note 1.
[2] CREF was established in 1952; therefore, 1951 figures include only TIAA.
[3] Less than 0.05 percent.

Teachers Insurance & Annuity Association is a limited-eligibility life insurance company concentrating on insured pension plans. Its companion organization, College Retirement Equities Fund, was established in 1952 to provide variable pension annuities, and its assets are, therefore, all invested in common stock. The 1951 distribution is for TIAA alone and shows a considerably larger proportion of assets

in mortgages and a smaller proportion in Government bonds than the corresponding distribution for agency companies. TIAA varied its portfolio distribution only slightly over the years 1951–64, but, with the addition of increasing amounts in CREF, the lower panel of table II–9 shows a large growth in common stock and decreases in nongovernment bonds and mortgages. These trends are expected to continue, especially since a change in TIAA–CREF rules allows as much as 75 percent of each pension premium due on or after January 1, 1967, to be allocated to CREF and the remainder to TIAA. Previously not more than 50 percent could go to CREF. The TIAA–CREF portfolio for 1964 shows 27 percent in common stock, practically the same as the corresponding book-value distribution of noninsured funds of nonprofit organizations. The main difference between the two funds is TIAA–CREF's larger holdings of mortgages and lower holdings of bonds.

In table II–10, all the insured and noninsured pension funds of nonprofit organizations are combined. The table shows that over the years 1958–64 Government securities, other bonds, and preferred stock fell slightly while common stock rose markedly and mortgages showed little change. In spite of these changes, in each of the years shown, the three most important items remained in the same order: Corporate and other bonds, mortgages, and common stock.

TABLE II–10.—PERCENTAGE DISTRIBUTION OF PORTFOLIOS OF TOTAL PENSION FUNDS FOR NONPROFIT ORGANIZATIONS, YEAREND, 1958–64

	1958	1959	1960	1961	1962	1963	1964
Total assets (billions of dollars)	1.7	1.9	2.2	2.4	2.7	3.0	3.4
Cash and deposits	1.1	1.1	1.0	.9	.9	.7	.6
U.S. Government securities	6.3	6.7	6.3	6.2	4.9	4.3	4.3
Corporate and other bonds	44.1	43.5	42.3	41.4	40.9	40.2	38.5
Preferred stock	3.4	2.8	2.2	2.0	1.6	1.2	1.0
Common stock	12.8	13.7	15.4	17.0	18.9	20.4	22.0
Mortgages	27.8	27.7	27.8	27.4	27.2	27.5	28.1
Other assets	4.5	4.5	5.0	5.1	5.6	5.7	5.5

Source: Based on combined portfolio for (1) noninsured funds of nonprofit organizations plus (2) funds insured with, TIAA–CREF and (3) agency-insured funds for nonprofit organizations. See app. H.

Table II–11 shows that the funds were large purchasers of each of these three types of securities. In fact, they purchased $100 million or more of each type in 1964, more than a half billion dollars each of nongovernment bonds and common stock, and only slightly less of mortgages over the 6-year period.

TABLE II–11.—USES OF TOTAL PENSION FUNDS BY NONPROFIT ORGANIZATIONS IN THE CAPITAL MARKETS, 1959–64

[In millions of dollars]

	1959	1960	1961	1962	1963	1964
Cash and deposits	+1	+2	−1	+3	−3	−3
U.S. Government securities	+20	+9	+14	−21	−1	+15
Corporate and other bonds	+74	+87	+77	+99	+103	+100
Preferred stock	−4	−5	(1)	−5	−8	(1)
Common stock	+43	+71	+76	+96	+103	+136
Mortgages	+53	+74	+57	+67	+92	+127
Other assets	+10	+22	+15	+27	+19	+15
Total	+197	+260	+238	+266	+305	+390

Source: Based on the same data as table II–19.

[1] Less than 0.5.

Similar data are given for multiemployer and union funds in table I–8, above, for the years 1960–64. In general, the multiemployer and union funds are newer than the nonprofit funds, so they would be expected to increase more rapidly. Actually, the multiemployer and union funds increased from $1.3 billion in 1959 to $3 billion in 1964. The corresponding figures for nonprofit organizations are $1.9 billion and $3.4 billion. The uses of funds for the two types of pension funds for the combined period 1960–64 are as follows (in millions of dollars):

	Multiemployer and union funds	Nonprofit organization funds
Cash and deposits	+108	−2
U.S. Government securities	+17	+16
Corporate and other bonds	+610	+466
Preferred stock	+9	−18
Common stock	+536	+482
Mortgages	+427	+417
Other assets and investments	+63	+98
Total	+1,770	+1,459

The nonprofit organization pension funds have less need for cash since their expenses are usually paid by the parent organization. Otherwise, the two distributions are fairly similar.

RATE OF RETURN ON INVESTMENTS

To measure investment performance, most fund managers compute a rate of return on investment, usually the ratio of interest and dividends to mean invested assets (including cash) less half the invested income. Some use gross investment income; others subtract out amortization, depreciation, mortgage service fees, and investment management fees. Another difference is whether the ratio is based on book or market value, or some combination of the two.

Table II–12 presents comparable rates for pension funds of nonprofit organizations and other pension arrangements. It shows that the highest mean yield was realized by TIAA, which had the largest proportion of bonds and mortgages and the lowest proportion of stock. At the other extreme is corporate pension funds with the lowest yield, highest proportion of stock, and lowest proportion of bonds and mortgages. Noninsured funds of nonprofit organizations show a slightly higher mean yield than corporate pension funds, a somewhat lower portfolio proportion in stock, and a somewhat higher proportion in bonds and mortgages.

The table bears out Dietz's statement: "A measure of performance based only on ordinary income [15] is misleading when trying to compare two or more funds. The fund invested in equities would have been unduly penalized during the 10-year period of this study (1953–62) because equities generally produced a lower rate of present return (compared to bonds), with the expectation of a future increase in value." [16]

Table II–13 and chart II–1 present rates of return computed according to Dietz's preferred formula. He defines investment income as

[15] I.e., interest and dividends.
[16] See Peter O. Dietz, *Pension Funds: Measuring Investment Performance*, New York, 1966, p. 49.

TABLE II-12.—RATIO OF GROSS INCOME FROM INTEREST AND DIVIDENDS TO BOOK VALUE OF TOTAL ASSETS FOR NONINSURED PENSION FUNDS OF CORPORATIONS AND NONPROFIT ORGANIZATIONS AND FOR AGENCY INSURANCE COMPANIES AND TIAA, 1958-64

[In percent]

	Noninsured pension funds of—		Agency insurance companies	TIAA
	Corporations	Nonprofit organizations		
1958	3.91	3.94	4.12	4.26
1959	4.01	4.05	4.34	4.51
1960	4.08	4.17	4.48	4.96
1961	4.08	4.33	4.57	5.12
1962	4.06	4.27	4.72	5.26
1963	4.08	4.36	4.85	5.36
1964	4.17	4.36	4.97	5.42
Mean	4.06	4.21	4.58	4.98

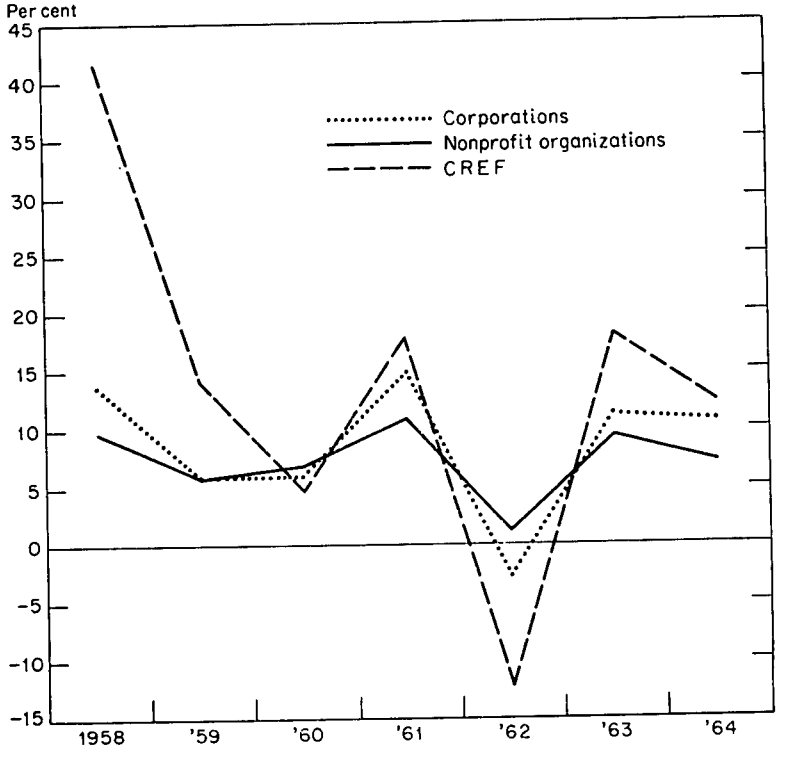
Note: The denominator of the ratio is the arithmetic mean of total assets at the beginning and end of the given year less half the corresponding gross income from interest and dividends.

Source: Corporations: Computed from "SEC Statistical Bulletin," June 1964 and 1965 and SEC release of July 1964, "Corporate Pension Funds, Supplemental Tables."

Nonprofit Organizations: See app. II.

Agency insurance companies and TIAA: Computed from Annual Reports of the Superintendent of Insurance, State of New York, vol. I-A, 1958-65, New York State companies and companies of other States licensed to do business in New York. Balance sheets were changed to include book value rather than market value of stock.

CHART II-1.—Ratio of Gross Income from Interest and Dividends Plus Realized and Unrealized Gains and Losses to Market Value of Total Assets for Noninsured Pension Funds of Corporations and Nonprofit Organizations and CREF, 1958-64



Source: Table II-13.

"ordinary income plus realized and unrealized gains and losses" or as M_2-M_1-C, where M_1 is market value of the fund at the beginning of the period, M^2 is market value at the end of the period, and C is net contributions to the fund. The formula naturally uses market value also in the denominator $(M_1+\frac{1}{2}C)$ of the ratio.

TABLE II-13.—RATIO OF GROSS INCOME FROM INTEREST AND DIVIDENDS PLUS REALIZED AND UNREALIZED GAINS AND LOSSES TO MARKET VALUE OF TOTAL ASSETS FOR NONINSURED PENSION FUNDS OF CORPORATIONS AND NONPROFIT ORGANIZATIONS AND CREF, 1958-64

[In percent]

	Noninsured pension funds of—		
	Corporations	Nonprofit organizations	CREF
1958	13.70	9.72	41.52
1959	5.86	5.79	14.04
1960	5.87	6.94	4.63
1961	14.79	10.86	17.91
1962	−2.68	1.07	−12.41
1963	11.17	9.33	18.19
1964	10.61	7.18	12.37
Mean	8.47	7.27	13.75

Note: The formula is shown in the text. Net contributions (C) is the difference between total receipts from dues, donations, annuity agreements, etc., and all payments, grants, and expenses.

Source: Same as for table II-12 for corporations and nonprofit organizations. CREF: Computed from TIAA-CREF annual reports.

Table II–13 omits the insurance companies because they do not present data on market value of all bonds and stock. It includes CREF, which was omitted from table II–12 for lack of data in terms of book value. The highest mean ratio in table II–13 was obtained by CREF, whose portfolio was invested almost entirely in common stock. The noninsured funds of nonprofit organizations realized the lowest mean rate of return of the three groups shown in the table. They had the smallest proportion of portfolio in stock and the largest proportion in bonds and mortgages. If data were available for TIAA and agency insurance companies, their mean rates of return would in all probability be considerably lower than that of noninsured funds of nonprofit organizations because they were invested more in bonds and mortgages and less in stock than the latter.

Chart II–1 shows the variability of returns over the years 1958–64. This is commonly considered a measure of risk. Comparison of the mean yields from table II–13 with the chart shows that the higher the mean rate of return, the higher the risk. Thus CREF, with the highest mean rate (13.75 percent), showed a loss rate of 12.41 percent in 1962 and a gain rate of 41.52 percent in 1958. The noninsured pension funds of nonprofit organizations, on the other hand, with the lowest mean rate (7.27 percent), showed the lowest variability. As mentioned above, TIAA would probably have a still lower mean rate of return. The observed relationship between mean rate of return and year-to-year variability in the rate suggests that TIAA would also have a lower variability or risk than any shown on the chart. Thus participants in CREF who must also participate in TIAA have prob-

ably had a lower mean rate of return and risk of not receiving such a return annually than shown for CREF. How much lower these rates would be would, of course, depend on how they had chosen to divide their contributions between the two companion organizations. It is possible that the return to the average participant in noninsured pension funds of nonprofit organizations and to the average participant in TIAA–CREF might be similar. The return to the average participant in pension plans carried with agency insurance companies would probably be lower unless their reserves were kept in separate accounts.

The series for noninsured pension funds of nonprofit organizations shown in table II–13 and the chart are aggregates of numerous funds. Managers of the individual funds may wish to apply the formula to their data and compare the results with those shown in the table.

10. Conclusions

Although many of the pension funds of nonprofit organizations have been in existence 40 to 50 years or longer, there are good reasons for believing that the group as a whole will continue to show a fairly substantial growth rate. This is in contrast to the normal pattern as shown by corporate pension funds. The latter have been increasing, but at a consistently declining rate.

There are two major reasons for the expected steady growth in nonprofit pension funds: first, only about one-third of all units of nonprofit organizations had pension plans at the end of 1960 and only about one-fifth of the employees were eligible for coverage; second, once some individuals have the prospect of a small income after retirement, they realize they need more. As pointed out by Cagan,[17] economists are aware of the tendency of group pension plans and GI insurance to cause certain individuals to increase their saving in other forms. Employees of nonprofit organizations other than ministers only became eligible for OASI coverage in 1951, and ministers in 1955. Most employees are now covered, also a large proportion of Protestant ministers, rabbis, and some Catholic priests. For those covered by OASI, but not by a private plan, it is not difficult to see that income after retirement will probably be low compared to needs. In general, directors of nonprofit organizations are aware of this fact and are trying to establish pension plans or raise low benefits through increased premium assessments.

The groups for which pension funds are expected to expand markedly are lay employees of religious bodies; lay teachers and other employees of parochial schools and private schools; hospital workers, especially registered nurses and nonprofessional employees other than clerical workers and nonprofessionals in Catholic and Protestant charitable organizations. There are also indications of substantial future growth in funds for retirement or support of aged Catholic priests.

It must be noted that the expected growth in pension funds of nonprofit organizations will not all show up in the figures on private noninsured funds, since over half the funds were insured in the years

[17] See Phillip Cagan, *The Effect of Pension Plans on Aggregate Saving: Evidence from a Sample Survey*, Occasional Paper 95, New York, National Bureau of Economic Research, 1965, pp. 5f.

1958–64. While in the past some of the plans insured with agency companies have changed over to noninsured funds, and this trend is likely to continue, when smaller organizations set up plans they will probably be insured. Also, TIAA and CREF have such a large proportion of the higher educational field and the advantage of portable pensions that few if any of their funds are likely to be transferred to noninsured funds.

A combined portfolio of all pension funds of nonprofit organizations amounted to $3.4 billion at the end of 1964, with 39 percent invested in corporate and other bonds, 28 percent in mortgages, and 22 percent in common stock. It should be noted that these figures include noninsured funds at book value and CREF at an estimate of book value computed only in this paper. When market values are substituted for the two series, the total is $3.7 billion, with 30 percent invested in common stock; 35 percent in bonds, excluding U.S. governments; 26 percent in mortgages. In that year the combined funds purchased $136 million in common stock, $127 million in mortgages, and $100 million in corporate and other bonds. The expected sustained rate of growth in total pension funds of nonprofit organizations suggests a continued flow of funds to the securities markets.

Appendix II. Sources and Limitations of Data

UNITS, EMPLOYEES, AND PAYROLL

Estimates of the population of employees of nonprofit organizations were mainly taken from the 1959, 1962, and 1964 editions of the U.S. Bureau of the Census *County Business Patterns*. These publications show number of employees as of mid-March pay period, the taxable payroll for January–March, and number of units reported under the Federal Insurance Contributions Act for the old-age, survivors, and disability insurance program. The data are presented in the Standard Industrial Classification three-digit code. All Government employees are excluded. While data for nonprofit organizations are included only if they are covered under the elective provisions of the act, the 1959 publication says that nearly all eligible employees are now covered by the program.

Certain modifications, which had to be made for the purposes of this report, are shown below. Units (in nonmanufacturing industries) are counted only once in each county. Therefore, units for religious bodies and for elementary and secondary schools had to be compiled from other sources.

Religious Bodies

The number of units comes from the *Yearbook of American Churches*, published annually by the National Council of Churches of Christ in the U.S.A. The number of employees shown in *County Business Patterns* for religious organizations refers to lay employees only. Estimates for ministers, priests, and rabbis were obtained from *Yearbook of American Churches* and an interview with its editor, Benson Y. Landis; from *The Official Catholic Directory*, published annually by P. J. Kenedy & Sons; and from H. S. Linfield, *The Rabbis of the United States*, published by the Jewish Statistical Bureau in 1957. The Linfield data are for 1954, but estimates of rabbis active in religious work were made for 1960 on the basis of the increase since a previous study (1927) made by the same author.

A breakdown of lay employees into major religious bodies served, was estimated from a study reported by F. Ernest Johnson and J. Emory Ackerman in *The Church as Employer, Money Raiser, and Investor* (New York, 1959), from a conversation with an official of a large Catholic archdiocese and information in *The Official Catholic Directory* on Catholic population and number of parishes, and from data on the number of Jewish congregations in the *Yearbook of American Churches* and other information in *The Rabbis of the United States*.

Educational Institutions

Correspondence and vocational schools were subtracted from educational services on the assumption that the majority were proprietary organizations; museums, art galleries, botanical and zoological gardens, and nonprofit research agencies were added.

A list of nonpublic senior colleges and universities was compiled from *Retirement and Insurance Plans in American Colleges* by William C. Greenough and Francis P. King (New York, 1959), and nonpublic junior colleges were added from the *World Almanac, 1960*. For Catholic colleges the number of lay teachers was added from *The*

Official Catholic Directory, and for all other colleges, total teachers from the *World Almanac*. Colleges with no lay teachers or no information on number of teachers were omitted. The following results were obtained:

	Colleges	Teachers
Nonprofit	1,061	113,600
Proprietary	36	1,400
Total	1,097	115,000

From *County Business Patterns*, it would appear that the total number of private colleges should be between 1,500 and 1,600 and total employees around 245,000. It is estimated, therefore, that in 1960 there were about 1,500 private nonprofit colleges with the following breakdown of total employees:[18]

Faculty	130,000
Administrative officers	27,000
Nonacademic employees	83,000
Total	240,000

The number of elementary and secondary school units and lay teachers was compiled from *The Official Catholic Directory*, 1960; the January 1962 issue of the Lutheran Church—Missouri Synod's *Parish Education Bulletin; Why a Pension Program for Teachers and Administrators in Jewish Schools*, November 1957, pamphlet of the American Association for Jewish Education; and *Private Independent Schools, 1960*, published by James E. Bunting and *The Handbook of Private Schools, 1960*, by Porter Sargent.

Hospitals

Proprietary hospitals were excluded from the *County Business Patterns* data by using information in the August guide issue of *Hospitals*, the journal of the American Hospital Association.

Other Nonprofit Organizations

All data are from *County Business Patterns:* Nonprofit membership organizations excluding religious organizations.

Annual Payroll

The taxable payroll for the first quarter of the year was multiplied by 4. During the period of study, the first $4,800 of wages was taxable under OASDI. Therefore, the annual payroll figures are too low only for employees with annual wages of over $19,200. The average annual wage for employees of nonprofit organizations in 1964 appears to be less than $4,000. This includes an amount for ministers, priests, and rabbis estimated from the 1964 National Council of Churches survey of ministers' salaries in 15 Protestant denominations. The survey showed a median cash salary of $5,158.[19] This is probably too low for the denominations covered, since it does not include certain fringe benefits

[18] Some help in breaking down nonfaculty employees was obtained from H. Robert Bokelman, *Higher Education: Planning and Management Data, 1957–58*, U.S. Department of Health, Education, and Welfare, Circular No. 517, 1958.

[19] Reported in the 1964 Annual Report of the Annuity Fund for Congregational Ministers, p. 14.

such as rent. Also a mean figure would probably be higher. On the other hand, it is probably too high for certain other denominations, especially those with many part-time ministers. The total annual payroll for all nonprofit organizations is $10.2 billion if the $5,158 figure is used for ministers, priests, and rabbis, or $10.5 billion if $6,500 is substituted.

PENSION COVERAGE INFORMATION

Protestant Ministers

Pension information for Protestant religious bodies was obtained from the statistical reports, minutes, and other materials distributed at the annual meetings of the Church Pensions Conference and from annual reports and other information sent by the member pension boards. Nonmember Protestant denominations were checked against the *Yearbook of American Churches* and questionnaires sent to 18 reporting 1,000 or more pastors. One was returned by the Post Office, five did not answer, and one reported no plan. The remaining 11 sent some information on modest funds. Several small funds have since been discovered for denominations with less than 1,000 ministers. It appears that any undiscovered funds would probably not raise our figures much. The larger funds generally gave information for the years 1957–64. Data back to 1945 were obtained from Church Pensions Conference reports and some earlier data from the *New York* (State) *Insurance Reports.*

Catholic Priests

Father Joseph M. Becker, S.J., professor at St. Louis University, on a visit to the National Bureau advised the author that priests are cared for by their orders even when they are no longer active, but that retirement arrangements for diocesan priests vary among the 112 dioceses and 26 archdioceses. A check of *The Official Catholic Directory*, 1960, showed that 72 jurisdictions with 18,600 diocesan priests listed an organization with a title such as Infirm Priests' Fund or Priests' Mutual Benefit Society. Questionnaires were sent to such organizations in 18 dioceses and archdioceses with 9,400 priests. In reply, five dioceses with 1,435 priests reported pension plans and five others with 4,443 priests reported plans for medical care and hospitalization but not for retirement. In other words, almost a quarter of the priests were in dioceses with plans. On the assumption that a unit with a plan is more likely to report than one without, we estimate pension coverage at about 20 percent in dioceses with clerical funds but at only 10 to 11 percent in the country as a whole. Three of the reporting plans had funds of less than $100,000 each; the other two were unfunded. This suggests that despite the small size of our sample, the total probably is not greatly affected.

Rabbis

Correspondence with five national rabbinical associations brought three replies, each reporting an insured pension plan. One reported coverage of 20 percent, another 80–85 percent, and the third did not answer the question.

Clergy of Other Religious Bodies

The two largest denominations in other religious groups each reported 400 or fewer clergymen to *Yearbook of American Churches* in 1957. Replies to our questionnaire were not received from either of those denominations.

Lay Employees of All Religious Bodies

Lay members of pension funds appear in the statistical reports of the Church Pensions Conference, but there is no breakdown between church secretaries, sextons, organists, and so on, and teachers and other employees in church-affiliated schools, colleges, hospitals, and homes. Some discussion of lay coverage is given in the annual reports of the denominational pension boards.

Correspondence brought information on no diocesewide pension plans for lay employees of the Roman Catholic Church except the one started by the Archdiocese of New York in 1962.

No data were available on pension coverage of Jewish lay employees, but their number is small compared to total lay employees of religious bodies; so the lack of information is probably not serious.

Colleges and Universities

Retirement and Insurance Plans in American Colleges by William C. Greenough and Francis P. King (New York, 1959) lists 4-year colleges and gives detailed information about retirement plans available for their faculty members, administrative officers, and nonacademic employees. The majority of the private nonprofit colleges were listed as having TIAA–CREF plans. Other plans were with agency insurance companies (see agency life insurance data below), included with funds for Protestant ministers and other lay employees, or self-administered plans usually for individual colleges.

Letters were written to all 30 private colleges listed as having self-administered plans, including some for which the noninsured plan was for nonacademic employees only or was an alternative to an insured plan, and also to the four colleges with 200 or more faculty members for which information was not available in Greenough and King. Replies were received from all four of the latter colleges and from 20 of the colleges with 80 percent of the teachers in the noninsured-plan group. Two of the plans for nonacademic employees were insured, two others had been dropped, and another two were unfunded. One unfunded plan was also reported for faculty and administrative officers of a small college. The other respondents sent information on total assets and in some cases on portfolio distributions. Again it would appear that the missing data for funded plans were probably small compared to the given information.

Data for junior colleges come from Francis P. King's article, "Insured Staff Benefit Plans in the Junior Colleges," in the *Junior College Journal*, September 1960. Some junior colleges were also listed in Greenough and King, among church plans, and in the list of participating institutions in the TIAA–CREF annual reports.

Elementary and Secondary Schools

The TIAA–CREF annual reports also list school participants. Other information was obtained from correspondence with Catholic diocesan school boards, religious orders that run private schools in

more than one diocese, the American Association for Jewish Education, the National Union of Christian Schools, the Board of Support and Pensions of the Lutheran Church-Missouri Synod, and the National Council of Independent Schools. Schools and their employees are also included in the agency life insurance data (see below), but no breakdown of educational services is given.

Other Educational Services

Most of the pension information for other educational services comes from the agency insurance company data (see below) and TIAA–CREF reports. We have also had correspondence with the American Association of Museums and the American Association for State and Local History, both of which conducted surveys among their members around 1960–61 on pension and insurance provisions for their employees.

Hospitals

Numerous investigations have been made of hospital pension coverage. The study has profited from data in the American Hospital Association's *Hospital Salary Survey*, 1956, the survey conducted by Louis S. Reed in New York State in November 1958,[20] and the periodic studies carried on by the Bureau of Labor Statistics.[21] Included in the BLS studies in 15 large metropolitan areas (16 in 1956–57) are percentages of workers employed by nongovernment hospitals[22] with pension plans (other than OASDI) for employees of given occupational category. If a pension provision applied to at least half of the workers in the given category in the given hospital, all such workers were included; otherwise, none were included. The 1963 survey also gives percentages for the total of all standard metropolitan statistical areas in the country. On the basis of the number of employees in the given categories in 1963 and the relationship between 1963 coverage rates for total areas and for the 15 studied, an estimated 1960 U.S. coverage rate was computed for each category.

Correspondence with hospital associations in areas with high coverage gave some names of hospitals with noninsured plans and names of agency life companies carrying hospital pension plans. A few teaching hospitals are included in the TIAA–CREF 1960 report.

Other Nonprofit Organizations

Pension data on other nonprofit organizations come from the agency life insurance company data (see below); annual reports of pension funds for certain well-known charitable organizations; correspondence with organizations listing 100 or more employees in Jay Judkins, *National Associations of the United States*, U.S. Department of Commerce, 1949; and also correspondence with Jewish federations and Catholic chanceries. The TIAA–CREF report for 1960 shows about 40 professional, technical, historical, civic, and charitable organizations; but in general, they have few employees.

Agency Life Insurance Data

A list was compiled of agency insurance companies mentioned by Greenough and King and by various nonprofit organizations as in-

[20] See "Where Hospitals Stand on Employee Benefits," *Hospitals*, Sept. 1, 1959.
[21] Bulletins No. 1210 (*Earnings and Supplementary Benefits in Hospitals*, 1956–57), No. 1294 (Mid-1960), and No. 1409 (*Industry Wage Survey—Hospitals*, Mid-1963).
[22] Only hospitals with 100 or more employees were included.

surers of their pension plans. Questionnaries were sent to the 33 companies on the list and to nine companies not reported by any of our respondents, but shown as having substantial group annuity operations or group permanent contracts for funding retirement plans in the April and June 1962 issues of *Employee Benefit Plan Review*. Information was requested as of December 1960 on number of contracts, number of employees covered, and amount of reserves for nonprofit organizations in the SIC two-digit categories: medical and other health services; educational services; museums, art galleries, and so forth; and nonprofit membership organizations. Unfortunately, we did not ask for the three-digit category, nonprofit educational and scientific research agencies, which is included under the two-digit code miscellaneous services. Thirty-five companies (83 percent) replied, but two of them had no plans that fitted the definition, nine said they did not have the data in the form requested, and two were able to send totals but not breakdowns into the four categories. In general, the companies that were mentioned most often reported the largest totals. That fact is encouraging, since some nonprofit organizations reported insured pension plans but did not name the insurer. The questionnaire was also returned by the National Health and Welfare Retirement Association.

Life insurance companies have been obliged to include, in the income tax returns for taxable years beginning after December 31, 1958, the amount of pension plan reserves in four categories at the beginning and end of the taxable year. Category D is for employees of 501(c)(3) organizations. We were unable to get the totals of these reserves from the Internal Revenue Service in 1965. Therefore, the same companies, queried in 1960, were asked to send us data they reported for the years 1958–64. Fourteen companies sent data for 1958 or 1959 to 1964. The figures were raised to include 12 companies with reserve data on only 1 or 2 years in the period and three companies that reported number of employees covered but not size of reserves.

The life insurance companies were most cooperative and their comments were helpful even when they could not send figures. In many cases, insured pension plans for 501(c)(3) organizations had been qualified as trusts described in section 401(a), and it was not possible for them to separate out their reserves. Also, in some cases plans funded by individual policies are excluded. In general the companies that sent data for the end of 1960 made special surveys in order to collect the data. Therefore, the figures for other years have been revised on the basis of the 1960 figures. For the later years of the period, some companies were unable to deduct reserves for public schoolteacher plans qualified under section 403(b).

PENSION FUND ASSETS AND RESERVES

Total pension funds for nonprofit organizations include:

1. Funds insured with TIAA–CREF (from annual reports). This is the sum of (a) TIAA reserves for life annuities and other periodic payment plans (previously shown separately as reserves for annuities and for settlement plans) and (b) CREF cumulations of periodic and single premiums, accumulations transferred from TIAA, and dividends on common stock less operating and investment management

fees, payments to participants, and organizational expense. Increases in market value of common stock holdings are excluded, except when noted that market values are used.

2. Funds insured with agency companies. This is the NBER tabulation of pension reserves for nonprofit organizations on replies to questionnaires. See Agency Life Insurance Data. The questionnaires were sent mainly to insurance companies reported by nonprofit organizations as insurers of their pension plans. In 1964 five of the companies accounted for 80 percent of the total reserves.

3. Noninsured funds. This is the book value (market value when noted) of total assets of all noninsured pension funds for nonprofit organizations that could be obtained.

DATA FOR TABLES

Reference to appendix II in table notes are listed here:

Table II–1. Nonprofit funds, see "Pension Fund Assets and Reserves," above.

Table II–2. See "Pension Fund Assets and Reserves," above. All TIAA–CREF funds were assigned to educational institutions except small amounts estimated for a few teaching hospitals and approximately 40 professional, historical, charitable, etc., organizations most of which had few employees. Agency-insured funds were assigned as reported except that those for nonprofit membership organizations had to be divided between religious bodies and other nonprofit organizations. The former were estimated from letters and reports from such bodies mentioning insured funds and coverage rates.

Table II–3. Ministers, priests, and rabbis, see "Units, Employees and Payroll—Religious Bodies," above. Coverage, see "Pension Coverage Information," above.

Table II–4. Nonprofit organizations, see "Pension Fund Assets and Reserves," section 3.

Table II–5. TIAA–CREF, and agency insured funds for nonprofit organizations, see "Pension Fund Assets and Reserves," sections 1 and 2.

Table II–6. See "Pension Fund Assets and Reserves," section 3. Composite portfolios in terms of book and market value were compiled for each year for the funds for which both sets of data were available. The proportion of market to book was then applied to total book value to get total market value.

Table II–9. Agency life insurance companies, assets of U.S. life insurance companies (from *Life Insurance Fact Books*) less TIAA (from Annual Reports).

TIAA–CREF: Sum of (1) TIAA: proportions of total portfolio applied to reserves for annuities and settlement plans and (2) CREF: portfolios corrected by subtracting (a) "deposits" and "due after yearend for stocks purchased" from cash (if negative, use zero and see (c)); (b) other liabilities from other assets; and (c) cumulated increase in market value and excess of subtrahend over minuend in *a* from common stocks at market value.

Table II–10. See "Pension Fund Assets and Reserves," above, also TIAA–CREF under note to table II–9. Agency-insured funds of nonprofit organizations were distributed according to proportion of total portfolios of United States life insurance companies (from *Life Insurance Fact Books*) less TIAA (from Annual Reports).

Table II–12. Noninsured funds for nonprofit organizations, see "Pension Fund Assets and Reserves," section 3. The proportion of funds in book value for which income data were available in different years ranged from 81 to 90 percent.

COMMENTS OF AMERICAN LIFE CONVENTION, BY Dr. ARTHUR S. FEFFERMAN and LIFE INSURANCE ASSOCIATION OF AMERICA, BY Dr. JAMES J. O'LEARY

The American Life Convention and the Life Insurance Association of America welcome the opportunity to comment on the issues raised by this Print, which was prepared by staff of the Joint Economic Committee. We believe that a subject of such importance to the welfare of the Nation merits the most careful consideration. The objective is to secure the best possible retirement program for our older population, consistent with our economic resources and with our national goals of growth and economic stability. Our two organizations are directly concerned with this objective.

The main thrust of our comments will relate to private pension fund saving and investment and their implications for economic growth and stability (part II of this paper). As an introduction to those comments, we will say a few preliminary words, which are not intended to be exhaustive, about our present retirement system and the achievements of the private pension system (part I of this paper).

I. OUR PRESENT RETIREMENT SYSTEM AND THE ACHIEVEMENTS OF THE PRIVATE PENSION SYSTEM

We believe that any thoughtful examination of the retirement area should give recognition to the great achievements of our present retirement system. Essentially, that system is a mixed one, provided in part by the public sector and in part by the private sector of the economy. The social security system historically has provided a floor of protection; private pension plans and individual savings for retirement supplement this basic floor of protection.

Private pension plans offer unique advantages in this retirement system. Built on top of the floor of protection offered by social security, they possess a flexibility and a capacity for meeting individual retirement needs that cannot be matched by any mass public plan. They provide a means by which private enterprise, working through a voluntary system, can experiment and make adjustments to suit the individual circumstances of particular groups of employees in different firms, industries, and geographical locations. In general, they relate retirement benefits to the particular financial needs of individuals in different circumstances. Pension plans also have the advantage of being financed out of private funds, without the use of public funds derived from taxes. And, as will be developed later, they have the great virtue of helping to supply the savings and capital required for a dynamic growing economy.

Because private pension plans have these advantages, the life insurance business believes that they should play an expanding role in the provision for retirement income in the future. To achieve this, two factors are necessary.

First, the social security system and private pension plans must be kept in proper balance. A social security system which provides a floor of protection is vital for retirement purposes. But inordinate increases in the social security wage base and in social security benefit levels could impair the private pension system by invading areas which can be better serviced by the private sector. We believe that the average earnings of regularly employed male workers represents an appropriate dividing line between the area in which the Government should have primary responsibility to provide basic economic security and the area in which the individual and his employer should have full responsibility to provide security through private media such as pension plans.

Once basic retirement needs are met, it is undesirable to compel individuals to finance additional retirement benefits under the social security system by paying higher taxes. Instead, at this point the individual should retain freedom of choice to determine both the extent to which he wishes to set aside additional funds to provide higher retirement income for himself as well as the particular form that such retirement protection should take. Such supplementary savings for retirement can best be achieved through voluntary means in the private sphere of the economy.

Second, it is important that all interested parties continue to search for ways to accelerate the growth and improvement of private pension plans. In recent years, there has been considerable interest in this area. The hearings on pensions which the Joint Economic Committee held last year, the present document on Old Age Income Assurance prepared by the Committee's staff, and the 1965 Report of the President's Committee on Corporate Pension Funds—all represent part of an examination of pension plans, and a search for ways to improve them. The life insurance business welcomes this examination since, as one of the major funding media for pension plans, we have a direct concern in their improvement. However, we urge that this examination be placed in proper perspective by taking cognizance of the fact that the whole history of pension plans has been one of continued improvement over the years—in coverage, in vesting, in funding, and in the level of benefits. The President's Committee on Corporate Pension Funds, though recommending far-reaching changes in pension plans, explicity recognized the value of these plans by stating ". . . public policy should continue to provide appropriate incentives to private plan growth. . . ."

THE GROWTH OF THE PRIVATE PENSION SYSTEM

The vitality of the private pension system is shown by its rapid growth. By the end of 1965, there were over 150,000 private pension plans qualified under the Internal Revenue Code. These plans covered more than 25 million employees—about one-half the total private nonagricultural work force. Over 66,000 of these plans, covering 6.3 million employees, were insured with life insurance companies.[1]

In 1965, total employee and employer contributions to private pension plans reached $7.8 billion, and 2.7 million beneficiaries received $3 billion in pension payments. At the end of 1966, the assets of pri-

[1] Institute of Life Insurance, *Private and Public Pension Plans in the United States*, March 1967.

vate pension plans totaled $93.4 billion—more than four times the reserves of the social security system. The reserves of insured pension plans alone amounted to $29.4 billion.

By 1965 the number of employees covered by pension plans was 2½ times as large as in 1950, the number of beneficiaries six times the 1950 total, payments to beneficiaries eight times the 1950 total, and reserves seven times the 1950 total.

According to the President's Committee on Corporate Pension Funds, by 1980 an estimated 43 million employees will be covered by private pension plans, the number of beneficiaries of such plans will increase to 6.6 million, and annual benefit payments to about $9 billion. By 1980 total contributions to private pension plans are expected to rise to $10.9 billion a year, and total reserves to $225 billion.[2]

THE PRIVATE PENSION SYSTEM BENEFITS THE RANK AND FILE OF EMPLOYEES

It is worthy of note that the rapid increase in private pension plans over the past few decades has consisted overwhelmingly of plans which meet Internal Revenue requirements designed to insure that the plans will benefit the rank and file employees and not merely a few highly paid employees. Since 1942, the Internal Revenue Code has contained provisions which prohibit qualified pension plans from discriminating as to coverage or benefits in favor of highly paid employees. The Internal Revenue Code seeks to induce compliance with these nondiscriminatory requirements by a carrot-and-stick approach—by giving better tax treatment where plans comply with these provisions and by withdrawing this treatment where plans do not comply.

More specifically, in order to qualify under the Internal Revenue Code, a pension plan must cover a specified percentage of employees [3] or, as an alternative, cover employees under a classification found by the Commissioner of Internal Revenue not to discriminate in favor of employees who are officers, shareholders, supervisory employees, or highly compensated employees. Similarly, the contributions to the plan or benefits paid out by the plan cannot constitute a larger percentage of pay for upper income employees than for lower income employees.

THE BULK OF PENSION PLANS ARE FUNDED

It is also noteworthy that the bulk of the present pension plans are in varying degrees funded; that is, contributions made by the employer and the employees are set aside either in a trust or with an insurance company to pay benefits at a later date. The Internal Revenue Code recognizes the desirability of funding in its provisions dealing with qualification. The Code does not specify minimum funding standards. However, as a matter of administrative practice, the Internal Revenue

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[2] *Public Policy and Private Pension Programs, A Report to the President on Private Employee Retirement Plans by President's Committee on Corporate Pension Funds and other Private Retirement and Welfare Programs*, app. A, table 1.

[3] To qualify on this basis, the plan must cover 70 percent or more of all the employees, or 80 percent or more of all the employees who are eligible to benefit under the plan if 70 percent or more of all the employees are so eligible, excluding in each case employees who have been employed not more than a minimum period prescribed by the plan, not exceeding 5 years, employees whose customary employment is for not more than 20 hours in any 1 week, and employees whose customary employment is for not more than 5 months in any calendar year (sec. 401(a)(3)(A) of the Internal Revenue Code).

Service has approved plans under which the employer's total pension contributions over the years, on the basis of assumptions adopted by him, cover the current costs of the plan plus the interest on unfunded accrued liabilities.

The life insurance business favors adequate funding of private pension plans. Funding provides the employer with an orderly method of making provision for his pension costs. It enables him to plan ahead to meet these costs, and, by spreading out the contributions, to avoid the severe financial burden of paying the bulk of the costs within a relatively short period of time to a maturing labor force. Further, and very important, a funded plan provides greater assurance to a covered employee that the money will be available to pay him a pension when he retires.

The fact that private pension plans are funded makes it possible for them to pay substantially larger pensions than would otherwise be possible. This is so because the investment income accruing on the funds is devoted to the payment of benefits. The increased benefits resulting from such investment income represents the counterpart of the increase in the productivity of the economy, which pension plans make possible by enlarging the supply of savings and capital.

Moreover, although the funds in pension plans represent savings set aside for the retirement of covered employees, they do not inhibit individual savings for retirement and other purposes. On the contrary, there is strong evidence that coverage under pension plans encourages individuals to increase their personal savings.[4]

In the past few years, proposals have been made by a number of groups, including the President's Committee on Corporate Pension Funds, to require qualified plans to fund current and past service costs over a specified period of years. Proposals of this type warrant study and discussion by interested parties. It must be kept in mind, however, that accelerated funding increases costs, and a program should not be adopted which would discourage the growth and development of private pension plans.

Proposals to guarantee the pension rights of employees have also been suggested. Adequate funding would be a necessary concomitant to any such program, however, and to the extent that funding is improved the need for a guarantee program tends to disappear. Moreover, it does not seem to us feasible to provide an equitable method of guaranteeing the widely varying risks characteristic of different kinds of pension plans—including the contingency that the employer may go out of business and terminate the plan before the funding is completed, or that the administrator might make unwise investments with a resulting loss of pension funds.

VESTING

The history of vesting provisions in pension plans has been one of continuing improvement. Many plans grant liberal vesting rights at the time they are adopted. Others provide only moderate or no vesting

[4] See *Private Pensions and Individual Saving* by George Katona, Survey Research Center, Institute for Social Research, the University of Michigan, 1965, and *The Effect of Pension Plans on Aggregate Savings* by Phillip Cagan, National Bureau of Economic Research, 1965.

at the time they start but then continually improve the vesting provisions as they go along. By the winter of 1962–63, according to a Bureau of Labor Statistics study of 16,000 pension plans covering over 15.6 million employees, two out of three private pension plans covering three out of five workers provided vesting.[5] Present vesting is undoubtedly even more widespread in view of the marked trend toward more liberal vesting.

The life insurance business is in favor of vesting. Vesting helps to assure that covered employees will actually receive pensions and will not lose their benefits through termination of employment. Moreover, although the impact of vesting on the mobility of labor requires further study, there appears to be a presumptive relationship between vesting and labor mobility.

Recently, there have been suggestions that some degree of vesting should be required as a condition to qualification of plans under the Internal Revenue Code. Again, we believe that such suggestions should be studied and discussed. It must be recognized, however, that vesting affects costs and, hence, must be considered in relation to other possible improvements in pension plans, and to the ability of new or small employers to initiate such plans.

PENSION PLANS ARE FINANCED OUT OF PRIVATE FUNDS

An important advantage of private pension plans is that they are financed out of private funds, not public funds. Since they are paid for by voluntary contributions made by employers and employees, they do not involve compulsory tax payments or the direct expenditure of public funds.

It is sometimes alleged that, although private pension plans are financed by private funds, they are "subsidized" by the Government in that present law grants them favored tax treatment. This view is based on three points: (1) The employer gets a tax deduction within certain limits for contributions to a qualified plan at the time the contribution is made; (2) covered employees are not taxed on employer contributions made on their behalf until they actually receive pension benefits; and (3) investment earnings on funds set aside in qualified trusteed and insured plans are free of tax until received by the employees.

It is questionable, however, whether the three items just cited can be said to amount to a "subsidy."

Allowing an employer to take a tax deduction for his contribution to a qualified pension plan does not constitute special tax treatment. In order to secure the deduction under present law, the employer must irrevocably part with the contributed funds when he hands them over to the pension trust or the life insurance company for pension purposes. The deduction received for such contributions, therefore, merely recognizes that the employer has incurred a business expense similar to compensation paid to employees in other forms—for example, cash wages.

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[5] *Labor Mobility and Private Pension Plans—A Study of Vesting, Early Retirement and Portability Provisions*, U.S. Department of Labor, Bureau of Labor Statistics, B.L.S. Bulletin, No. 1407, p. 11.

Moreover, it is questionable that an employee covered by a pension plan actually receives special tax treatment because he is not taxed when his employer makes the contributions, but instead pays tax when he receives the benefits. A good case can be made in equity for imposing the tax at the later date. This is the time when the employee actually enjoys the use of the pension income. It would be unfair to tax the employee at the time his employer makes the pension contributions, since even an employee who has vested rights generally cannot receive any benefits prior to retirement. Furthermore, he might die prematurely and never receive any benefits.

For the same reasons, it is equitable that tax on the investment earnings on pension funds be paid only when they are received by the employee as pension benefits.

Finally, there would appear to be considerable justification for encouraging the private pension system even at the cost of some tax revenue. The social objective to be gained—the encouragement of private provision for retirement needs without the direct expenditure of public funds—would be well worth the cost.

II. Private Pension Fund Saving and Investment and Their Implications for Economic Growth and Stability

Probably the most provocative idea advanced in the Joint Committee Print is the suggestion that the flow of saving into investment through private pension funds may be contrary to the public interest in that it may inhibit full employment and economic growth and contribute to economic instability. This suggestion conflicts with the views of the vast majority of economists, who are convinced that the healthy expansion of saving through private pension funds is vital to the sound growth of the American economy in the years ahead.

This section of our statement will discuss: (1) Some of the specific issues raised by the print in this regard; (2) the theory of saving, investment, and economic growth; (3) the facts about private pension fund saving and investment; (4) the urgent need for a high rate of saving and investment in the years ahead; (5) pension savings and longrun investment planning; (6) pension savings, investment, and risk capital; and (7) recommendations in other countries for the encouragement of pension savings.

THE ISSUES RAISED BY THE JOINT COMMITTEE PRINT

An introductory paragraph of the print asks: "May not pension plans . . . interfere unnecessarily with the exercise of free choice in employment and in saving, induce an excessive rate of saving * * * and hinder the productive deployment of wealth." [6] Later, in discussing the "economics of pension saving," the print states:

> The large volume of pension plan saving is to some no source of great concern. it being argued that since saving increases the capital stock we are all better off therefore. The difficulty with this argument is that the premise is false. Saving does not increase the capital stock. Investment increases the capital stock. Given the demand for capital goods, increased saving reduces the rate of interest. A fall in the rate of interest may induce additional investment;

[6] Joint Committee Print, p. 1.

again it may not. The factors which prompt businessmen to invest are diverse or at any rate poorly understood, but there is little evidence that the availability of funds or the rate of interest are of much significance except on occasion in exerting restraint. Were the economy operating at rates of growth which tended chronically to be excessive, there would be a case for devising ways to induce additional saving and a highly fragmented pension system might be as good a way as any. However, the economy is not subject to chronic excess demand; rather, there is a more or less continuing problem of keeping demand adequate. In such circumstances, a high rate of saving does not add to but subtracts from the capital stock by depressing demand for output and the motive to invest.[7]

The ideas thus expressed resurrect the "stagnation thesis," which enjoyed popularity in the depressed 1930's. The assumptions of this thesis are wholly irrelevant to the economic conditions of the past two decades in which: (1) The U.S. economy has generally operated at high levels of employment; (2) the general price level has displayed a persistent tendency to move upward; (3) cyclical downturns have been moderate; and (4) the level of long-term interest rates has trended upward (despite cyclical fluctuations) carrying the average yield on long-term Government bonds, for example, from 2.19 percent in 1946 to 4.65 percent in 1966.

The Print's assertion that "there is little evidence that the availability of funds or the rate of interest are of much significance (in influencing investment spending) except on occasion in exerting restraint" is highly questionable. There is clear-cut evidence that in the period 1961–65 the ready availability of financing by institutions aggressively seeking to increase their loans and investments at declining interest rates was a highly important contributor to economic expansion. In fact, the Print's statement is contrary to all of the assumptions in the January, 1967, Economic Report of the President which counts heavily upon increased availability of funds and lower interest rates to stimulate a rising rate of residential construction.

In a discussion of the economics of pension fund saving, the Print goes on to state:

Now pension saving, in contrast to personal and corporate saving, is relatively unresponsive to changes in economic fortune. Pension saving, governed by rules for funding plans, increases rather steadily in good times and bad. It is, therefore, a good thing in good times and a bad thing in bad times. Corporate saving, especially, but also personal saving to a lesser degree are automatically stabilizing. To whatever extent corporate and personal saving are smaller because pension saving is greater, something in the tendency of the economy to stabilize itself through compensating changes in savings rates is lost.[8]

This again reflects the stagnation thesis. Economists who are seeking today to project the longer run future of the American economy are assuming that appropriate fiscal and monetary policies by Government will be combined with dynamic factors in the private economy—such as rapid technological change and a pronounced rise in the rate of family formations—to assure a strong rate of economic growth.[9] Built into their models is a high rate of capital formation and a high rate of saving. If this is, indeed, the realistic prospect, the contractual nature of private pension saving has great advantages. Because of its contractual nature, pension saving is better able to resist

[7] *Ibid.*, p. 18.
[8] *Ibid.*, p. 18.
[9] See, for example, the studies cited and discussed at length, beginning on p. 179, *infra*.

the great competitive pressures for the consumer dollar which are tending to whittle down the rate of personal saving. Because of the steady flow of pension savings, longer run planning of capital spending by business and industry becomes more feasible.

Unless private savings are available for investment, the only possible alternatives are monetary expansion and Government savings. The Joint Committee Print comes close to saying that the Government should provide funds for investment, thus dispensing with much of the need for private savings. This would seem to call for an unnecessary encroachment of Government, to the detriment of the free enterprise system.

Another issue raised by the Joint Committee Print is whether an alleged failure of private pension funds to assume investment risks has curbed the economic growth of the country. The issue is stated as follows:

> Very generally speaking, reductions in pension plan funding requirements probably confer upon society a boon in productive efficiency. Transferring these funds to business in general through the intermediation of pension funds means that they will be invested on the average more cautiously than if the transfer had not taken place. What good does it do, we may ask, to consider all the alternatives if one consistently chooses safe, low-yield investments? The reduction over several years in the rate of economic growth from this diversion of funds at risk could easily exceed the cost of all pension benefits paid.[10]

Again, this is an erroneous concept. Safety of principal must, of course, always be an important consideration in the bond and mortgage investments of pension funds. During the past 20 years, however, through direct placement of corporate bonds and mortgages, the institutions administering pension funds have taken reasonable and measured risks, and have been compensated for such risks by a better rate of investment return. Also, noninsured pension funds have for many years been invested to a substantial degree in common stocks, and the proportion of insured pension savings invested in common stocks is rising markedly. It is not surprising, therefore, that pension fund investments have contributed strongly to increased productivity and growth.

After having argued that pension fund investments are too conservative, the Print then immediately proceeds to argue just the reverse, as follows:

> We have stressed the likelihood that pension funds will be managed with an excess of caution. The rate at which pension funds have acquired corporate shares during recent years does not suggest caution. Rather it suggests that pension trustees from an interest in reduced contributions and perhaps from lack of experience in financial management may be putting their plans in a position to suffer a disaster such as that which overtook mutual funds in the early 1930's for much the same reason. Pension plan purchases of corporate shares now, just as mutual fund purchases then, are a primary factor accounting for a chronic excess demand for shares which explains a long, rapid rise in share prices * * * It is a misfortune that banks and insurance companies, competing for pension funds, have got caught up in this process. Through the exercise of monetary and fiscal policy the economy can be protected from widespread unemployment but not against stock market debacles. There is, therefore, some prospect that much of the value of pension funds may sometime disappear. What will the plans do then—asks the Federal Government—to make good their pension promises?[11]

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[10] Joint Committee Print, pp. 19–20.
[11] *Ibid.*, p. 20.

As we have already noted, a high proportion of noninsured pension savings has for some time been invested in common stocks, with a limited but growing share of the insured funds going into corporate shares. There are, of course, some risks in this policy. But, as the American economy has expanded strongly during the past two decades, with the general price level moving upward, and with the cyclical downturns moderate and of brief duration, the policy has proved successful. Looking to the future, stock investment by pension funds has a role to play, particularly if fiscal and monetary policies are to be directed toward maintaining full employment and stimulating faster economic growth.

The comments above highlight some of the basic defects in the economic thinking reflected by the Print. We turn now to a fuller development of our views with respect to the great importance in the years ahead of a vigorous growth in private pension savings.

THE THEORY OF SAVING, INVESTMENT AND ECONOMIC GROWTH

The objectives of U.S. economic policy, as set forth in the Employment Act of 1946, and in subsequent annual economic reports of Presidents of both parties, are: (1) The maintenance of full employment of our labor force and other resources; (2) a stronger rate of economic growth (currently the target seems to be 4–5 percent compared with an historical trend figure of about 3 percent); (3) the avoidance of serious fluctuations in the economy; (4) reasonable stability of the general price level; and (5) restoration and maintenance of reasonable balance in the international payments position of the United States. All of these objectives are to be sought by means designed to preserve, at a maximum degree, a free market-oriented economy.

At the present time, the U.S. economy is operating at very close to its full employment potential. The only way to grow faster than the present attainable growth rate is to increase the potential for growth. Walter Heller recognizes this in the following statement:

> So future fiscal dividends must be declared with an eye not just to the uses but to the *sources* of growth. In the past few years part of our rise to the top of the growth ladder has been accomplished by closing the GNP, or production gap. With the economy operating at or near its potential, our realized growth in the future will depend chiefly on the rate of increase in that potential. We can no longer pad the figure, so to speak, by taking up economic slack.
>
> Rising productivity will be the key. In part this will require continued measures to maintain high levels of private investment in plant and equipment. In part, also, it calls for measures to improve efficiency and hence productivity by adjustments—many of them politically painful—in our policies for transportation, manpower allocation, agriculture, and the like.[12]

Charles L. Schultze, Director of the Bureau of the Budget, in his book *National Income Analysis*, cites two main sources of economic growth—labor input and the growth of productivity.[13] The labor input of any economy depends upon (1) the number of people of working age, (2) the "participation rate"—the percentage of people of working age who choose to enlist in the work force, and (3) the num-

[12] Walter W. Heller, *New Dimensions of Political Economy*, Harvard University Press, Cambridge, Mass., 1966, p. 108.
[13] Charles L. Schultze, *National Income Analysis*, Prentice-Hall, Inc., 1964, pp. 113 ff.

ber of hours worked per year. As Dr. Schultze points out, "in the long run, rising living standards flow from an increase in output per worker." Since World War II output per man-hour has increased at an annual rate of about 3.2 percent. The ways to increase output per man-hour, as set forth by Dr. Schultze, are: (1) Increases in the stock of physical capital; (2) improvement in technology—advances in scientific and technical knowledge; (3) the spread of education; and (4) an expansion of markets which foster productive specialization.

What is the role of saving and investment in rising productivity and economic growth? Dr. Schultze answers as follows:

> Rising productivity involves an increase in our ability to harness the forces of nature, for supplying power, transporting goods, and manipulating materials. This, in turn, requires not merely scientific and technical knowledge, but the provision of expensive plant and equipment. It requires, in other words, capital. And capital goods are not "free". They must be produced using labor, materials, and machines that might otherwise have been utilized to turn out consumer goods. Providing the labor force with an increasing supply of machinery and equipment involves *saving*—the Nation must refrain from consuming part of its output so that resources may be free to produce capital goods.[14]

Dr. Schultze then goes on to point out that growth in productivity depends not only upon workers having more capital goods at their disposal but better capital goods. The latter depends upon technological progress. He notes:

> Thus, although the accumulation of capital and technological progress can be thought of as two distinct sources of economic growth, they are intimately related. Without the other, each could make only a limited contribution to growth. Much of technological progress is embodied in new capital. Much of the contribution of new investment to economic growth is due not to the additional capital per se, but to the new technology that it carries with it and that could not be introduced without it.[15]

The above quotations are in the classical tradition in stressing the great importance of saving and investment in economic growth. Under conditions of full employment such as exist today, and as will continue if our national economic objectives are to be achieved, increasing the money supply, beyond the monetary expansion needed simply to carry out transactions on a rising national income basis, would go largely to produce an increase of the general price level. In a slack economy, such as in 1961–64 when the country had idle labor and plant capacity, capital formation could be financed out of an increase in the money supply without precipitating an increase in the general price level. But, under conditions of full employment, the only sound way to finance capital formation is by means of saving. An even more rapid rate of real economic growth than we have hitherto enjoyed, which would permit the country to raise its objectives, would require an increase in the "full employment savings" which the economy generates.

THE FACTS ABOUT PRIVATE PENSION FUND SAVING AND INVESTMENT

What are the facts about private pension fund saving and investment? Using the national income accounts prepared by the U.S. Department of Commerce, the following picture of the importance of pension fund saving emerges:

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[14] Schultze, p. 118.
[15] *Ibid.*, p. 122.

[Dollars in billions]

	Average per annum			
	1946–50	1951–55	1956–60	1961–65
Personal income [1]	$203.0	$283.4	$366.0	$471.2
Personal saving [1]	$11.7	$17.2	$20.0	$22.6
Pension saving [2]	$2.7	$4.6	$7.2	$9.9
Personal saving as percent of personal income	5.8	6.1	5.5	4.8
Pension saving as percent of personal income	1.3	1.6	2.0	2.1

Note: If personal saving is expressed as a percentage of disposable personal income (after Federal income tax payments), the savings ratios for the four 5-year periods are 6.4, 6.9, 6.2, and 5.5 percent, respectively. The use of the ratio of saving to personal income is considered more relevant here since most of the pension saving is, in effect, from pretax income; i.e., employer contributions to private and public pension plans are not treated as taxable income to the employee.

[1] National income accounts of the U.S. Department of Commerce, Survey of Current Business.
[2] Flow of funds accounts of the Board of Governors of the Federal Reserve System. This figure measures the increase in assets held by private pension plans, pension programs administered by State and local government units, and the Federal employee and railroad retirement benefit programs. It includes both insured and noninsured plans. It excludes OASDI.

As shown in the table, the annual amount of saving through private pension funds and those administered by State and local government units has increased markedly since 1946, both in absolute dollar amount and as a percentage of total personal income. It is significant that total personal saving as a percent of personal income has declined during the past 15 years from an average of 6.1 percent in 1951–55 to an average of 4.8 percent in 1961–65. Thus the increase in the rate of pension saving has been an important factor in holding up the aggregate rate of saving.

The savings accumulated through private pension funds and through pension funds administered by State and local government units have been invested in corporate securities, mortgages, State and municipal bonds, and U.S. Government obligations. They have thus provided financing for the construction of industrial plant and equipment, single-family homes, apartment buildings, commercial properties of all kinds, public utilities, transportation and communication facilities, roads and other public facilities, and many other kinds of capital projects. The capital expenditures made possible by pension savings have provided increasing job opportunities in our economy and have contributed heavily to improved productivity and thus higher living standards.

Studies conducted by the National Bureau of Economic Research indicate that in coming years the rate of increase of private pension saving is likely to slacken because, with a rising percentage of our people moving into the retirement age group, benefit payments are likely to be increasing at a more rapid rate than the sum of contributions and investment earnings.[16] This is a disturbing prospect in view of the need to finance the heavy demands for capital formation which the country faces in the years ahead. This is an additional reason to encourage expansion of the private pension plan system.

THE URGENT NEED FOR A HIGH RATE OF SAVING IN THE YEARS AHEAD

In looking to the future, the majority of economists are projecting a stronger rate of economic growth—say 4 to 5 percent—than we have

[16] Daniel M. Holland, *Private Pension Funds: Projected Growth*, Occasional Paper 97, National Bureau of Economic Research, New York, N.Y., 1966.

experienced in the past. This expectation is based on the following reasoning:

1. There are a number of factors in our economy which will provide a favorable climate for strong growth such as (*a*) a sharp increase in the labor force; (*b*) a marked increase in the rate of family formations; (*c*) a very rapid rate of technological innovation abetted by a large increase in research and development expenditures; (*d*) the need for heavy and rising public and private expenditures to meet the problems of our cities—urban renewal and rehabilitation, air and water pollution, transportation, and the like; and (*e*) the drive for stronger economic growth in other countries and the leverage which this will exert upon our own desire and capacity to grow.

2. Both political parties and the public at large agree that fiscal, monetary, and other Government policies must be directed toward encouraging full employment and faster economic growth.

To achieve a stronger rate of economic growth there will have to be a very high rate of investment spending, and, of course, a very high rate of saving.

To illustrate the above points, it will be helpful to review three recent projections of the growth of the U.S. economy in the next decade: (1) *U.S. Economic Growth to 1975: Potentials and Problems;* a study prepared for the Subcommittee on Economic Progress of the Joint Economic Committee of the Congress; (2) Albert T. Sommers, "The Economy in the Next Decade," *The Conference Board Record,* December 1965; and (3) Leonard A. Lecht, *Goals, Priorities, and Dollars—The Next Decade;* a study prepared under the auspices of the National Planning Association. These studies are typical of the thinking of most economists about the prospects for growth of the American economy in the years ahead.

Tables 1 and 2 present the projections of GNP and national income developed in the study made by the staff of the Joint Economic Committee. These projections have built into them a number of assumptions about Federal fiscal policy aimed at maintaining full employment.[17] "Projection A" in the tables is based on the assumption that during the next decade the real GNP will grow at a 4.5-percent annual rate, and also assumes an average unemployment rate of 3 percent. "Projection B" is based on the assumption that during the next decade the real GNP will grow at a 4-percent annual rate, and assumes an average unemployment rate of 4 percent.

It is significant to note, in table 1, that projection A (in current dollars) calls for a rise in gross private domestic investment from $106.6 billion in 1965 to $142.9 billion in 1970 and to $201.4 billion in 1975, an increase of nearly 90 percent by 1975. Excluding the change in business inventories, the increase in fixed investment would be from $97.5 billion in 1965 to $185.7 billion in 1975, or an increase of just about 90 percent. These figures certainly do not suggest that there will be any lack of demand for capital funds generated by savings during the next decade. The figures in projection B, although somewhat lower, also suggest an enormous rise in captial demands.

[17] For a discussion of these assumptions, see *U.S. Economic Growth to 1975: Potentials and Problems,* pp. 29–47.

TABLE 1.—PROJECTIONS OF GROSS NATIONAL PRODUCT, WITH MAJOR COMPONENTS, ADJUSTED TO ILLUSTRATE AN EQUILIBRIUM FULL-EMPLOYMENT POSITION [1]

	Actual, 1965	Projection A		Projection B	
		1970	1975	1970	1975
	Billions of current dollars				
Gross national product	681.2	950.0	1,310.0	920.0	1,205.0
Personal consumption expenditures	431.5	601.7	815.8	583.4	753.9
Durable goods	66.1	92.7	125.6	87.5	113.5
Nondurable goods	190.6	247.9	315.7	241.5	292.9
Services	174.8	261.1	374.5	254.4	347.5
Gross private domestic investment	106.6	142.9	201.4	137.5	183.5
Nonresidential fixed investment	69.7	87.4	113.0	85.0	105.5
Residential structures	27.8	46.0	72.7	44.3	66.0
Change in business inventories	9.1	9.5	15.7	8.2	12.0
Net exports of goods and services	7.0	9.2	10.8	9.3	12.1
Exports	39.0	52.1	69.2	51.0	66.2
Imports	32.0	42.9	58.4	41.7	54.1
Government purchases of goods and services	136.2	197.8	282.0	189.8	255.5
Federal	66.8	80.9	99.3	78.5	93.1
State and local	69.4	116.9	182.7	111.3	162.4
	Billions of 1958 dollars				
Gross national product	614.4	770.0	960.0	760.0	925.0
Personal consumption exependitures	396.2	505.0	631.1	498.3	606.0
Durable goods	66.4	92.5	124.6	88.0	114.5
Nondurable goods	178.2	213.5	253.0	211.5	243.0
Services	151.6	199.0	253.5	198.8	248.5
Gross private domestic investment	97.8	117.7	150.7	115.5	143.6
Nonresidential fixed investment	64.9	75.5	91.2	74.5	87.9
Residential structures	24.1	34.5	48.0	34.2	46.5
Change in business inventories	8.8	7.7	11.5	6.8	9.2
Net exports of goods and services	6.3	7.9	8.5	8.0	9.9
Exports	37.3	49.6	64.7	48.5	61.9
Imports	31.0	41.7	56.2	40.5	52.0
Government purchases of goods and services	114.1	139.5	169.7	138.2	165.5
Federal	57.8	60.0	64.3	60.0	64.5
State and local	56.3	79.5	105.4	78.2	101.0
Ratio of nonresidential fixed investment to real GNP in 1958 dollars (percent)	10.6	9.8	9.5	9.8	9.5

Source: Department of Commerce, Office of Business Economics, and staff, Joint Economic Committee.

[1] Projections in tables 19–28 are illustrative only and portray 1 possible method of achieving equilibrium at full employment by the use of Federal fiscal policy.

Shifting to table 2, it is significant to note that both projections call for a marked increase in the aggregate of personal saving.[18] Recogni-

[18] The authors of the Joint Economic Committee study explained the personal savings rates in table 2 as follows. The average personal saving rate for the years 1961–65 was 5.5 percent, the rate used for the B projections. This seemed reasonable in view of the fact that the B set assumes a 4 percent unemployment rate. The lower savings rate used for the A set of projections was chosen because more of the employed labor force would be in the low-income group at a 3 percent rate of unemployment than would be the case were the unemployment rate to average 4 percent. It is a characteristic of low-income families to save less as a proportion of their income than those in higher income classes (see p. 9 of *U.S. Economic Growth to 1975: Potentials and Problems*).

tion by the Joint Economic Committee staff of the importance of personal saving to the growth projections can be found in the following quotation:

Expansions in social security, private pensions, disability and unemployment insurance, hospital insurance, and medicare may all act to maintain, if not reduce, the consumer's propensity to save on his own account.

It should be recognized that there will likely be strong forces in the remainder of the 1960's which could tend to shift the saving rate to a lower level. The high birth rates of World War II and early postwar years will be reflected in higher rates of new family formation. These individuals will be in a stage of life when automobiles, household furnishings, and other durable goods typically are acquired for the first time.

Hence, public attention may at some point in the decade need to be focused on the desirability of encouraging private saving to promote private-oriented investment, risk bearing, and entrepreneurship.[19]

TABLE 2.—GROSS NATIONAL PRODUCT AND NATIONAL INCOME, WITH MAJOR COMPONENTS ADJUSTED TO ILLUSTRATE AN EQUILIBRIUM FULL EMPLOYMENT POSITION

[In billions of dollars]

	Actual, 1965	Projection A		Projection B	
		1970	1975	1970	1975
Gross national product	681.2	950.0	1,310.0	920.0	1,205.0
Less—					
Capital consumption allowances	59.6	78.2	101.6	76.6	96.2
Indirect business tax and nontax liability	62.7	83.7	115.8	81.4	103.2
Business transfer payments	2.6	3.3	4.1	3.3	4.1
Statistical discrepancy	−1.6	.....	.....	.....	.....
Plus subsidies less current surplus of Government enterprises	1.0	.8	.4	.8	.4
Equals national income	559.0	785.6	1,088.9	759.5	996.9
Less—					
Corporate profits and IVA	74.2	102.7	139.4	97.0	118.2
Contributions for social insurance	29.2	49.5	69.3	48.4	66.0
Plus—					
Government transfer payments to persons	37.1	62.1	89.3	60.9	83.3
Interest paid by Government (net) and consumers	20.6	29.0	38.5	28.5	36.5
Dividends	19.2	24.5	30.7	24.1	29.8
Business transfer payments	2.6	3.3	4.1	3.3	4.1
Equals personal income	535.1	752.3	1,042.8	730.9	966.4
Less—					
Personal tax and nontax payments	66.0	105.6	171.8	100.9	152.8
Tax reductions	.....	4.3	13.7	3.6	10.6
Adjusted personal tax and nontax payments	.....	101.3	158.1	97.3	142.2
Equals disposable personal income	469.1	651.0	884.7	633.6	824.2
Less—					
Personal outlays	443.4	619.6	841.8	600.8	777.9
Personal consumption expenditures	431.5	601.7	815.8	583.4	753.9
Other personal outlays	11.9	17.9	26.0	17.4	24.0
Equals personal saving	25.7	31.4	42.9	32.8	46.3
Personal saving rate (percent)	5.5	4.8	4.8	5.2	5.6
National income	559.0	785.6	1,088.9	759.5	996.9
Compensation of employees	392.9	559.0	792.0	546.3	734.4
Wages and salaries	358.4	504.5	712.7	492.9	661.9
Private	289.1	399.2	560.1	392.2	520.4
General government	62.3	95.8	139.5	91.5	129.1
Government enterprises	6.9	9.5	13.1	9.2	12.4
Supplements to wages and salaries	34.5	54.5	79.3	53.4	72.5
Private	28.5	45.8	66.7	44.9	60.8
General government	5.5	8.8	11.7	7.8	10.8
Government enterprises	.6	.7	.9	.7	.9

[19] *U.S. Economic Growth to 1975: Potentials and Problems*, p. 46.

TABLE 2.—GROSS NATIONAL PRODUCT AND NATIONAL INCOME, WITH MAJOR COMPONENTS ADJUSTED TO ILLUSTRATE AN EQUILIBRIUM FULL EMPLOYMENT POSITION—Continued

[In billions of dollars]

	Actual, 1965	Projection A		Projection B	
		1970	1975	1970	1975
Proprietors' income	55.7	71.0	84.0	65.0	75.0
Business and professional	40.7	55.0	68.0	50.0	60.0
Farm	15.1	16.0	16.0	15.0	15.0
Rental income of persons	18.3	20.9	23.5	20.2	22.3
Corporate profits and IVA	74.2	102.7	139.4	97.0	118.2
Profits before tax	75.7	105.7	142.4	99.5	120.7
Profits tax liability	31.2	44.1	59.9	41.5	50.8
Profits after tax	44.5	61.6	82.5	58.0	69.9
Dividends	19.2	24.5	30.7	24.1	29.8
Undistributed profits	25.3	37.1	51.8	33.9	40.1
Inventory valuation adjustment	−1.5	−3.0	−3.0	−2.5	−2.5
Net interest	17.8	32.0	50.0	31.0	47.0

Source: Department of Commerce, Office of Business Economics, and staff, Joint Economic Committee.

The projection of GNP in 1975 prepared by Albert T. Sommers of the National Industrial Conference Board is shown in tables 3 and 4. The Sommers model assumes an average unemployment rate of 4.5 and a 4.35 percent increase per annum in real output. Again, it is interesting to observe in table 3 that gross private domestic investment in current dollars would rise sharply from $92.9 billion in 1964 to $171.9 billion in 1975, an increase of about 85 percent. Table 4 likewise shows the marked increase in personal saving projected by Sommers, from $26.3 billion in 1964 to $48.5 billion in 1975, with the rate rising from 6 to 6.2 percent of disposable personal income.

Commenting upon his projection, Sommers stated:

> Up ahead, nevertheless, appears to lie a further vigorous expansion in the rate of investment. Indeed, vigorous growth in investment is an essential requirement if the substantially faster rate of growth of employment envisioned here is to be accompanied by an appropriate increase in the total stock of capital.
>
> The annual rate of new fixed investment in 1975 may approach $118 billion, in prices then prevailing; this is almost double the gross investment rate of 1964.[20]

In his concluding remarks about his projection of the growth of the American economy in the next decade, Sommers states:

> In the first instance, the challenge posed by the trillion-dollar potential of the U.S. economy is job creation. The bumper dimensions of the 1975 potential arise largely because the American economy of 1965 is on the threshold of a great wave of growth in its human resources, unequalled since the days of heavy immigration to America many decades ago. The great challenge in the next decade is to create the jobs to fully engage this surging tide of manpower.
>
> The creation of jobs means, of course, investment; and investment, of course, depends upon saving. Given the increments to the labor force that seem to lie ahead, it would be hard to envision any 10-year projection of the American economy that would not focus on a compelling need to achieve and sustain a high rate of capital formation, to equip the increments to the labor force, and to improve the efficiency of the labor force as a whole.[21]

[20] Albert T. Sommers, "The Economy in the Next Decade," *The Conference Board Record*, December 1965, p. 8.
[21] *Ibid.*, p. 23.

TABLE 3.—GROSS NATIONAL PRODUCT, 1964 ACTUAL AND PROJECTIONS TO 1975[1]

Item	GNP (billions of dollars)			Annual growth rate (in percent)		Annual price increase, 1964–75	Percent distribution		
	1964	1975					1964	1975	
	In 1964 dollars	In 1964 dollars	In 1975 dollars	Based on constant dollars	Based on current dollars		In 1964 dollars	In 1964 dollars	In 1975 dollars
Total GNP	628.7	1,001.6	1,138.9	4.35	5.55	1.2	100.00	100.00	100.00
Personal consumption expenditures	398.9	644.3	713.9	4.5	5.5	1.0	63.45	64.33	62.68
Durable goods	58.7	112.8	117.0	6.2	6.5	.3	9.34	11.26	10.27
Nondurable goods	177.5	253.3	274.7	3.4	4.1	.7	28.23	25.29	24.12
Services	162.6	278.1	322.0	5.1	6.4	1.3	25.86	27.77	28.27
Gross private domestic investment	92.9	151.1	171.9	4.6	5.8	1.2	14.78	15.09	15.09
New construction	48.7	79.2	90.1	4.6	5.8	1.2	7.75	7.91	7.91
Residential nonfarm	27.0	39.5	44.9	3.5	4.7	1.2	4.29	3.94	3.94
Other	21.7	39.9	45.3	5.7	6.9	1.2	3.45	3.98	3.98
Producers' durable equipment	39.4	64.3	73.1	4.6	5.8	1.2	6.27	6.42	6.42
Change in business inventories	4.8	7.6	8.7	4.4	5.6	1.2	.76	.76	.76
Net export of goods and services	8.6	9.4	10.6	.7	1.9	1.2	1.37	.94	.93
Exports	37.0	(2)	(2)	(2)	(2)	(2)	5.89	(2)	(2)
Imports	28.5	(2)	(2)	(2)	(2)	(2)	4.53	(2)	(2)
Government purchases of goods and services	128.4	196.7	242.9	4.0	6.0	2.0	20.42	19.64	21.32
Federal	65.3	84.8	104.6	2.4	4.4	2.0	10.39	8.47	9.18
National defense	49.9	56.0	69.0	1.0	3.0	2.0	7.94	5.59	6.06
Other	15.4	28.8	35.6	5.9	7.9	2.0	4.45	2.88	3.1
State and local	63.1	111.9	138.3	5.4	7.4	2.0	10.04	11.17	12.14

Source: 1964—U.S. Department of Commerce; 1975—The Conference Board.

[1] This table is consistent with the new national accounts data released in August 1965. The figures are tentative translations of findings drawn in part from the old national accounts, and are subject to significant revisions in a final report now in preparation.

[2] Not estimated separately.

A similar conclusion was reached by Leonard A. Lecht, a member of the staff of the National Planning Association, in his study *Goals, Priorities, and Dollars—The Next Decade.* Lecht's projection calls for a GNP of close to $1 trillion in 1975, expressed in 1962 dollars. He assumes a 4-percent increase per annum in real GNP, based on full employment and a 3-percent per annum increase in productivity of labor. Lecht has studied what the "costs" (in terms of GNP growth) would be to fulfill the goals which have been advanced by the administration in such fields as urban development, health, education, housing, and the like. To satisfy these goals, he has estimated that by 1975 GNP would have to rise to $1.5 trillion (in 1962 prices). Concerning this output, he comments:

> Creating sufficient output to realize the aspiration standards for the 16 goals would entail a GNP growth rate approaching 5.5 percent a year between 1962 and 1975 (measured by GNP in constant prices from the full capacity level of production in 1962). This compares with an increase in GNP averaging 3 percent a year in the past generation and 3.5 percent between 1948 and 1962. Sustaining a 5.5 percent annual growth rate for over a decade would require technological changes leading to massive increases in productivity, considerably beyond the 3-percent growth in GNP per manpower anticipated in the next 10 years.[22]

[23] *Goals, Priorities, and Dollars—The Next Decade,* p. 43.

TABLE 4.—DETAILS OF SELECTED INCOME ACCOUNTS [1]

[Dollar figures in billions of current dollars]

	1959	1963	1964	1975
1. Capital consumption allowances	$41.4	$52.8	$55.7	$97.5
2. Corporate depreciation charges	23.5	32.0	34.0	66.3
3. Other allowances	17.9	20.8	21.7	31.2
4. Corporate profits before taxes [2]	52.1	58.6	64.8	118.5
5. Corporate taxes	23.7	26.0	27.6	47.4
6. Corporate profits after taxes [2]	28.5	32.6	37.2	71.1
7. Dividends	12.6	15.8	17.2	32.4
8. Retained earnings	15.9	16.8	19.9	38.7
9. Corporate cash flow [3]	52.0	64.5	71.2	137.4
10. Personal income	383.5	464.8	495.0	894.9
11. Personal taxes	46.2	60.9	59.2	111.9
12. Disposable personal income	337.3	403.8	435.8	783.0
13. Personal outlays	318.2	383.4	409.5	734.5
14. Personal saving	19.1	20.5	26.3	48.5
15. Personal saving rate (percent)	5.7	5.1	6.0	6.2
Selected Percentage Relationships				
16. Personal income as percent of—				
17. GNP	79.3	78.9	78.7	78.6
18. National income	95.9	96.6	96.2	96.7
19. Corporate profits before taxes [4] as percent of—				
20. GNP	10.7	9.9	10.3	10.4
21. National income	12.9	12.1	12.5	12.8
22. Dividends as percent of—				
23. Corporate profits after taxes	44.2	48.6	46.4	45.6
24. Corporate cash flow [3]	24.2	24.5	24.2	23.6

Sources: 1959, 1963, and 1964—U.S. Department of Commerce; 1975—The Conference Board.

[1] This table is consistent with the new national accounts of data released in August 1965. The figures are tentative translations of findings drawn in part from the old national accounts, and are subject to significant revisions in a final report now in preparation.
[2] Excluding inventory valuation adjustment.
[3] Corporate profits after taxes plus corporate depreciation charges.
[4] Including inventory valuation adjustment.

Aside from the "aspiration" level of GNP (i.e., $1.5 trillion), Lecht's projection of a $1 trillion GNP provides that private expenditures for business and industrial plant and equipment would have to rise from $48.9 billion in 1962 to $102.3 billion in 1975 (all expressed in 1962 dollars). This more than doubling of capital expenditures by business and industry is a measure of the great need for savings in the years ahead if capital formation is to be financed soundly.

The most comprehensive study of capital requirements in the United States in the years ahead has been made by Harvard professor Simon Kuznets. [23] In his monumental study, Kuznets concluded that during the preceding 20 years (1941–60) the rate of economic growth of the

[23] *Capital in the American Economy—Its Formation and Financing*, a study by the National Bureau of Economic Research, published by Princeton University Press, 1961. The Kuznets monograph was the summary volume in a project financed with a grant of $460,000. Other monographs, all published by the Princeton University Press, were: (1) *Capital Formation in Residential Real Estate: Trends and Prospects* (Leo Grebler, David M. Blank, and Louis Winnick); (2) *Capital in Agriculture: Its Formation and Financing Since 1870* (Alvin Tostlebe); (3) *Capital in Transportation, Communications, and Public Utilities: Its Formation and Financing* (Melville Ulmer); (4) *Capital in Manufacturing and Mining: Its Formation and Financing* (Daniel Creamer, Sergei P. Dobrovolsky, and Israel Borenstein); (5) *Trends in Government Financing* (Morris A. Copeland); and (6) *Financial Intermediaries in the American Economy Since 1900* (Raymond Goldsmith).

United States had been held considerably below its potential because of too low a rate of saving. He found that the demands for capital financing will be very large in coming years, and that high levels of consumption are likely to continue. Therefore, he concluded, the supply of savings in the years ahead will be inadequate, and he strongly recommended measures to encourage a higher rate of saving. Kuznet's principal conclusions are well summarized in the following quotation:

> The above treatment of conditions for the future, far too brief and dogmatic, may carry a sense of firmer conviction than is intended. The discussion reflects conclusions suggested by the record of this country's economy—an economy geared for a longrun rise to increasingly high levels of consumption per capita, and one in which savings and capital formation, though large and sustained, nevertheless have been kept within moderate proportional limits by the secularly high propensity to consume. It is also an economy in which the recently increasing diversion of product to current consumption by governments, combined with high levels of consumer demand, has limited capital formation and savings proportions and brought about, under conditions of full employment, rising price levels which have persisted even through the 1958 recession. Against this background, consideration of the prospective large rise in population numbers—particularly of new familymakers, entrants into the labor force, and of the school-age groups—the prospective acceleration of potential technological change and the prospect of continued international competition and strain suggest the following prospects. First, the demand for capital over the coming two and a half to three decades is likely to be large. Second, drains upon the national product for current consumption by governments will continue to be proportionately sizable and may well rise. Third, high levels of consumption and the high secular propensity to consume by individuals and households are likely to continue. Fourth, under the circumstances, the supply of voluntary savings may not be adequate. Finally, inflationary pressures may well continue, with the result that part of the savings needed for capital formation and government consumption will be extracted through this particular mechanism. Yet, extrapolation of inflationary pressures over the next 30 years raises a specter or intolerable consequences, making the policy solutions adopted critically important; and those solutions, in turn, will affect the structure and pattern of financial intermediaries and their role in financing.[24]

The views of Sommers, Lecht, and Kuznets, as well as those in the Joint Economic Committee study, are characteristic of the great majority of economists today. The American economy has great potential for vigorous growth in the years ahead. Public policies will be directed to maintaining full employment and faster growth. If growth is to be realized soundly and without a sharp rise in the general price level, the rate of saving will have to be high. It follows, therefore, that pension plan savings should be encouraged—not discouraged, as some of the passages in the joint committee print would seem to suggest.

PRIVATE PENSION SAVINGS AND LONGRUN INVESTMENT PLANNING

Economists have long recognized that cyclical fluctuations in capital spending have played a major role in the general business cycle. A fundamental objective of public policy must be to introduce greater regularity and sustainability in the flow of investment expenditures. Pension savings serve this purpose well, for two main reasons: (1) they are contractual in nature and hence flow with regularity and predictability into the institutions administering the funds; and (2) a high proportion of pension savings are invested on a forward commitment basis which facilitates longrun planning by business and industry of their capital expenditures.

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[24] Kuznets, pp. 459–460.

Very little needs to be said about the contractual nature of pension saving. Under normal circumstances, the cash flow for investment of institutions administering pension funds is predictable with only a small margin of error. Consequently, these institutions are in a position to enter into forward investment commitments with business and industrial concerns, with public utilities, with homebuilders, and with State and local government units to buy their bonds and mortgages. Under such forward commitments the actual disbursement of the loan funds is in many instances spread over a period as long as 2 or 3 years.

Under the forward commitment process, a corporation desiring funds to expand its plant and equipment can, through the route of a direct placement of its bonds with a pension institution, obtain financing on terms fixed at the time the loan was negotiated. Disbursement of the funds will occur as the funds are needed to complete the construction project. Similarly, a homebuilder planning a housing development can obtain his financing on the same forward commitment basis. Every type of construction project lends itself to the forward commitment process, ranging from gas pipelines, jet airplanes, and office buildings to superhighways and toll bridges.

Tables 5 and 6 show the outstanding forward investment commitments as of January 31, 1967, of a group of life insurance companies holding about 70 percent of the assets of all U.S. life companies.[25] Only 44 percent of these commitments were expected to be taken down within 6 months. A considerable part of the remainder was committed for 1, 2, or even 3 years ahead.

TABLE 5.—*Outstanding Commitments on Jan. 31, 1967, of Reporting Life Insurance Companies*[1]

	Millions
Total commitments	$9,511.7
Securities, total	3,262.0
Business and industrial bonds	2,736.2
Public utility bonds	152.2
Railroad bonds	50.0
State, municipal and local securities	13.6
All other securities	310.1
Mortgage loans and real property, total	6,249.7
Business and industrial mortgages	3,363.0
Farm mortgages	188.6
Nonfarm residential mortgages[2]	2,231.4
FHA insured	213.8
VA guaranteed	99.7
Conventional	1,917.8
Real property for lease or rental	424.3
All other real property	42.5

NOTE.—Because of rounding, components may not add to totals shown.

[1] Companies covered in this report hold 70 percent of the assets of all U.S. life insurance companies.

[2] Memo:

1 to 4 family	429.2
Multifamily	1,747.2

This detail by property is not provided by all reporting companies.

[25] The assets of these companies are not, of course, all pension fund assets, but the pattern would be the same for commitment of funds derived from pension reserves as well as regular life insurance reserves.

TABLE 6.—EXPECTED TAKEDOWNS OF COMMITMENTS OUTSTANDING JAN. 31, 1967, OF REPORTING LIFE INSURANCE COMPANIES[1]

	Outstanding commitments (millions of dollars) expected to be taken down within—			Percent of outstanding commitments expected to be taken down within—		
	1 month	2 months	6 months	1 month	2 months	6 months
Total commitments	$810.3	$1,561.5	$4,198.4	8.5	16.4	44.1
Securities, total	347.4	660.9	1,567.5	10.6	20.3	48.1
Business and industrial bonds	280.9	527.8	1,308.6	10.3	19.3	47.8
Public utility bonds	14.0	30.7	68.5	9.2	20.2	45.0
Railroad bonds	10.4	19.1	31.7	20.8	38.3	63.4
State, municipal, and local securities	3.9	7.4	11.2	28.8	55.0	82.7
All other securities	38.1	75.9	147.5	12.3	24.5	47.6
Mortage loans and real property, total	462.9	900.6	2,631.0	7.4	14.4	42.1
Business and industrial mortgages	208.7	420.8	1,272.2	6.2	12.5	37.8
Farm mortgages	38.5	68.5	134.7	20.4	36.3	71.4
Nonfarm residential mortgages[1]	198.2	369.1	1,098.1	8.9	16.5	49.2
FHA insured	28.9	57.2	120.3	13.5	26.7	56.2
VA guaranteed	9.5	23.2	69.0	9.5	23.2	69.2
Conventional	159.8	288.8	908.8	8.3	15.1	47.4
1–4 family[2]	(64.2)	(128.9)	(334.6)	(15.0)	(30.0)	(78.0)
Multifamily[2]	(127.9)	(231.2)	(742.1)	(7.3)	(13.2)	(42.5)
Real property for lease or rental	16.5	40.4	97.4	3.9	9.5	23.0
All other real property	1.0	1.9	28.6	2.2	4.5	67.2

Note: Because of rounding, components may not add to totals shown.

[1] Companies covered in this report hold 70 percent of the assets of all U.S. life insurance companies.
[2] Memo: This detail by property is not provided by all reporting companies.

Accordingly, rather than being a destabilizing force, as the joint committee print suggests, the contractual nature of pension savings and the investment of such funds on a forward commitment basis are powerful forces for stability in the economy and for sustainable long-term growth.

PENSION SAVINGS, INVESTMENT, AND RISK CAPITAL

As noted earlier, the joint committee print asks whether the investment of pension savings has not been too conservative and thus not conducive to vigorous economic growth. This question appears to reflect a misunderstanding.

It is true, of course, that pension fund investments must be made with due regard to the safety of the principal of the investment. But, this does not mean that the funds are not placed in highly productive uses. It does not mean that the funds cannot be invested with imagination and with a dedication by the investment managers to find the most productive outlets.

The greatest proportion of corporate bonds purchased by insured pension funds today—and for the past 15 years—have been acquired by means of direct placements. A high proportion of the corporate bonds purchased by noninsured funds are also direct placements. By dealing directly with the borrowing firm, pension fund officers are enabled to appraise risk and growth potential. They are in a position to underwrite loans and to be paid for any investment risks taken in the financing of firms in new industries and firms with a high growth potential. This is also true of mortgage loans to business and industry.

In short, pension fund investing has been a powerful force for vigorous growth in the American economy. Perhaps the best way to illustrate this point is to cite some examples of investments made by life insurance companies; the funds involved would, of course, come both from regular life insurance and insured pension savings.

1. In the early post-World War II period the long-distance natural gas transmission industry was still relatively small. In the 20 years since that time, pipelines have been built to connect virtually every State of the Union with the reserves of the South and Southwest to bring the benefits of natural gas to the whole country. This tremendous growth has helped to make the natural gas industry the sixth largest industry in the United States. Life insurance companies have invested billions of dollars in gas pipelines. For example, in the period since 1946, one life insurance company has purchased a total of $1,717 million of bonds for the construction and expansion of natural gas pipelines.

2. The development of the great commercial airline fleets, first with the propeller-driven planes, then with jets, and now with the superjets, has been a big factor in our economic expansion since World War II. Life insurance companies have provided a great deal of the financing. For example, since 1946 one life insurance company has invested $485 million in the airline industry, and another more than $300 million.

3. An important step in prolonging the life of the great Mesabi iron ore range was the development of a method for processing taconite (low-iron-content rock) and pelletizing it into iron concentrate for direct use by the steel mills. Life insurance companies have provided much of the financing for the development of taconite. One life company invested a total of approximately $145 million in the senior obligations of two mining companies to finance such projects. The same life company also played a large part (together with other life companies) in a further solution of the problem of the depletion of the primary iron ore sources in the United States by financing two Canadian projects for the development of iron ore mining and processing facilities in Labrador. This company invested a total of $98,400,000 in the senior securities of these two projects. The same company also purchased a total of $42,500,000 of bonds to help finance the construction of a hydroelectric power development in Labrador to furnish power to one of these projects.

4. In 1950, a life insurance company loaned an aluminum company $20 million. Over the years the same life company purchased $105 million of the $474 million of bonds sold by this company. Other life insurance companies purchased most of the remainder. This tremendous volume of funds was required to finance a major expansion program. The aluminum company entered the aluminum field in 1946. Now, it also produces various chemicals and refractories. Growth over the past two decades has made the company one of the largest domestic producers of aluminum, with worldwide operations. The company's aluminum sales have increased more than tenfold between 1950 and 1966, and the number of employees during this period has increased from about 5,000 to 27,000.

5. A life insurance company issued three recent commitments covering loans on new medicenter properties in Boston, Fort Worth, and

Raleigh, N.C. The commitments are to a relatively new corporation that is undertaking nursing care to provide postoperative treatment for ambulatory patients. This will be at lower costs than available in hospitals and should reduce the overall cost of medical care. It is anticipated that a sizable percentage of patients will come under the Federal medicare program. The medicenters should also free use of hospital beds which are presently in such short supply. The life insurance company's commitments are presently $1,140,000 in Boston and $900,000 each in Fort Worth and Raleigh.

6. A life insurance company in 1946 made a loan of $565,000 to a company engaged in processing soybeans and related products. The purpose of the loan was to help the company finance working capital and plant expansion. Total sales at that time were $56 million. An additional loan of $10 million was made in 1951 when the company's sales were $100 million. Today the company's sales are approximately $560 million. Its active research program has provided valuable information on protein and has helped in the development of an economic protein additive which may be a partial answer to malnutrition in many parts of the world.

7. A life insurance company made several loans to a company in the forest products industry between 1959 and 1963 to finance plant expansion and acquisitions into broader product areas. In 1964, these various loans were refinanced into one total issue of $110 million. During this period sales had grown from $73 million to $331 million. The company has become an important factor in the development of natural resources of the United States and has been a major supplier of raw materials to the building industry.

8. In 1963, a company headquartered in Baltimore approached a life insurance company with the idea of buying enough land to build a city of 110,000 people. This was the origin of the city of Columbia, in Howard County, Md. The life insurance company subsequently acquired 15,000 acres and now has about 20 different projects under construction, plus roads, utilities and other public facilities. This will be a complete city offering not only a place in which to work but also all of the features normally found in a large metropolitan area. It is contemplated that there will be jobs for 30,000 people in the city. Opportunities will range for people to be employed or to express themselves in the performing arts, medical care, and a variety of industries and recreational activities. The life insurance company has so far committed a total investment of $26 million and other investors have committed an additional $25 million.

9. In 1957, when atomic power for electric utilities was still in its infancy stage, life insurance companies agreed to purchase $20 million of first mortgage bonds of an atomic powerplant. This financing represented 35 percent of the cost of a $57 million project to build a new 134,000 kilowatt atomic-powered electric generating plant in Rowe, Mass. While construction of atomic powered generating plants has become rather commonplace today, 10 years ago the concept of atomic fuel for electric generation was new. There had been no private financing of any atomic plant at the time the life insurance companies agreed to purchase these bonds. In fact, to date, there still have been only three privately financed atomic generating plants, of which the one under discussion was the first.

10. In December 1938, a life insurance company purchased directly from a textile manufacturing company an entire issue of $1,875,000 of debentures due in 1948. The life company has since purchased additional issues in their entirety in 1939, 1940, and 1951 and participated (together with other insurance companies) in subsequent direct-placement transactions in 1960, 1963, and 1964. At December 31, 1966, the life company held $26 million of the textile company's note obligations. The remarkable growth of the textile company since the date of the first financing is reflected by the fact that between 1938 and 1966 its net sales increased from about $27 million to about $1.4 billion and its total assets from about $16 million to about $1 billion. Although part of this growth was due to acquisitions, it may be of interest to note that the number of employees increased from about 8,000 on January 1, 1939, to some 69,000 on October 1, 1966.

These are but a few examples of the way in which life insurance company investments, including pension fund investments, have contributed to the economic growth of the United States. More are included in an appendix hereto. If additional examples are desired, a multitude can be made available by the Life Insurance Association of America and the American Life Convention.

RECOMMENDATIONS FOR THE ENCOURAGEMENT OF PENSION SAVINGS ABROAD

It seems ironic that a question should be raised concerning the desirability of encouraging private pension saving here in the United States at the very time when foreign countries are urging increased pension saving in order to permit the sound financing of economic growth. For example, in the recent report *The Development of a European Capital Market*, which was prepared by a group of experts appointed by the European Economic Community (EEC) Commission, it is pointed out that:

> The way in which financing requirements are met depends to a large extent on the composition of the funds available. It is this composition rather than a shortage of savings which explains the structural imbalance to be seen in certain sections of the capital markets in the member states. The supply of funds reaching these markets reflects primarily the following points: (i) Savers generally prefer to hold cash or short-term assets and it would be difficult to alter this liquidity preference radically in the short-term; (ii) Savings which take the form of deposits will remain a major factor in the supply of capital. The financial institutions which collect this form of savings should, therefore, be able to offer medium- and long-term loans and to use their funds on the capital market; (iii) Saving through institutional investors, particularly contractual savings, is inadequate in all member countries except the Netherlands. This inadequancy in part explains why markets are not able to function satisfactorily.[26]

The report went on to add:

> This state of affairs does not seem likely to undergo a spontaneous change, especially now that income redistribution to the advantage of wage earners has raised the savings potential of social classes still unprepared to take a direct interest in the capital market. Consequently, several member states are stimulating the consolidation of savings and the various forms of contractual saving.[27]

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[26] *The Development of a European Capital Market*, Summary of the Report of a group of experts appointed by the EEC Commission, Brussels, November 1966, pp. XV–XVI.
[27] *Ibid.*, p. XVI.

Again, on p. XXI of the report, in discussing incentives to saving, the EEC Commission experts point to the need to give "top priority" to steps to encourage "contractual savings—in particular those linked with employment contracts."

Early this year the Business and Industry Advisory Committee to OECD and the Atlantic Institute jointly sponsored a major conference on the European capital markets. This conference, held in Cannes, January 19–22, 1967, concluded:

> Increased investment is required to assure a rapid increase of production and productivity. With monetary stability and a high level of employment, this brings higher real wages for all. This sequence is the essence of sound economic growth. Both governments and private enterprise require even greater quantities of investment capital as a consequence of the growth of population and the quickening pace of technical progress. At the same time O.E.C.D. member countries ought to increase their flow of capital to developing countries.
>
> This growing demand for capital is not being met by comparable increases in supply. To meet the additional needs, measures must be taken to improve capital markets. Moreover, recourse must be had to more effective use of budgetary policy and adequate self-financing for public and private enterprise.[28]

In order to improve the capital markets and to increase the supply of capital in OECD countries, a number of recommendations were advanced by the conference. Recommendation II called for action to encourage private contractual savings as follows:

> II. To stimulate and expand private contractual savings should be one of the primary policy objectives of the governments. In order to implement this recommendation, the following proposals are made:
>
> A. Pension funds, insurance, and other forms of contractual savings should be stimulated by tax and other inducements, and by further enabling legislation in those countries where it is now lacking.
>
> B. Governmental regulations restricting institutional purchases in capital markets should be relaxed as much as possible.
>
> C. In the field of insurance, the use of funding techniques should be encouraged.[29]

Thus, as European countries strive to maintain full employment and a strong rate of economic growth, it is becoming more and more clear that they must develop and enlarge their capital markets. They appreciate that a high rate of capital formation under full employment conditions must be financed from savings rather than from monetary expansion. It is not surprising, therefore, that they have recognized that to enlarge the flow of savings for capital formation they must take steps to encourage contractual saving through private pension funds and insurance. The American system of private pension saving is the envy of countries around the world which are striving to find a sound basis for financing economic growth.

Summary and Conclusions

The main points presented in this paper may be summarized as follows:

1. The private pension system has a record of outstanding accomplishment and has clearly demonstrated its capacity for growth and improvement. Private pension plans now cover about 25 million em-

[28] Recommendations from the *Conference on Capital Markets*, Business and Industry Advisory Committee to the OECD and the Atlantic Institute, Cannes, January 19–22, 1967, p. 1.

[29] *Ibid.*, p. 1.

ployees, and there is a strong trend toward increased coverage and more rapid funding and vesting.

2. Pension plans benefit the rank and file of employees. The bulk of such plans qualify under provisions of the Internal Revenue Code designed to insure that they do not discriminate as to coverage and benefits in favor of highly paid employees as compared with employees with modest incomes.

3. A private pension system, which continues to grow and continues to improve, is essential for achieving the best possible retirement protection for our population. Pension plans offer unique advantages for this purpose, in view of their flexibility and ability to adjust to the individual circumstances of particular groups of employees in different firms, industries, and geographical locations.

4. The social security program is a basic ingredient in our system of providing retirement protection. But it is essential to keep a proper balance between private pension plans and the social security system. The latter should not be expanded in wage base and benefit levels to the point where it takes over retirement functions which can be performed better by the private sphere. At the same time it is important to continue to improve private pension plan coverage, vesting, and funding so that pension plans which are now doing a good job can do an even better job. The objective is to develop new pension plans and to improve existing ones so that the maximum number of individuals can benefit from them.

5. The Joint Committee Print's concern that pension saving may have a depressing effect upon the rate of economic growth of the United States is unrealistic. It flies in the face of the experience of the past two decades. If the rate of saving has been excessive, as the Print suggests, how can we explain the persistent upward trend of long-term interest rates during the past 20 years? If effective demand for goods and services has been chronically weak, how can we explain the upward drift of the price level since World War II? The U.S. Government is committed to pursuing fiscal and monetary policies designed to maintain full employment and strong economic growth, with stability in the value of the dollar. Such policies will require a very high rate of saving and capital formation, as is assumed in all of the projections of the growth of the American economy in the years ahead. Viewed in this light, and not in the shadow of the "stagnation thesis," the Print's concern about private pension saving is without justification.

6. The Print's concern that pension saving, because of its contractual nature, tends to be a destabilizing force in the economy is also unfounded. The fact is that the contractual nature of pension saving is highly advantageous from the standpoint of economic stability. Inasmuch as the cash flow for investment of pension funds is regular and predictable, institutions administering pension funds have been able to make forward investment commitments which aid business and industrial firms to plan their capital expenditures on a long-run basis. In an economy in which business and industry expects appropriate fiscal and monetary policies, longrun planning of capital expenditures has become realistic and has been encouraged and facilitated by the contractual nature of pension funds and the forward investment commitment process.

7. The Print's assertion that institutions administering pension funds do not contribute to vigorous economic growth through their investments is entirely at odds with the facts. Generally speaking, private pension savings have been directed into highly productive outlets. The examples which we have presented are typical of the way pension funds are invested—with imagination and with high potential for economic growth. At the same time, these investments have been made with safety, as the record of virtually no investment losses in the past two decades attests.

8. In the decade ahead—indeed, for the foreseeable future—there will be an urgent need for a high rate of saving if we are to achieve our national goals of full employment and faster economic growth with reasonable stability of the value of the dollar. To achieve the rate of saving necessary for growth, we must have a healthy expansion of private pension saving. As Kuznets and others have pointed out so well, there have been powerful forces operating in the past to lower the rate of saving, and these forces will persist. It is even more necessary, therefore, to encourage the growth of contractual savings such as those accumulated through private pension funds.

9. Finally, other countries in the free world—notably in Europe—are so convinced that contractual savings are essential to economic growth that they are urging Government measures to stimulate such savings. The really pertinent questions about private pension savings are: In view of the fact that a very high rate of private pension saving will be sorely needed in coming years to aid in financing sound economic growth in the United States, Is the Government doing enough to encourage pension saving? What further steps can be taken to strengthen the flow of pension savings? These are the significant questions to be asked as we look to the future.

Appendix

Additional examples of the way in which life insurance company investments, including pension fund investments, have contributed to the economic growth of the United States are:

1. Some years ago, a firm was established to manufacture high frequency electronic tubes with emphasis on klystron tubes, which had been invented in 1938. A life insurance company loaned this firm $2 million, in 1956, with the funds being used to retire bank debt and expand the plant. With the help of this loan, the firm grew to the point where its gross revenues amounted to $145 million in 1966, compared with $7.2 million in 1955. The company is thriving and has become a diversified electronic manufacturer with foreign operations.

2. A new company was established to engage in the application of paint and other synthetic finishes to continuous coils of steel, aluminum, and other metals. The company was a pioneer in the industry. A life insurance company helped this innovative process by lending the firm $800,000, in 1959. Additional loans of $400,000 and $740,000 were made in 1962 and 1965, respectively. All of these loans were used to finance additional productive capacity. The company's sales rose fivefold between 1958 and 1966, with a proportionate increase in income and employment.

3. In 1958, a life insurance company made a loan of $115,000 to a farm wagon manufacturer. In addition to farm wagons, the company had a mobile hydraulic crane under development. There have been five additional loans made to the company since that time and the total outstanding in 1966 was $1,900,000. The loan funds facilitated the growth of the wagon manufacturing firm and made possible the development of the mobile hydraulic crane. During this period sales and employment of the firm have increased about fifteenfold.

4. In 1958, a life insurance company made a $360,000 loan to a California manufacturer of metal containers for shipping and housing electronic components. Loans to this firm have been increased since 1958 and now total $2,800,000. During this period the sales of the manufacturer have risen from $3 million to $17 million and net worth has increased 5½ times. Employees now number 1,200, compared with 180 in 1958.

5. A small Wisconsin company borrowed $151,000 from a life insurance company in 1964. The company makes portable hydraulic loaders for trucks and tractors which are used primarily to load bulky items such as logs and cement blocks. The business had been formed only about 9 years earlier and it is very doubtful that it could have obtained funds in the public market. There were two additional loans made by the life insurance company and the total investment, in 1966, was $400,000. In 1964 the manufacturer had 86 employees and last year it had 220.

6. In 1960, three insurance companies purchased $16,800,000 of first mortgage bonds of a pipeline in Alaska. This represented 86 percent of the cost of building a 78-mile natural gas transmission pipeline from the Kenai Peninsula to the city of Anchorage, Alaska. Two oil companies who owned and developed the natural gas reserves on the Peninsula advanced the equity moneys of $2,600,000. The building

of this pipeline from the peninsula across the open water to the city of Anchorage brought for the first time to the 70,000 people in Anchorage a cheap source of fuel available for both heating and the generation of electric power. It also permitted the continued development of the gas fields offshore by the two oil companies. Prior to the delivery of natural gas to the city of Anchorage, the only source of fuel were high-cost coal and oil. Completion of the pipeline also resulted in the expansion of the gas distribution system serving Anchorage, operated by a wholly owned subsidiary of the pipeline company. Prior to the delivery of the natural gas, the distribution company in Anchorage had been a very small company delivering gas obtained as a byproduct of burning coal and oil.

7. In 1943, a life insurance company loaned $2 million to a rubber manufacturing company having sales aggregating about $14.1 million. In 1966, this company reported annual sales of $106.1 million. During the intervening 23 years, the life insurance company has made 12 different loans to the rubber company, substantially contributing to its growth. The life insurance company's present investment in the company is $15 million.

8. During the period 1951–67, a life insurance company purchased or participated in the purchase of 15 debt obligations issued by an aluminum company and two of its affiliates. These purchases aggregated $260,810,000 (including a present commitment of $30 million). The life company's investment in such debt obligations at December 31, 1966 (including the commitment), was $170,794,000. The dynamic growth of this major integrated aluminum producer during this period is shown by the fact that between 1951 and 1965 its net sales increased from about $216 million to about $740 million, and its total assets from about $319 million to about $1.2 billion.

9. In 1946, a life insurance company invested $300,000 in a company which manufactures chemical coating. The finishes are used on a multitude of products including appliances, furniture, wall paneling, automotive equipment and a variety of other items. The company recently entered the field of high-pressure laminated plastic sheets for use on furniture and in residential and commercial building construction for counter tops, wall paneling, etc. At the time of the original investment, the manufacturing company's assets were $1.5 million. The life company's investment in this company has grown to over $4.1 million and the manufacturing company's assets are now over $30 million.

10. A life insurance company's investment in an industrial gas company has risen from $3 million, in 1961, to over $19 million. The gas company's assets are now about $50 million, almost five times what they were 6 years ago. Its major operation involves the recovery and sale of industrial gases for use primarily in welding, oil well servicing, and certain chemical processes. In 1962, the gas company constructed one of the first completely automated nitrogen gas plants in the country. The company serves a market principally in Texas and Louisiana, and, more recently, California and Florida, through new plants in these States.

GUARANTY FUND FOR PRIVATE PENSION OBLIGATIONS

BY DAN M. MCGILL*

CONTENTS

Within the last few years, considerable interest has developed within certain quarters in some type of cooperative arrangement that would assure the fulfillment of legitimate benefit expectations under private pension plans, irrespective of the financial status of the plans or their

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sponsors. The idea was given great impetus and a measure of respectability when the President's Committee on Corporate Pension Funds suggested that serious study should be given to the possibility of establishing "a system of insurance which, in the event of certain types of termination, would assure plan participants credit for accrued benefits." [1] Later the National Commission on Technology, Automation, and Economic Progress, in its report to the President and the Congress, under the heading, "Protecting the Earned Benefit Rights of Displaced Employees," stated that:

> We favor whatever legislative or administrative measures may be necessary to promote greater equity and security in the establishment and administration of private pension plans. Specifically, we recommend that careful study be given to a legislative system of reinsurance for private pension plans similar to the reinsurance [sic] of bank deposits through the Federal Deposit Insurance Corporation.

More recently, Nelson McClung and his fellow staff economists prepared a document for the Joint Economic Committee of Congress in which they espoused the cause of a pension guaranty fund, not only in the interest of benefit security but as a means of accommodating a lower level of funding.[2]

The concept has been embodied in various legislative proposals, the earliest of which was a bill introduced by Senator Vance Hartke of Indiana, in 1964, and reintroduced with minor modifications in each subsequent session of Congress. It is contained in the omnibus bill, S. 1103, introduced by Senator Javits during the current session of Congress.

This proposition cannot be evaluated without at least a skeletal description of the milieu in which private pension plans operate.

The Setting

The primary purpose of a pension plan is to provide old-age income to retired workers and their widows, the income to continue throughout the remaining lifetime of the individuals involved. The plan may, and frequently does, provide benefits in the event of the employee's death, extended disability, or voluntary withdrawal from the working force prior to retirement. Under a noncontributory plan, the employer (or group of employers, in the case of a multiemployer plan) assumes sole responsibility for providing the benefits contemplated under the plan, although some or all of the cost of the plan may ultimately be shifted [3] to the employees (through lower wages), the consumers (through higher prices), or the tax-paying public (through tax deductions). Even under a contributory plan, the employer generally assumes the principal burden of financing the benefit structure. Thus, for the sake of simplicity, the objectives envisioned for the pension plan will be referred to as the *employer's* undertaking, even though the covered employees may share in the financing of the plan and participate (through their elected representatives) in its administration.

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[1] "Public Policy and Private Pension Programs", *Report to the President on Private Employee Retirement Plans* (Washington, D.C.: Government Printing Office, January 1965), p. 80.

[2] *Old-Age Income Assurance: An Outline of Issues and Alternatives*, 89th Cong., 2d sess., 1966, pp. 29–30.

[3] It may be argued that under a collectively bargained plan, the employees consciously absorb the estimated cost of the plan by accepting lower cash wages. By the same line of reasoning, one could assert that these employees would bear the cost of a guaranty program.

NATURE OF THE EMPLOYER'S UNDERTAKING

The obligation assumed by an employer in establishing a pension plan may take one of two forms: an undertaking to set aside funds on a specified basis or an undertaking to provide benefits in accordance with a specific schedule. Under the first approach, the employer does not undertake to provide retirement and other benefits in accordance with a fixed scale of benefits, although the scale of contributions will normally be set in the light of an anticipated level of benefits. The contribution commitment may be stated as a percentage of the compensation of covered employees, as an amount per hour or day of work, or in terms of some productivity factor. Regardless of how the commitment is expressed or determined, the employer's obligation to the plan is deemed to be completely fulfilled when he pays over the appropriate sums, even though the assets of the plan eventually prove insufficient to provide the projected level of benefits.

Under the second approach, the employer ostensibly commits himself to contribute whatever sums are necessary to provide the benefits payable pursuant to a formula or schedule set forth in the plan. The plan may call for a unit of benefit for each year of credited service, a composite benefit equal to a specified percentage of compensation (for the entire period of employment, or the years immediately preceding retirement), or a composite benefit expressed as a flat dollar amount. The plan usually recognizes, and gives credit for, some or all of the service performed for the employer in question prior to the inception of the plan, and subsequent benefit liberalizations are generally made retrospective as to years preceding the plan amendment, both practices giving rise to an unfunded accrued liability that would be the primary source of loss to any guaranty arrangement. Except for collectively bargained plans, the employer reserves the right to alter, modify, or terminate the plan at any time—and for any reason.[4] Moreover, he generally reserves the right to suspend, reduce, or discontinue contributions to the plan, whether or not previous contributions have been sufficient to provide all benefits credited to date. Finally, it is customary for the employer to limit his obligation, in the event of plan termination, to contributions already made to the plan. In other words, if the plan terminates, the participants and pensioners must look to the accumulated assets for the satisfaction of their claims. In a relatively small number of cases, largely confined to the petroleum and steel industries, the employer guarantees to provide all accrued benefits (sometimes only vested benefits) in the event of plan termination, in effect pledging the corporate resources to the satisfaction of accrued pension claims.

METHODS OF FINANCING

In order to meet the benefit commitments, explicit or implicit, generated under a pension plan, the employer generally sets aside funds

[4] During the first few years of a plan's existence, it can be terminated without retroactive tax penalties only for reasons of "business necessity."

with a bank or insurance company in amounts and at times roughly commensurate with the rate at which the pension costs accrue. In other words, the employer, through an independent funding agency, usually accumulates funds for the payment of pension and related benefits in advance of the dates when the payments are due, a practice known as *funding*. The general procedure is to fund currently accruing benefits during the accounting period in which they accrue. Benefits credited for service prior to inception of the plan are funded, if at all, over an extended period, usually ranging from 12 to 40 years. If the employer is to get a current tax deduction for these contributions (or advance payments), the moneys must be held under an arrangement that ensures their use for the exclusive benefit of the plan participants or their beneficiaries. This requirement is met through transfer of the funds into an irrevocable trust, generally administered by a bank, or through the purchase of insurance or annuity contracts from an insurance company, including those contractual arrangements under which the funds are not allocated to specific individuals until retirement. In some cases, only the benefits of individuals in a retired status are funded, a practice known as *terminal funding*.

Under a relatively small percentage of plans, the employer pays the benefits directly to retired employees, with no advance funding through intermediaries. Some of these plans are large but the great majority are associated with small firms. Occasionally, the basic pension plan of an employer will be funded, with additional benefits being provided on a current disbursement or pay-as-you-go basis. This method of financing would create complications for a pension guaranty arrangement.

Under existing law, an employer is under no legal obligation to fund his accuring pension costs, and he may deduct as an ordinary and necessary business expense reasonable payments to retired employees or their beneficiaries. However, if he wants to enjoy the tax treatment accorded "qualified" pension plans, which would include exemption from current taxation of investment earnings on plan assets, he must as a minimum fund the normal (or current) cost of the plan plus interest on the initial supplemental liability at the rate assumed in the calculation of the liability. This requirement, which is believed by some authorities to be applicable only during the first 10 years of a plan's existence, is designed to discourage a firm from establishing a pension plan with the deliberate intention of terminating it within a few years. The Internal Revenue Service does not inquire into the adequacy of the cost estimates underlying the funding payments, its chief concern being protection of the Federal revenue against *excessive* tax deductions.

Traditionally, the actual contributions to a pension plan (or, under a current disbursement plan, the actual payments to benefit recipients) have been construed to represent the cost of the plan for both tax and general accounting purposes. That is, pension costs have been accounted for on a *cash* basis rather than the *accrual* basis associated with most business transactions. In November 1966, the Accounting Principles Board of the American Institute of Certified Public Accountants, following several years of intensive study and discussion of the account-

ing aspects of pension plans, took the position that beginning January 1, 1967, pension costs should be accounted for on an accrual basis.[5] The costs are to be computed in accordance with one of the generally acceptable actuarial cost methods (described in Appendix A of Opinion No. 8), using reasonable actuarial assumptions and reflecting the other conclusions of the Opinion.[6] The Opinion stated that the annual provision for pension cost should not be less than the total of normal cost and an amount equivalent to interest on any unfunded prior service cost, plus, if necessary, an additional sum calculated in such manner as to insure the full accrual over a 20-year period of the costs associated with vested benefits.[7] The annual provision for pension cost should not be greater than the total of (1) normal cost, (2) 10 percent of the initial past service cost (until fully amortized), (3) 10 percent of the amounts of any increase in prior service cost arising out of an amendment of the plan (until fully amortized), and (4) interest equivalents on the difference between pension charges and amounts funded.[8] As intimated by item (4) above, the appropriate pension charges are to be made whether or not corresponding payments are made to the funding agency (bank or insurance company). If contributions to the plan are less than the amounts charged to expense, whether attributable to normal cost or prior service costs, the difference is to be shown on the liability side of the balance sheet and described in a manner to make clear that it does not constitute a legal obligation. An excess of contributions over expense charges are to be reflected on the asset side as a deferred charge.

The employer's income tax deductions are still based on his contributions to the pension plan rather than expense charges *per se*.

The new accounting rules apply to all types of pension plans—defined contribution as well as defined benefit plans and unfunded as well as funded plans. It is especially significant that future pension cost accruals under an unfunded plan must be reflected in the employer's balance sheet, which may induce the employer to adopt the practice of funding his pension obligations. The accountants' recommendation that unfunded pension charges under any type of plan be reflected in the balance sheet is likely to cause all employers to fund at a rate at least equal to that at which the pension costs accrue. It may, of course, lead to the practice of computing cost accruals at the lowest acceptable level, thus inhibiting funding. In any event, it should be recognized that in the typical case the employer's legal liability, if the plan should terminate, is limited to the amounts already contributed, even though the balance sheet may show an excess of expense charges over funding payments.

Hazards to Benefit Fulfillment

The primary source of security for *accrued* pension benefits is a fund of assets, including life insurance and annuity contracts, irrevocably placed beyond the control of the employer and committed

[5] See Opinion No. 8, *Accounting for the Cost of Pension Plans*, pars. 16, 17, and 18. This Opinion supersedes Accounting Research Bulletin No. 43, ch. 13, sec. A, *Compensation: Pension Plans—Annuity Costs Based on Past Services* and Accounting Research Bulletin No. 47, *Accounting for Costs of Pension Plans*.

[6] *Ibid.*, par. 24.

[7] *Ibid.*, par. 17. However, the additional sum need not exceed the amount that would be necessary to amortize the initial past service liability over a 40-year period.

[8] *Ibid.*, par. 17.

to the payment of benefits (and attendant expenses) in accordance with the terms of the plan. Thus, broadly speaking, any factor or circumstance that interferes with the accumulation of plan assets at approximately the same pace as the benefits accrue is a threat to the ultimate fulfillment of benefit expectations. A deficiency in plan assets as of any given time may be the result of inadequate past contributions or the shrinkage of asset accumulations through unfortunate investments, decline in market value of sound investments, or, in rare cases, misappropriation.

Past contributions may be insufficient to support the current structure of accrued benefits for a number of reasons. First of all, the projected cost of benefits and expenses may have been inaccurate. Cost projections reflect assumptions as to mortality among the participating employees and their beneficiaries; investment earnings on plan assets; employee withdrawals without vested benefits, the pattern of retirement; and the expenses of operation. If benefits are based on compensation, especially earnings during the years immediately preceding retirement, future compensation levels must be predicted. These cost projections are normally prepared by actuaries after consultation with the employer and other interested parties. Wide areas of judgment exist with respect to most of these cost factors and actuaries of unquestioned professional skill, judgment, and integrity can come up with sharply different answers even when working with the same basic data.

The rate at which the total estimated costs are assumed to accrue is determined by the actuarial cost method employed by the actuary. There are several basic actuarial cost methods, with numerous variations and refinements. One family of methods assumes that the cost of the plan accrues at precisely the same rate as the benefits accrue, the cost per $1 of benefit with respect to any particular individual increasing year by year as the employee nears retirement. The other family of methods projects the total cost of benefits for the covered group, individually or collectively, and assumes that the cost is spread evenly over the total employment period or the remaining years to retirement. Under each of these two basic approaches, the cost of benefits associated with years of service prior to inception of the plan (referred to hereafter as supplemental cost) may be separately calculated and accrued at a rate different from that applicable to the normal cost. These cost methods have no influence on the ultimate true cost of the plan (other than their impact on investment earnings), but they have a significant effect on the rate at which pension costs are charged and presumably funded.

Any of the commonly accepted actuarial cost methods, when employed as a guide to funding policy, can, under the right conditions, and in time, lead to the accumulation of assets equal to or in excess of the actuarial value of accrued benefits. Most employers do pattern their funding contributions after one of the commonly recognized actuarial cost methods and undertake as a minimum to meet the normal cost of the plan plus interest on the initial supplemental cost, if any. There is no legal compulsion to fund the supplemental cost of the plan, and if the cost method in use produces a supplemental cost, the employer may decide not to fund it. In that event, the accumulated as-

sets as of any given time would under many circumstances be less than the actuarial value of accrued benefits.[9]

Even if the employer should undertake to fund the supplemental cost (usually associated with past service benefits or retrospective benefit increases), he will usually spread the funding over an extended period of time, possibly as long as 40 years. He is unlikely to fund more than one-tenth of the supplemental cost in any one year, since he would be unable to deduct currently any greater sum for income tax purposes. Retrospective benefits increases and other plan liberalizations add to the supplemental cost and usually prolong the period needed to achieve a fully funded status. In fact, many plans will never achieve a fully funded condition purely because of periodic plan liberalizations. Clearly, as long as any portion of the cost of accrued benefits under the plan remains unfunded, a termination of the plan will result in the loss of benefits by some participants.

The achievement of a fully funded status does not assure the payment of all benefits in full, even if the plan terminates while that condition exists. The cost estimates of many plans take into account anticipated withdrawals among the employee group and the funding payments are reduced by the amount of estimated nonvested withdrawals. Allowance may also be made for retirements expected to take place beyond the normal retirement age. However, when a plan terminates, these cost reducing factors become inoperative and the benefits that have been credited to that point in time may well exceed the assets that have been accumulated.

The contributions to a pension plan are invested by the funding agency and exposed to the hazards of the capital market. If the funding agency is a life insurance company, the funds must be invested in accordance with the standards set forth in applicable investment statutes. These statutes severely limit the amount of common stock that can be held in the general investment account of an insurer but the limitations are not applicable to special (or separate) accounts set up under group deposit administration annuity contracts. Banks and individual trustees are nominally subject to fiduciary investment statutes, which can be very restrictive, but the instrument creating the trust can and generally does grant broader investment powers to the trustee than those provided by applicable State law, especially in respect to common stock holdings. At the present time the Federal Government imposes no standards of investment conduct, apart from the prohibition against certain types of transactions that would improperly benefit the employer. Legislation now pending before Congress would impose additional standards. Pension funds administered through the general investment accounts of life insurance companies are invested predominantly in high-grade corporate securities and real estate mortgages, while the funds held in separate accounts are invested largely, if not wholly, in common stocks. Funds held by trustees are invested mainly in high-grade corporate securities and common stocks, the proportion of common stocks in some portfolios being well over 50

[9] When the participant group is immature and growing (or even stationary), and a projected benefit cost method is used, the funding of normal cost plus interest on the unfunded actuarial liability, augmented with actuarial gains, can lead to the accumulation of assets equal to or in excess of the value of all accrued benefits, including those attributable to past service and retrospective benefit increases.

percent, especially at market value. Apart from the inherent risks associated with common stock holdings and the unlikely possibility of forced liquidation of assets, pension plan assets, in general, appear to be relatively well protected against investment risks.

Accumulated pension assets may also be lost through the fraudulent or dishonest behavior of plan administrators. Fortunately, there has been little evidence of this type of behavior thus far, and loss of assets from this source has been infinitesimal. Moreover, a number of bills now before Congress would impose a fiduciary status on all persons exercising control over pension assets and would vest in designated Federal agencies certain investigative and enforcement powers designed to protect pension funds against mismanagement.

If the employer pursues a policy of paying the pension plan benefits directly to the eligible claimants, without using a funding agency, the security of the benefits rests entirely on the ability and willingness of the employer to continue his support of the program. The fulfillment of benefit expectations is subject to all the economic vicissitudes that beset the business enterprise itself. The participants can look to no fund of assets insulated from the hazards of the business. Under the action of the American Institute of C.P.A., to which earlier reference was made, the employer must set up a balance sheet reserve equal to the assumed value of the benefits accruing hereafter. Irrespective of whether the proper amounts are credited to the reserve, the assets offsetting the account are not earmarked for the exclusive benefit of the plan participants and their beneficiaries. If the employer should decide to discontinue the payment of retirement benefits, the pensioners and active employees would have no claim against the assets representing the reserves, unless a court were to hold that in the light of all the circumstances the employer had in effect guaranteed the payment of pension benefits. In that event, the pension claims would not necessarily be limited to the value of the pension reserve. On the other hand, if the employer should become insolvent or bankrupt, the accrued pension rights of employees and participants would be given no preference in the allocation of assets and might not be recognized at all.

Applicability of Insurance Concepts to a Pension Guaranty Fund

A mechanism to assure the payment of accrued benefits under private pension plans is, in essence, an insurance arrangement, and its feasibility must be tested against the criteria of an insurable hazard.

LARGE NUMBER OF HOMOGENEOUS RISKS

A sound insurance program must encompass a large number of risks in order that losses may be predicted in accordance with the laws of probability, with reasonable assurance that actual results will conform closely to predicted experience. The risks should be homogeneous in order that an equitable rating structure can be developed. In other words, the losses should be spread among the participating risks in an equitable manner. If the total body of risks is not sufficiently homogeneous to permit the charging of a uniform premium rate, it should be possible to classify the risks into subgroups suffi-

ciently large and homogeneous to permit the development of sound rating procedures. A corollary to this concept is that the insurance program must attract a representative cross section of the risks exposed to the hazard, since otherwise the premium rate will be so high as to discourage voluntary participation by all except the worst risks.

There is obviously a sufficiently large number of pension plans subject to the hazard of termination to satisfy this first criterion. The risks are not homogeneous, however, in the sense that they are subject to approximately the same probability of termination. Unless the premium rate is adjusted to the probability of termination—or is so small as to be inconsequential—the better-than-average risks could be expected to shun the arrangement. Even with an equitable and realistic rating structure, pension plan administrators might find the scheme unattractive, since it would involve an added element of cost. It would appear that participation would have to be compulsory to obtain a random selection of risks.

OBJECTIVE DETERMINATION OF OCCURRENCE AND AMOUNT OF LOSS

For an insurance arrangement to be feasible, it must be possible to determine beyond reasonable doubt that the event insured against has occurred, and the amount of loss sustained should be susceptible to fairly precise determination.

This aspect of an insurable risk could prove to be very troublesome for a pension guaranty fund. The basic difficulty would be to define the event insured against. It is an open question as to whether all plan terminations should be covered or only those originating in certain causes. Some would argue, for example, that the guaranty should be restricted to those plan terminations that occurred because the employer went out of business, while others would regard it as immaterial that the employer continues to operate in one form or the other. Varying attitudes are taken toward mergers, cessation of operations in one plant or locality, and so forth. Special problems exist with respect to multiemployer plans. Questions would arise as to whether a discontinuance of employer contributions is merely a suspension, discontinuance, or termination, as those terms are defined in IRS regulations. Presumably, a pension guaranty program could adopt its own definition (or definitions) of the risk insured against, as contrasted with the views of the Internal Revenue Service, but unless the insured event were carefully delineated, complex problems of interpretation would be involved in determining whether a particular event or transaction fell within the prescribed limits.

The determination of the amount of loss would involve potential difficulties. Plans that provide for a specific unit of benefit for each year of credited service would present no difficulties if the annual accrual were a flat amount or based on current earnings. There would be complications with respect to plans that base the benefit on the employee's compensation during the years immediately preceding retirement or provide a basic benefit geared to career average earnings, subject to a minimum benefit related to final average salary. The minimum benefit—which may be financed through an auxiliary (or side) fund, a terminal funding arrangement, or on a current disbursement

basis—may vest at a different rate than the basic benefit and may in fact be subject to its own set of eligibility requirements. Money purchase plans, especially those involving split funding arrangements, would require special consideration; as would plans that provide a composite benefit, subject only to a minimum period of service. Ancillary benefits, such as those payable for the employee's death or disability prior to retirement, would complicate matters, along with special (nonactuarial) early retirement allowances, annuity options of unequal actuarial value, and social security offsets. These problems, formidable as they may appear, could be overcome by a precise definition of the benefits covered, excluding those that would unduly complicate the administration of the program.

Once the aggregate value of covered benefits was determined at point of plan termination, there would still be a question as to what portion of the liability should be transferred to the guaranty fund and when. This question will be considered in detail at a later point.

RANDOMNESS OF LOSS

The occurrence of loss among the risks exposed to it should be random and beyond the control of the person receiving reimbursement for (or benefiting in any other way from) the loss and any person or firm who would otherwise be liable for the payment. Since this condition is seldom met in practice, the objective is sometimes restated as follows: where the occurrence of the loss may be influenced by the actions of the individuals purchasing the insurance or receiving the claim payment, the benefits payable should be such that the occurrence of the loss is always less advantageous financially than the nonoccurrence of the loss.

In the absence of proper safeguards, this prerequisite would not be satisfied by a pension guaranty fund. There are so many ways that the fund could be abused that many persons believe the whole guaranty idea is unrealistic. If not prohibited, an employer could increase benefits retrospectively just before terminating his plan and let the guaranty fund make up the deficiency in plan assets. Or he might discontinue contributions to the plan in anticipation of formal termination. If an employer could terminate his plan at any time and for any reason, with no one having any recourse against him for the unfunded accrued liability, his willingness to continue his plan through periods of adverse economic conditions could be seriously undermined. Most of the opportunities for abuse could be eliminated or minimized by appropriate limitations in the undertaking, but some of the restrictions might produce an arrangement quite different from that envisioned by sponsors of the idea.

LOW PROBABILITY OF LOSS

The probability that any particular exposure-unit will incur a loss during any given year should be relatively low. If losses occur with high frequency, it will generally be more economical for the person or firm exposed to the risk to budget for the losses outside of an insurance mechanism which, of necessity, involves some administrative expense.

Available data would suggest that the probability of plan termination is fairly small, at least in periods of economic prosperity and among plans that have been in operation for several years. Since most plans that terminate are small, the potential losses to benefit claimants is an insignificant percentage of the total exposure.

The latest and most comprehensive study of plan terminations was carried out by the Bureau of Labor Statistics, in cooperation with the Internal Revenue Service.[10] The study encompassed the years 1955–65. During that period, there were 4,259 pension plan terminations, 30 percent of which were due to mergers. Almost half of the terminations involved plans in effect for 5 years or less, and two-thirds of the terminating plans covered fewer than 25 employees. An average of 20,000 employees per year were affected by terminations, about one-tenth of 1 percent of the number exposed to loss.[11] In many cases, no accrued benefits were lost and in other cases the losses were less than total.

The rate of plan termination, and resulting benefit forfeitures, would undoubtedly increase sharply during a period of depressed business activity. Also, the very existence of a guaranty scheme might increase the risk of plan termination. On balance, however, it would appear that a pension guaranty fund would stand up fairly well against this criterion.

SIGNIFICANCE OF LOSS

The loss suffered by the insured from the occurrence of the event against which insurance is arranged, should be large enough to constitute an economic burden. Otherwise, the expense of maintaining the insurance mechanism and settling claims might exceed the value of the loss payment. This principle is given effect in private insurance operations through the use of so-called deductibles, which cause the insured to bear the first portion or layer of any loss.

The aggregate loss of accrued benefits occasioned by the termination of a pension plan is likely to be sizable enough to satisfy this criterion. The loss to some of the participants, however, may not be. This suggests that the protection of a pension guaranty fund might properly be limited to individuals having some minimum amount of benefit accruals or having participated in the plan for a specified period of years.

ABSENCE OF CATASTROPHE HAZARD

Under an ideal insurance arrangement, the hazard insured against should not be capable of producing a catastrophic loss to the insuring agency out of one event or occurrence. In reality, many hazards that are regarded as readily insurable can, under certain circumstances, produce losses in the catastrophic area. The problem has been overcome through the use of exclusion clauses and reinsurance facilities.

It is conceivable that in a period of extended economic distress, pension plan terminations could confront a guaranty fund with claims of such magnitude that the solvency of the program would be threatened. At such a time, the financial condition of many firms might be

[10] Emerson H. Beier, "Terminations of Pension Plans: 11 Years' Experience," *Monthly Labor Review*, June 1967, pp. 26–30.
[11] *Ibid.*, p. 26.

so precarious that they could not absorb the additional burden of support that would be required. The problems would be alleviated to some extent by the fact that most of the claims against the guaranty fund would represent deferred obligations, which would not have to be fully offset by assets at any point in time. In an extreme emergency, funds could be made available by the Federal Government either in the form of a loan, a direct subsidy, or indemnity payments under a formal reinsurance scheme.

Relevant Precedents

Additional insights into the feasibility of a pension guaranty fund can be gained by examining the essential elements of existing insurance arrangements that fail in one or more important respects to satisfy the conventional concepts of a sound insurance program. Some of these programs are operated under governmental auspices, some under private auspices, some under joint governmental-private auspices, and one—a pension guaranty fund—under the aegis of a foreign government.

GOVERNMENTAL PROGRAMS

The governmental program that is most frequently cited as a precedent for a pension guaranty fund is the Federal Deposit Insurance Corporation. This agency was established in 1933 to restore confidence in the commercial banking system and to prevent another debacle such as that which occurred between 1929–33 and wiped out the savings of millions of American families. Participation in the program is compulsory for banks that belong to the Federal Reserve System but is optional for all other banks. The original act provided only $2,500 of insurance per covered deposit account, but the maximum protection was later increased to $5,000, $10,000, and then $15,000, where it now stands. The program is supported by annual assessments on member banks at the statutory rate of one-twelfth of 1 percent of aggregate deposit liabilities (not just the amounts protected by insurance) but because of credits for favorable loss and expense experience, the effective assessment rate in recent years has been about one thirty-first of 1 percent of average deposit liabilities. The assessment *rate* is the same for all banks, irrespective of age, size, or quality of management. This feature of the system was severely criticized in the beginning on the grounds that strong, conservatively managed banks would be required to subsidize the weaker, less conservative banks. The argument is no longer heard today, probably because the assessment rate is so low. There were also allegations that deposit insurance would encourage reckless lending and investment practices on the part of insured banks, but these fears proved to be unfounded. While the system has never been tested by a major depression, there is general agreement that deposit insurance has become a permanent feature of this country's financial structure. It is such an essential element of economic stability that the system would be maintained even if a temporary governmental subvention should become necessary.

While there are certain similarities between deposit insurance and the proposed guaranty fund for pension benefits, there are dissimilarities that largely invalidate analogies between the two schemes. From

the standpoint of any one individual, the FDIC insures against loss of a known number of dollars that are currently available to the depositor. The pension guaranty fund would insure against loss of future dollars the number of which might not be presently determinable and the right to which would be contingent on survival to retirement and possibly on continuation of the current employment relationship to retirement. More important, the assets offsetting the deposit liabilities of a bank are in the possession of the bank (or else the bank would be insolvent), whereas the assets needed to liquidate the accrued benefits of a pension plan usually are not in the hands of the funding agency, at least in sufficient quantity. Thus, it may be said that the FDIC insures against loss of assets already in existence, while the guaranty fund would, in effect, provide protection against the loss of assets that never materialized (from the standpoint of the funding agency). The FDIC insures a reality, while the guaranty fund would underwrite a declaration of intention. There are types of insurance that provide protection against failure to perform (reference will be made to them later), but they are not a component of the bank deposit insurance program. To the extent that a guaranty fund would make good on benefit defaults arising out of investment losses, there would be a parallel to the FDIC program.[12]

The Federal Housing Administration administers 15 trust funds for the insuring of various types of mortgages. The oldest and largest of these is the mutual mortgage insurance fund, which insures residential mortgages. Detailed eligibility rules have been promulgated by the FHA and each application for insurance is carefully screened to determine whether it meets the minimum standards of acceptability. Among the factors taken into account are the applicant's income, assets, character, and motivation. All approved applicants pay the same premium, one-half of 1 percent of the mortgage (with the remaining balance being recomputed each year), but there is a provision for a refund of excess premiums upon final liquidation of the mortgage, the dividends varying with the risk classification in which the mortgage was originally placed. Defaults have been low and net claim payments well within the premium income, but, as with the FDIC, the system has not been subjected to the exigencies of a severe and prolonged depression.

There is a basic similarity between mortgage insurance and a pension guaranty fund in that both involve the ability and willingness of an individual or firm to make future payments. A major difference is that with mortgage insurance the obligation to pay is secured by an asset (the home, for example), while the employer's obligation to make payments to a pension plan is neither secured nor legally enforceable (except pursuant to the terms of a collective bargaining agreement). Sensitivity to economic conditions is another common attribute, but conclusive evidence on this point lies in the future.

Many States operate guaranty funds to insure payment of workmen's compensation benefits when the insurer or the employer, as a self-insurer, becomes insolvent. New York has a guaranty fund for

[12] The foregoing discussion is equally applicable to the Federal Savings and Loan Insurance Corporation.

claims under automobile insurance policies and another for life insurance policies. In all these cases, the State fund is protecting benefit rights to the limit of its resources against the broad economic hazard of insolvency—which would obviously be involved in a program to insure pension benefits—and even more specifically, the insolvency of insurance companies. Legislation to establish a Federal guarantee fund to ensure payment of claims against insolvent automobile insurers, especially the so-called high-risk insurers, is pending in Congress.

Somewhat farther afield, but still relevant, are the unsatisfied judgment funds in Maryland, Michigan, North Dakota, New Jersey, and New York (and all the Canadian provinces except Saskatchewan), established for the purpose of enabling the innocent victims of automobile accidents to collect on their adjudicated claims or judgments against financially irresponsible motorists.

PRIVATE PROGRAMS

There are two types of commercially written insurance that throw some light on the feasibility of a pension guaranty fund. The first is credit insurance, which is written by a number of nonlife insurance companies. Under this type of insurance, the insurer promises to indemnify a business firm for bad debt losses in excess of those considered (and agreed upon) to be normal for the firm. The level of losses deemed to be normal for the business, and hence not idemnifiable, is determined by the experience of the firm over a period of past years. The premium charged for the coverage reflects the Dun & Bradstreet credit ratings of the insured's customers. The risk of loss to the insurer is greatly influenced by the economic climate, a characteristic shared with the proposed pension guaranty fund. Another common characteristic is that both the ability and willingness of business firms to meet obligations are involved, although there are legal sanctions associated with credit insurance that might not be operative with a pension guaranty.

The other type of commercial insurance that should be considered is that kind of coverage that goes under the name of *suretyship*. There are various forms of suretyship coverage, including losses against infidelity of employees, but the most relevant one for present purposes is that associated with contract or performance bonds. The basic purpose of a performance bond is to indemnify one party for economic loss sustained by failure of another party to carry out an undertaking in accordance with the terms of an agreement between the two parties. A common example of such an undertaking would be the construction of a building in accordance with certain specifications. Another would be an agreement by a parent company to guarantee payment of interest and principal of a bond issue of a subsidiary. The bond is usually purchased by the party that must perform. If the responsible party does not perform as required and the insurer (frequently called the surety) has to indemnify the aggrieved party, the insurer is then entitled to move against the defaulting party in an attempt to recover the amount of the loss payment. In other words, this is a type of insur-

ance under which the party that procures the insurance and pays the premium is ultimately responsible for the payment of any claims that may arise. It has been suggested by some that this principle should be incorporated into any program that might be established for the guaranty of pension benefits. This would make the employer ultimately responsible (to the extent of his corporate asset) for any benefits paid in respect of his plan by the guaranty fund.

Another precedent for giving the guaranty fund a right of recovery from the employer is the doctrine of subrogation that is applicable to all forms of property and liability insurance. Under this doctrine, which is supported by common law as well as contract language, if an insured loss is caused by the tortfeasance or wrongful action of a third party, the insurance company has a right to seek recovery from the tortfeasor. The citing of this legal principle is not intended to imply that an employer who fails to fund or otherwise meet his pension obligations is a tortfeasor in the legal sense, but in granting more guaranteed benefits than he has funded an employer would cause loss to the insuring agency and under certain circumstances it might be argued that he has wilfully and irresponsibly caused loss to the guaranty fund.

PLANS JOINTLY ADMINISTERED BY GOVERNMENTAL AND PRIVATE AGENCIES

There are a number of insurance programs that involve a partnership of some type between a Federal agency and private insurance agencies. In some of these programs, for example, Federal Employees Group Life Insurance and the insurance provided under the Federal Employees Health Benefits Act, the private agencies are the sole risk-bearers, the Government playing a strictly administrative role. In other programs, for example, Medicare and the provision of health insurance benefits for servicemen's dependents, the private agencies furnish only fiscal and claims services, with the Government assuming the entire risk. In other cases, the Federal Government and private insurance agencies have entered into a joint *underwriting* venture under which the Government assumes that portion of the total risk considered to be uninsurable by private agencies. One case in point is export credit insurance in connection with which private insurers assume the normal business risks and the Federal Government, through a reinsurance arrangement, assumes the political risks. Another example is the Servicemen's Group Life Insurance program under which the participating life insurers assume the normal mortality risks and the Federal Government absorbs the risks associated with military service. Still another arrangement that could be used would be for the private insurers to assume the first or primary portion of the risk, with the Government serving as the residual riskbearer through reinsurance or some other device. This is the approach embodied in the proposed flood insurance program now being considered by Congress and representatives of the insurance industry. This is an attempt to deal with a hazard that, because of the threat of catastrophic losses, has heretofore been considered uninsurable for all practicable purposes.

Under the proposed program, which initially would be operative only in certain designated areas and would cover only one- to four-

family residential properties (and their contents), insurance against flood damage would be made available through private insurers in amounts up to $15,000 per dwelling unit, subject to an aggregate liability of $30,000 on structures with more than one unit. Contents could be insured for an additional $5,000 per dwelling unit, subject to an appropriate deductible. The program would be administered by the Department of Housing and Urban Development which, after analysis of pertinent data and consultation with appropriate agencies, would promulgate two scales of premium rates. The first scale, called "risk premiums" and computed on the basis of actuarial estimates of the risk and expenses involved, would be pitched at a level believed to be adequate to cover all valid claims plus allowances for expenses, contingencies, and profits. The second scale would set forth the rates that would actually be charged for the coverage, and these "chargeable" premium rates would reflect consideration of many factors, including land use controls, flood proofing, and flood forecasting. The Secretary of HUD would be authorized to prescribe chargeable rates lower than those computed on the above bases in order to encourage the purchase of flood insurance. In low-risk areas, the chargeable premium rates for existing properties would be the same as, or only slightly less than, the full-cost rates, but in high-risk areas the chargeable premiums would always be lower, the disparity growing greater with the increase in risk.[13] The chargeable premium for insurance on a structure that was started or substantially improved within 60 days after flood insurance became available in the area would be identical with the risk premium (full cost) rate.

The protection would be provided through a pool of private insurers, to which all but the smallest companies could belong. The pool would in all cases receive the full-risk premium, with the Federal Government, through the National Flood Insurance Fund, paying the difference, if any, between the risk premium and the premium paid by the policyholder. The National Flood Insurance Fund would enter into an excess loss type of reinsurance agreement with the insurance pool, in accordance with which the Fund would bear all losses in excess of a stipulated amount per year.[14] The pool would pay a reinsurance premium on a basis as yet undetermined.[15]

The aspects of this proposed program which might be considered by those studying the feasibility of a pension guaranty fund are (1) close cooperation between the Government and the insurance industry in the planning stages of the program; (2) the concept of a premium rate lower than the actuarial value of the risk, with the difference being borne by the Federal Government in the form of premium equalization payments; (3) assumption by the Government of all claims in excess of a stipulated amount per year; and (4) emphasis on loss prevention.

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[13] Under the tentative scale of *net* risk premiums currently being considered, the rates would range from 2 cents to $5 per $100 of coverage. The maximum rate that would be charged any policyholder (with respect to existing properties) would be 50 cents per $100, plus an allowance for expenses, contingencies, and profits.

[14] It is proposed that the Government pay all claims in any year that exceed $50 million or 35 percent of the risk premiums earned by the insurance pool, whichever is the lesser.

[15] A proposal under consideration would link the reinsurance premium to the gross profit of the insurance pool on the flood insurance business. In other words, the pool would pay to the National Flood Insurance Fund, as a reinsurance premium, the excess of premiums earned over expenses and claims incurred, less a specified percentage for profit.

SWEDISH PENSION GUARANTY FUND [16]

A rather complex but apparently workable system for assuring the payment of pension benefits has been in operation in Sweden, since 1960. While the institutional environment in which this system functions is quite different from that in the United States, lessons can undoubtedly be learned from the Swedish experience.

The system was an outgrowth of a series of collective bargaining agreements between employer and salaried employee associations, reaching into every branch of industry (and certain trade, service, and agricultural undertakings), pursuant to which certain pension benefits were to be provided as a supplement to the national old-age insurance program. The agreements gave the employers the option of purchasing the benefits from the Swedish insurance company (the Swedish Staff Pensioning Society) established by employers about 40 years ago for the sole purpose of underwriting pension benefits or of assuming legal responsibility for the direct payment of the benefits. If the employer elects the first course of action, he fully discharges his legal responsibility by the payment of the necessary premiums and he does not get involved in the pension guaranty mechanism. If, on the other hand, the employer prefers to keep the equivalent of the premium payments in his own firm, he must set up an internal pension fund and register it with a central registration agency, called the Pension Registration Institute (PRI), which has other functions and indeed plays a very active role in the whole pension process by recording benefit accruals, informing employees of their rights, performing actuarial valuations, and paying benefits underwritten by the aforementioned pension insurance company (SPP). The employer's internal fund, referred to as the "PRI fund," must at all times hold assets equal to the actuarial value of all accrued benefits—as calculated and certified annually by the PRI—but the only assets placed in the funds are unsecured promissory notes of the employer. These notes would be enforceable against the general assets of the employer in the event of insolvency or bankruptcy but without any special creditors' preference, except as noted below.

Since the alternative methods of providing the bargained benefits are supposed to be endowed with equal degrees of security—and to be equal in all other respects—and since the worth of the employer's promissory notes is completely dependent upon the financial well-being of the firm, it was necessary to create another agency to underwrite the credit of the employer. This organization, a mutual credit insurance company formed by the employer associations and known as FPG, assumes the pension obligation of an insured employer who defaults on his pension payments and then discharges its responsibilities by the purchase of annuities in the appropriate forms and amounts from SPP, the pension insurance company. It seeks reimbursement for its premium outlays by taking over the promissory notes in the employer's internal fund and competing with other creditors in the resulting bankruptcy proceedings, with no special preference other than with

[16] For a more detailed description of this system see G. M. Ericsson, "PRI—A Self-Insured Pension Scheme in Sweden", *Transactions of the 17th International Congress of Actuaries*, London-Edinburgh, 1964, pp. 554–567 and Sven Hydén, "A New Approach to Financing Private Pension Schemes in Sweden", *International Review of Actuarial and Statistical Problems of Social Security*, No. 9.

respect to benefit rights that accrued during a short period preceding the adjudication of bankruptcy.

FPG makes credit insurance available only to joint-stock companies and economic associations (roughly equivalent to corporations) and only to such enterprises that have been in business for at least 3 years and employ a minimum of five salaried workers. Since there is an average of three and one-half manual workers for each salaried employee, the general effect of this stipulation is to limit the coverage to firms employing a minimum of 20 persons. Applications are carefully screened since the insurance is written for a 5-year term and if not renewed remains in effect for a systematically declining amount of pension liability for an additional 15 years (the time given the employer to convert his pay-as-you-go scheme to a fully insured arrangement). The financial position, economic prospects, and quality of management of the firm are carefully considered, the risk appraisal being at least as rigorous as the standards applied by banks in making long-term loans. Firms that cannot qualify for credit insurance, either because they are too small or too unstable, must purchase the required benefits from the pension insurance company (SPP).

FPG charges a risk premium of three-tenths of 1 percent of the accrued pension liability, plus a nominal loading for administrative expenses. It has the authority, not invoked as yet, to levy cumulative assessments of up to 3 percent of the accrued pension liability over successive 5-year periods. This annual premium rate was adopted after a study of bankruptcies occurring among Swedish corporate enterprises during the period 1929–58.[17] The investigation proceeded on the assumption that the present scheme of supplementary pension benefits had been inaugurated on January 1, 1929. The aim was to discover the amount of moneys that would have had to be set aside annually to cover the accrued pension obligations of the firms that went into bankruptcy, on the severe and unrealistic assumption that in no case would there have been any corporate assets available for the satisfaction of pension claims.

The study revealed that a premium slightly less than two-tenths of 1 percent of the pension debt outstanding would have covered the aggregate losses occurring during the period. Only in the years 1933 and 1934 would the credit insurance company have been unable to meet all claims out of accumulated reserves, the deficit being erased by 1937. With the exception of the year 1957, the insured firms would have paid larger premiums in each of the years from 1935 to 1958, inclusive, than would have been required to pay the claims arising during those years. The premium rate was set at three-tenths of 1 percent in order to permit the building up of reserves that were considered to be a substitute for a large initial guaranty capital fund.

As of the end of 1966, about 1,900 Swedish corporate employers, comprising about 15 percent of the total, had elected to utilize internal funding for the salaried employees' supplemental benefits, with the concomitant use of the credit insurance mechanism. Approximately 200,000 employees and 9,000 pensioners were covered by this arrange-

[17] The investigation was limited to enterprises that belonged at some time during the period to the Swedish Employers' Confederation (SAF), which includes within its membership practically all firms in the manufacturing industry and the majority of those in the building and road transport industries. Bankruptcy was construed to be the equivalent of failure to pay the required contributions to SAF. In other words, any company that failed to pay its dues to the SAF was considered to be bankrupt.

ment, accounting for two-thirds of the salaried employees of firms engaged in manufacturing and commerce. The internal funds of these employers were holding $452 million in employer promissory notes, with the volume expected to increase by $100 million annually over the next few years. FPG was holding reserves of $3,450,000, which constituted 0.76 percent of its liabilities, as measured by the employer promissory notes. The company's objective is to accumulate a reserve of 2 percent of its liabilities by the year 1980. Through June 30, 1967, the company has had to make good on its guaranty in only six cases (three arising during the first 6 months of this year), involving slightly more than $200,000 ($180,000 in 1967) in "claim" payments. The company has terminated the insurance coverage of nine firms, advancing $320,000 in loans to these employers for the purchase of insurance from SPP.[18]

This credit insurance arrangement bears a surface similarity to the proposed guaranty of pension obligations in this country in that the basic risk is the insolvency of the employer. There is a fundamental difference, however, in that under the Swedish arrangement all accrued benefits are fully offset at all times by legally enforceable promissory notes of the employer,[19] and the only risk involved is the probability that because of the employer's bankruptcy the notes would not be paid off in full. The Swedish scheme limits the coverage to those employers who can qualify, forcing the remaining employers to purchase benefits from the pension insurance company. Pension plans in this country are too diverse to be adapted to the Swedish scheme, but certain elements of the scheme such as prescribed levels of funding, assumption by employers of legal liability for the payment of pension benefits, and limiting the credit guaranty to those that earn it, deserve serious study.

Issues

Many issues would have to be resolved if a pension guaranty fund were to be established in the United States.[20] This section analyzes the issues and points to the various courses of action, without attempting to reach final solutions.

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[18] The foregoing operating statistics were made available by Mr. Sven O. Hydén, managing director, Pension Guarantee Mutual Insurance (FPG) in a letter to the author dated July 21, 1967.

[19] In Sweden all pension benefits are funded on a level cost basis and the concept of an unfunded pension liability (i.e., a supplemental cost) is not recognized.

[20] This presupposes an earlier decision to use a guaranty fund mechanism rather than a suretyship arrangement such as that employed in Sweden. In theory the objectives of the current proposals for a pension guaranty could be achieved by requiring employers to undergird their pension promises by the purchase of a performance bond from a surety company. In the event of a default on pension obligations, the surety company would be expected to make good on the benefit promises through the purchase of annuities from life insurance companies, with recourse against the employer for its net outlays. Among other advantages, this approach would permit the charging of a premium rate commensurate with the individual risk involved. Some supervisory agency would have to determine that the mandatory performance bond was purchased and maintained in force and that employee rights were protected in the event of plan termination. There would also have to be some mechanism, similar to assigned risks pools in automobile and workmen's compensation insurance, to provide coverage to employers who could not purchase the required insurance through regular channels. Since purchase of insurance would be mandatory, the rates charged by the surety companies would have to come under public surveillance. Despite the flexibility of this approach, its feasibility would be completely dependent upon the response of a group of private insurers to a new and hazardous type of coverage. Of course, a new surety company could be established for the sole purpose of writing this coverage, but it is doubtful that such a mechanism would offer any real advantages over the type of guaranty fund described hereafter in this paper.

ADMINISTERING AGENCY

A pension guaranty fund, hereinafter referred to as the PGF or the guarantor, could be established and operated under the auspices of a Federal agency, a private agency, or a combination Government-private instrumentality. The choice would depend in part on political philosophies and in part on the financial mechanism envisaged. Legislation proposed thus far has contemplated administration by a Federal agency which would be feasible under any set of circumstances and would be especially appropriate if the financing scheme should embody the assessment principle, with a minimum accumulation of assets, and if the Government were prepared to assume the greater part of the risk involved.

Administration by a central private agency, specially created for the purpose with representation from employers, labor unions, banks, insurance companies, and other interested parties, would appear to be equally feasible. Private control over the guaranty mechanism might make the whole idea more acceptable to employers (who would be expected to bear all or a substantial part of the cost) and it would be particularly desirable if a major investment function should be envisioned.

Another possible approach would be to utilize a central agency, either governmental or private in nature, for the collection of premiums, adjudication of plan terminations, and other ministerial functions, with the guaranteed benefits being underwritten, for a consideration, by life insurance companies on their own account or as members of a pool. The risks could be assigned to individual companies on a basis similar to that employed with Federal Employees Group Life Insurance, the Federal Employees Health Benefits Act, or Servicemen's Group Life Insurance. The pool arrangement could be patterned after that being considered for the flood insurance program. The primary difference between this approach and the second one mentioned above would be that in one case the central agency would retain the risks taken over from terminated plans, acting as an insurer in the process, whereas in the other case the risks would be transferred to existing insurance companies on some equitable basis.

Any approach that would place upon private agencies the basic risks inherent in plan terminations would probably have to embody some mechanism for governmental reinsurance.

EVENT INSURED AGAINST

The most difficult problem that would have to be confronted in the establishment of a sound and equitable system for assuring the payment of accrued pension benefits would be defining or articulating the circumstances under which the protection of the system could be invoked. One would naturally assume that the guaranty would be applicable only when the pension plan has terminated under certain prescribed conditions, but all bills on this subject now pending before Congress clearly contemplate that the guaranty could be invoked by certain groups of employees even though the plan continues in existence. For example, the Javits bill defines the insured event as "substantial cessation of one or more of the operations carried on by the

contributing employer in one or more facilities of such employer before funding of the * * * liabilities * * *"

This type of thinking appears to be a throwback to the concept of a partial termination expressed in IRS regulations in language similar to the above-quoted passage. The IRS was concerned that an employer, in anticipation of a complete termination of his pension plan, might engage in a massive discharge of employees—through individual layoffs or closing down of specific operations—thus increasing the share of the plan assets that would be available for the officers, supervisors, and highly compensated employees. To forestall such action, the IRS introduced the concept of the partial plan termination, which has the effect of vesting all accrued benefits of the employees involved. In a real sense, the concept was introduced as a substitute for reasonable vesting provisions in the plan at a time when vesting through plan provisions was not as common as it is today.

The most baffling difficulties conjured up in connection with a pension guaranty scheme are concerned with the rights of individuals who lose their jobs while the pension plan to which they belonged continues in operation. The job loss could result from the elimination of specific positions or the closing down of an entire plant, division, or subsidiary. The problem, if there is one, is lack of adequate vesting. If the pension rights of the displaced employees were vested, they would retain a claim to benefits enforceable in due course against the assets of the plan. If the plan itself were eventually to terminate with insufficient assets, unsatisfied claims would be met by the guaranty fund. Thus, the defintion of the insured event should not be complicated—perhaps to the point of utter uselessness—by an effort to meet another problem that is not an inherent part of the guaranty scheme. The vesting problem would be largely solved if legislative proposals now being readied by the administration were to be adopted. The remaining discussion assumes that any pension guaranty would apply only to benefit claims arising out of a plan that has terminated in its entirety.

The definitional problem would be further simplified if it could be assumed that a plan termination was always an incident to the final dissolution of the sponsoring firm. This, of course, is not the case. Most firms (more than 80 percent according to the BLS study of terminations) continue in full operation, usually in their original form, after terminating their pension plans. In some of these cases (about one-fourth according to the BLS study), the discontinuance stems from financial difficulties. In the other cases a variety of causes may be at work. Some of the more common reasons, other than financial difficulties, why a pension plan might be discontinued are (1) sale or merger of the sponsoring firm, (2) transfer of the employees to another pension plan, (3) substitution of a profit-sharing plan or other form of deferred compensation for the pension plan, (4) closing of a plant or other subdivision that had its own pension plan, and (5) desire of the sponsoring firm to protect or improve its profit position, and (6) mutual agreement by the parties to a collective-bargaining contract. There are undoubtedly cases where the firm ostensibly goes out of business only to reopen under another name or in another form.

There is serious doubt concerning the propriety—and feasibility—of invoking a pension guaranty when the firm that created the pension

obligations continues to operate in one form or the other. It would clearly be inappropriate to have a guaranty fund assume the unfunded obligations of a plan terminated in order to transfer the employees into another pension plan or a profit-sharing plan, or pursuant to an agreement between the parties to a collective-bargaining contract, presumably to protect or increase cash wages. It would also seem improper to permit a prosperous corporation to slough off unto a guaranty fund the unfunded pension claims of persons who had been employed in a plant or division (with its own pension plan) shut down for presumably sound business reasons. This would have the effect of increasing the labor costs chargeable to the remaining units of the business, an unfortunate but unavoidable consequence. A firm that purchases another should be expected to assume the pension obligations of the acquired firm, the purchase price reflecting the unfunded liabilities. It is recognized that this requirement might force complete dissolution of a firm or one of its subdivisions because of the unwillingness of the prospective purchaser to assume the unfunded accrued pension obligation of the firm to be acquired. Accrued pension benefits should also be protected when two or more firms merge despite the fact that the merger negotiations might be complicated thereby. The guaranty would seem to be justified when the termination was motivated by financial difficulties verified by the administering agency. Yet this would create an unconscionable distinction between participants in pension plans terminated because of financial exigences and those in plans terminated for other reasons, unless the sponsoring firms undertake to honor out of corporate assets the unfunded benefits accrued to date of termination.

The whole matter would be greatly simplified—with some reduction in the attractiveness of qualifying a plan under Treasury regulations—if the guaranty scheme were established on the basis that the sponsoring firm, or its successor, would have the primary legal responsibility of meeting the cost of the benefits covered by the guaranty, the PGF having only the residual liability. Then it would be possible to define the insured event as the complete termination of a pension plan, without reference to the circumstances surrounding the event. If the sponsoring firm had gone out of business, or was in process of doing so, its obligation to the plan (or the PGF) would be discharged to the extent of available resources in a lump-sum payment. If the firm continued in operation, its obligation could be discharged over a number of years in accordance with the pattern prescribed for the funding of the supplemental liability. (See next section.) In the meantime the PGF would stand ready to assume responsibility for any benefits not ultimately funded by the employer. Unless such a feature can be made part of the guaranty arrangement, it would probably be necessary to define the insured event in terms that would limit the guaranty to plan termination arising out of the final dissolution of the sponsoring firm (or its successor), whether by bankruptcy, insolvency, or voluntary winding up.

Special rules would have to be developed for multiemployer plans, since among other distinguishing characteristics, they have an existence apart from that of any particular employer belonging to the plan. In some industries in which these plans are found, such as the building

trades and the maritime industry, the employment relationship is very tenuous, frequently being limited to one construction job, voyage, or other undertaking. In other industries the employment relationship is more conventional. In either of these settings, it would be desirable to provide some measure of protection to the accrued pension benefits of the employee participants irrespective of whether the current employer or past employers continue to participate in the plan or continue in operation. The preferred arrangement would be for the plan to assume the primary responsibility for the payment of the benefits that would come under the guaranty, so long as the plan continues in operation, with the PGF providing the ultimate guaranty. There would have to be safeguards to protect the plan against abuse, and the contribution rate (or benefit levels) would have to reflect the anticipated cost of the internal guaranty.

A precedent for this type of approach is found in the national industrial group pension plan developed by the Industrial Union Department of the AFL–CIO and jointly underwritten by a number of life insurance companies. If an employer has participated in this plan for more than 3 years and terminates his participation for reasons beyond his control, the accrued benefits of his employees are assumed by the plan on a scale determined by designated priority classes and the number of years during which the employer participated in the plan. After only 3 years of employer participation, the benefits of all employees aged 60 or over with the equivalent of 10 years of credited service (10 "service units") are assumed in full by the plan. The benefits of employees under age 60 but with a minimum of 10 years of service are assumed by the plan on a scale graded upward from 30 percent with 3 years of employer participation in the plan to 100 percent after 10 years of employer participation. Employees aged 72 or over at the time of the employer's withdrawal from the plan who are at least 5 years beyond normal retirement age have their benefits assumed in full by the plan even though the employer participated for less than 3 years. (Apparently, the plan is prepared to assume ultimate responsibility for this class of employees the moment the employer enters into a "participation agreement" with the plan and fulfills its contributions commitment.)

In the absence of an internal guaranty arrangement, the PGF could assume ultimate responsibility for the payment of the covered benefits of employees whose employer withdraws from a multiemployer plan after a minimum period of participation and for reasons beyond his control. The employees would retain claims against the plan to the extent of the funds allocable to them, but the PGF would make good on any insufficiency of assets—despite the fact that the overall plan continues in operation. In other words, the employer's withdrawal from the plan be treated as a plan termination with respect to his employees. The guaranty should not be invoked if the employees' rights are preserved through membership in another plan or in the same plan through subsequent employment with another firm belonging to the plan. This approach would not be applicable to multiemployer plans in industries characterized by temporary employment relationships. In these cases, termination of the master plan would have to be the contingency that invokes the guaranty.

OBLIGATION OF THE GUARANTY FUND

It goes without saying that a pension guaranty mechanism should relate only to benefits accrued to date of plan termination, however that event may be defined. Thus, the PGF should not undertake obligations with respect to benefits that would have been earned had the plan remained in operation and the employee continued in the service of the employer until normal retirement age. Moreover, it does not follow that *all* accrued benefits would be entitled to the protection of the program. Various limitations, discussed later, might be necessary or desirable. Thus, the following discussion should be understood to apply only to the benefits that would be entitled to protection.

Broadly speaking, the obligation of the guaranty fund could be expressed in one of two ways: (1) assurance of ultimate payment of the benefits covered by the program or (2) completion of the employer's funding commitment.

Assurance of Ultimate Payment of Guaranteed Benefits.—The most comprehensive approach would be for the PGF to assure ultimate payment of all covered benefits, irrespective of the amount, source, or cause of the asset deficiency. The deficiency could be caused by inaccurate estimates of cost, failure of the employer to undertake an adequate funding program, lack of time for the completion of a realistic funding objective, or loss of asset values through realized or unrealized capital losses. No minimum standards of funding would be imposed and, in fact, pay-as-you-go plans would be eligible to participate. Risk classifications would be established on the basis of probability of plan termination, and the premium paid in respect of a particular plan would be derived by multiplying the probability of termination times the actuarial value of unfunded benefits. In some cases, this combination of factors might produce a premium charge as large as, or larger than, the annual contributions under a realistic funding program. Losses incurred on liquidation of assets in connection with plan termination, the subject of special provisions in the early legislative proposals, would be blanketed in under this approach insofar as they affect the payment of guaranteed benefits. Benefits not subject to the guaranty would not be protected against liquidating losses, but, as will be noted later, it is possible to devise a claim settlement procedure that would eliminate or minimize the risk of such losses.

The advantages that would be associated with the approach are (1) eligibility of all types of plans, including those financed on a pay-as-you-go basis where the need for protection is greatest; (2) coverage of all sources of asset deficiency, including liquidating losses as they relate to covered benefits; (3) equitable allocation of costs through use of many risk classifications; and (4) absence of mandated standards of funding. All of these advantages would have offsetting disadvantages from other points of view. The approach would lend itself to great abuse because of its sweeping coverage; it might encourage highly speculative investment policies; it would be extremely difficult, if not impossible, to predict the probability of termination among various classifications of plans—which would be especially important in connection with unfunded plans; the need for a governmental subsidy would be greater than under any other approach—because of the fore-

going factors plus absence of minimum funding standards; and finally participation by pay-as-you-go plans (which might be encouraged at the expense of funded plans) would have to be on a voluntary basis unless they are to be brought under some degree of regulatory control, as they have been in the United Kingdom.[21]

Most of the major disadvantages of this approach could be overcome by requiring the covered benefits to be funded in accordance with minimum standards stipulated by law or administrative agency. These standards would concern themselves with actuarial assumptions, actuarial cost methods, and the period of time allowed for the full funding of all covered benefits. If the guaranty were to apply to all accrued benefits, the employer might be expected to fund his normal cost currently and his supplemental cost, if any, over a maximum period of 25 or 30 years. If the guaranty were to apply only to a segment of the accrued benefits, such as those that have vested, the standard might speak only of the maximum period over which the covered benefits were to be funded in full, possibly on the basis of specified mortality and interest assumptions. Alternatively, the standard might require the current funding of the normal cost of the vested benefits and the amortization of the supplemental cost of the vested benefits over a specified maximum period. Another logical standard might prescribe the funding of the normal costs of all accrued benefits for the plan as a whole plus whatever additional sums are needed to assure that all vested benefits are fully funded by the end of 20 years. Whichever approach is used, full funding of all vested benefits should probably be required in 20 years, corresponding to the principle adopted by the AICPA for the accruing of the costs of vested benefits. A funding standard promulgated for only a segment of the total benefits would have to be reconciled with the broader minimum standard articulated by the Internal Revenue Service.

If the plan should terminate before the required level of funding has been achieved, the unfunded portion of the accrued liability would become the obligation of the PGF. The funding of supplemental costs arising after inception of the plan from such causes as retrospective benefit increases, actuarial losses (unfavorable deviation of actual from assumed experience), and revision of actuarial assumptions should also come under the "completion" guaranty, but subject to adequate safeguards against abuse. Since the obligation of the PGF would be stated in terms of *benefit payments*, the strengthening of actuarial assumptions would not add to the existing obligation of the guaranty fund and might in fact diminish it through stepping up the rate of funding. Recurring actuarial losses would be significant in that they would suggest the strong possibility that the employer's funding policy was based on an understatement of the ultimate or "true" cost of the covered benefits.

The major advantage of this modification would be the reduction of the risk assumed by the PGF through the systematic funding of covered benefits on the basis of presumably realistic cost estimates.

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[21] In the United Kingdom, the penalty for nonapproval of a plan by the Inland Revenue Department is the current taxation of employee participants in respect of employer contributions. If the plan is not funded, the contributions are imputed to the employees.

The major disadvantage would be the exclusion of plans operating on a pay-as-you-go basis, unless such plans were forced to convert to a funded basis. There would be other disadvantages, such as the employer's authority to create additional liabilities for the PGF, without any recourse against his own corporate assets, and the risks associated with speculative investment policies.

The viability of the modified approach is clearly dependent upon the enforcement of minimum standards of funding. There should be sanctions other than suspension or cancellation of coverage since these actions would penalize only the plan participants for whose protection the program was established in the first place. One possible sanction that would be effective, assuming availability of assets, would be to make the employer financially responsible for any defaults on scheduled funding payments. The sanction might take the form of a tax penalty, possibly equal to the funding deficit, that could be diverted to the PGF to offset its increased liability. The tax payment could be refunded, at least in part, if the employer later made restitution to the plan.

A more comprehensive remedy, that could be applied with or without a funding requirement, would be to make the employer primarily responsible for any deficiency in plan assets, with the guaranty fund being only contingently liable. Procedurally, the PGF would assume full and direct responsibility for the fulfillment of benefit expectations, but would have right of action against the employer to recover any asset deficiency. The PGF would be regarded at law as a creditor of the employer and could be given an appropriate preference in an insolvency or bankruptcy proceeding. Making the employer legally responsible for the payment of accrued benefits would encourage conservatism in the granting of benefits and in the financing of the benefits. It would eliminate most of the possibilities of abuse (or selection against the fund) and make it possible for the PGF rules to be far less restrictive as to coverage, benefits, and funding. On the other hand, it could discourage the voluntary establishment of qualified plans. For constitutional reasons, it might be necessary to limit the employer's legal liability to benefits accruing after enactment of the pertinent legislation.

Completion of the Employer's Funding Commitment.—The second basic approach would be to limit the liability of the PGF to the completion of the employer's funding program for covered benefits, without regard to the sufficiency of the projected contributions. In other words, the guaranty would attach to the *funding* commitment rather than to the *benefit* commitment. In theory, this approach could be followed without any standards of funding other than those imposed by the IRS as a condition for continued qualification but for all practical purposes it would have to be grounded on minimum standards comparable in nature and scope to those suggested in the preceding section. The initial accrued liability for covered benefits could be increased by benefit liberalizations, subject to necessary safeguards, but a recomputation on the basis of revised actuarial assumptions could be permitted only with the approval of the PGF. Under this procedure, the dollar amount of the PGF's potential aggregate liability could be definitely determined at any time. It would be the

unfunded portion of the explicitly recorded accrued liability for all covered benefits of all plans encompassed by the program. If the covered benefits of a terminated plan could not be satisfied in full when account is taken of the PGF's obligation, benefits would have to be scaled down to manageable proportions.

As with the benefit guaranty approach, there would have to be sanctions to enforce compliance with the mandated standards of funding.

This arrangement would insulate the guaranty fund against the effects of unrealistically low cost estimates on the part of the employers, an obvious advantage to the PGF and to employers who fund on the basis of adequate cost estimates. It would also protect the PGF against the undesirable consequences of unduly venturesome investment policies, unless the fund assumed responsibility for increases in unfunded liability arising out of realized and unrealized capital losses—as it might well do. The primary disadvantage of this approach is that the risk of inadequate asset accumulations would be shifted to the plan participants. It also fails to deal with the problem of the pay-as-you-go plan.

The obligation assumed by the PGF under this approach would be tantamount to assuring the fulfillment of benefit expectations if (1) the PGF prescribed the actuarial cost method and actuarial assumptions to be used and the period of time allowed for the full funding of all covered benefits, (2) the funding standards were enforced, (3) the PGF assumed responsibility for unfunded actuarial losses, and (4) the PGF or an insurer assumed the actuarial risks associated with benefits that survive a plan termination.

PLANS COVERED

A number of questions are involved with respect to the plans that would be brought under a pension guaranty program. The most fundamental question is whether all plans eligible for coverage would be required to participate in the program. The answer is clearly in the affirmative. There would be too much selection against the PGF if employers were permitted to elect coverage. There would be an understandable tendency for financially stable firms to stay out of the system and for the less stable ones to elect coverage. Worse yet, the latter firms, where the need of a guaranty is greatest, might also elect to remain outside the program. There might be a universal reluctance to participate in any undertaking that would add to the cost of doing business and, if not properly structured, might be grossly abused. Compulsion seems to be the only answer, despite the fact that this feature might narrow the range of plans that could be brought into the program.

If the program were to be made compulsory, it would have to be restricted to plans "qualified" under the Internal Revenue Code and implementing regulations, unless a new control mechanism is developed. At the present time the only effective club that the Federal Government has over pension plans is denial of the tax treatment that is accorded plans which meet certain specifications, designed to prevent discrimination in favor of stockholders, officers, supervisors, and highly paid employees. Conceivably, Congress could enact a law making it

unlawful to hold out the promise of pension benefits, however the promise might be hedged, unless the anticipated benefits were funded in a prescribed manner, but the prospects of such legislation in the near future seems remote. There is the possibility, of course, that a pension guaranty mechanism might prove to be so attractive that employers would convert their nonqualified plans into qualified plans in order to take advantage of the coverage.

Some have questioned whether multiemployer plans should be compelled to participate in the guaranty scheme. The probability of termination is probably lower among multiemployer plans as a group than among single employer plans, which would lessen the need for the guaranty. On the other hand, multiemployer plans are probably funded at a lower level than single employer plans, as a class, which would suggest the need for a benefit guaranty. Many of these plans would have difficulty meeting the minimum standard of funding mentioned earlier, since a substantial percentage only pay interest on the supplemental liability rather than amortizing it. Considerable opposition to compulsory participation could be expected by multiemployer plan administrators. On balance, however, it would seem that the guaranty scheme should be applicable to all qualified plans, whether they be single employer or multiemployer plans.

In order to protect the system, a plan should not be eligible for coverage for the first few years of its existence. Otherwise, an employer, in contemplation of an event that would invoke the protection of the system, could establish a plan with liberal past service benefits and let the PGF assume most of the financial burden. The need for protecting the system against this potentiality would depend on other provisions of the program, including the definition of the event insured against and the benefits that would be entitled to the guaranty. The required length of the probationary period is strictly a matter of judgment but it should perhaps be no shorter than 3 nor longer than 10 years. It is of some significance in this regard that the BLS study of pension plan terminations cited earlier [22] showed that half of the plans examined, terminated within 5 years after establishment.

A question might be raised as to the desirability of excluding from participation in the program plans covering fewer than some specified member of employees, such as 25. There is no doubt that the probability of termination is the highest among the smaller plans. The BLS study revealed that two-thirds of the terminations were accounted for by plans covering fewer than 25 employees. The issue here is whether the program should be structured in such a manner as to cover the area of greatest need or to minimize the financial burden on continuing plans. Clearly, a guaranty program could be surrounded by so many safeguards that it would cover only the most unlikely occurrences, with commensurately low cost to the participating plans. In the light of the other safeguards recommended in this paper, it would seem unnecessary—and socially undesirable—to exclude plans purely on the basis of size.

Another question of considerable moment is whether all plans falling within the eligible group would automatically be embraced in the program or whether the administering agency would have the authority

[22] See footnote 10, p. 209.

to exclude those plans not measuring up to minimum underwriting standards. This is primarily a question of priorities. Is the paramount objectvie the protecting of benefit expectations or the integrity of the guaranty fund? If the participants in the less secure plans are to be denied the protection of the system, much of the latter's value would be sacrificed. On the other hand, employers who are meeting their pension obligations in a realistic and forthright manner can properly object to assuming a portion of the pension obligations of other employers, possibly their competitors. The issue would be blunted if a number of risk classifications could be established, with the premium being roughly commensurate with the risk of plan termination. The problem would also be diminished if the projected cost of the program turned out to be a modest or even negligible proportions.

A related question is whether a plan that falls outside the category of plans that must participate, could be brought within the scope of the program by election of the plan administrator. This should be permitted and encouraged if the aim is to maximize the coverage of the program. On the other hand, the privilege would open the door to selection against the program. Voluntary election of coverage would probably be feasible if a sound underwriting procedure could be devised and enforced.

BENEFITS COVERED

As was stated earlier, the protection of the guaranty fund would extend only to benefits accrued as of the date of plan termination or, more precisely, the occurrence of the event insured against. However, the protection need not extend to all accrued benefits. A distinction might logically be made between benefits credited for service prior to inception of the plan and those that accrued thereafter. If only the latter benefits were to be "insured," the major costs of the program would be eliminated but by the same token much of the *raison d'etre* of the program would be destroyed. The principal problem lies with past service benefits and others granted retrospectively after the plan was established.

Another distinction that might be made is that between vested and nonvested benefits. While the Hartke bills have envisioned the guaranteeing of all accrued benefits and the Javits bill all future service benefits, the current thinking in administration circles seems to incline toward the guaranteeing of only vested benefits. This thinking, however, is apparently based on the assumption that Congress will enact legislation requiring that all benefits vest after 10 years of continuous service irrespective of the participant's age (except that service prior to age 25 could be ignored). The contemplated legislation would provide an orderly transition by requiring only the *vesting* of benefits accruing *after* the date of the legislation but with *recognition* of the years of service *prior* to that date.[23] For example, an employee with 9

[23] In his speech before the American Pension Conference on May 11, 1967, Assistant Secretary of the Treasury Stanley S. Surrey indicated that other transitional approaches were under consideration. One approach would be to require the vesting of all benefits, whether accruing before or after enactment of the relevant legislation, after 20 years of continuous service, with the minimum required period being systematically reduced so that after 10 years the target standard of 10 years would be operative. Another approach would make the 10-year standard effective immediately but only with respect to one-tenth of the participant's accrued benefits, with the percentage grading upward in uniform steps each year and reaching 100 percent at the end of 10 years. Under neither of these alternative approaches would there be any distinction between past and future service benefits.

years of credited service at the time of the legislation would achieve a vested status after 1 more year of service but only the benefits that accrued during the 10th year would be vested. Benefits for all subsequent years would, of course, be fully vested. All employees with 10 or more years of credited service at the time mandatory vesting became effective would be vested in all benefits accruing thereafter. A participant with 5 years of service would achieve a vested status after 5 more years but only with respect to the benefits accruing during the last 5 years and thereafter.

Under this concept the question arises as to whether the guaranty would attach only to the benefits that would be vested under the proposed minimum standard or to those that have vested on a more liberal standard pursuant to the terms of the pension plan. While relatively few plans other than those funded through individual insurance or annuity contracts vest benefits with less than 10 years of credited service many vest past service as well as future service benefits. Moreover, all benefits of retired persons are considered to be vested and all those of employees eligible to retire may be so regarded. Any plan that has had a vesting provision for a number of years is likely to have a greater volume of vested benefits that would be generated by the proposed minimum standard. High governmental sources indicate that the Administration will take the position that benefits vested by plan provisions more liberal than the mandatory minimum should be subject to the guaranty.

Other distinctions among accrued benefits could be justified. In a privately circulated memorandum, an official of a major automobile company proposed that the guarantee attach to all the accrued benefits of persons in a retired status and those within 10 years of normal retirement. With respect to all other employees, the guaranty would attach in annual increments, reaching 100 percent only after the plan had participated in the guaranty program for 10 years.

There would have to be a determination as to the types of benefits to which the guaranty would attach. It is obvious that it would apply to retirement benefits but would it cover death, disability, special early retirement, and other ancillary benefits? It would seem that the guaranty ought to cover only such ancillary benefits that have matured and are in an active-payment status.

It would be necessary to deal specifically with plan liberalizations that increase the unfunded liability of the plan, especially increases in the scale of benefits. The threat to the solvency of the fund is apparent. The guaranty should not attach to newly created benefits for a period of years. It would make sense to impose the same probationary period as that applicable to newly established plans.

It would probably be desirable to place a dollar limit on the benefits that would be guaranteed for any one participant, since there is an element of social insurance in the whole undertaking and some employers would inevitably subsidize the pension plans of other employers to some extent. The limit should be stated in terms of the monthly income provided at a retirement age specified in the law.

IMPLEMENTATION OF THE GUARANTY

The implementation of the guaranty would involve two basic issues: (1) determination of the amount of the PGF's liability and (2) manner in which the guaranty would function.[24]

Determination of the Guarantor's Liability.—The determination of the guarantor's liability would be divided into three steps. The first step would be to ascertain in terms of prospective monthly income the dollar amount of covered benefits accrued as of the date of plan termination. This could present difficulties if the benefits covered by the guaranty are not carefully defined. However, it is assumed for the purpose at hand that the guaranty would be limited to *vested* benefits, including those vested on a voluntary basis. It is further assumed that plans will be required by law to state precisely what benefits are vested, the conditions under which they vest, and how the amount of vested benefits are computed. There should be no distinction between the benefits vested upon termination of employment and those vested upon plan termination except as may be necessary to meet the Treasury requirement that all accrued benefits vest on plan termination to the extent that they are funded. Otherwise inequities may be created as between employees who are laid off in anticipation of the winding up of a business and those who are still employed at the point of technical termination of the plan.

The second step would be to derive the actuarial value of the guaranteed benefits. Procedurally, this would be simple if only basic retirement benefits are vested. Their valuation would involve only mortality and interest (and possibly expense) assumptions. If any ancillary benefits are vested, additional factors might have to be considered. The basic question here would be whether to use the assumptions that had guided the employer's funding policy or the assumptions that would be applied by the agency that would have final responsibility for payment of the benefits—the residual risk bearer. The decision would be influenced or perhaps controlled by the payment mechanism adopted, to be discussed in the next section.

The final step would be to compare the actuarial liability derived in step 2 with the value of the assets considered to be available for the satisfaction of the guaranteed benefits. The law might state that all unallocated assets are to be applied on a first-priority basis to the payment of guaranteed benefits. Presumably it would not direct the recapture of assets used to purchase nonvested benefits from an insurance company or reallocate assets needed to honor benefit commitments to persons in a retired status even when the benefits do not qualify for the guaranty. It might recognize the priorities established in the plan document for the allocation of uncommitted assets in the event of plan termination. Conceivably it might recognize no priorities and thus assume that guaranteed benefits are entitled to only their pro rata

[24] It is assumed for purposes of this discussion that the PGF's obligation would be to assure payment of the guaranteed benefits. If its obligation were limited to the completion of a projected funding program, the amount of its liability would be determined on a basis different from that described herein, but its obligation could be carried out under any of the approaches outlined.

share of the assets. Whatever the concept applied, the theoretical liability of the guarantor would be measured by the difference between the actuarial value of the guaranteed benefits and the value, at book or market, of the assets applicable to those benefits. The actual liability would depend upon the manner in which the guarantor discharges its obligation.

Manner in Which the Guaranty Would Function.—The guarantor could discharge its responsibility in a number of ways, the choice depending to some extent on the nature of the guarantor and to some extent on the manner in which the funded benefits are to be paid out.

It would seem logical that responsibility for the payment of benefits *purchased* from an insurer prior to termination of a covered plan would be retained by the insurer, with future dividends or experience refunds going to the PGF. Legal complications would ensue if any other course of action were to be attempted. Thus, the problem reduces to the procedure to be followed when the plan assets are held in trust or in an unallocated fund with a life insurance company.

One approach would be for the funding agency to retain the assets, paying benefits pursuant to the terms of the plan until the assets are exhausted, with the guarantor then assuming responsibilty for payment of the remaining guaranteed benefits. If the guaranty program were to give guaranteed benefits first claim to available assets, distributions would have to be limited to those persons whose benefit rights were protected by the program, unless the assets appeared to be more than sufficient to meet the priority claims. In the latter event, it would be necessary to divide the assets into two accounts, one being held for guaranteed benefits and the other for nonguaranteed benefits.

This approach would have a number of virtues. The guarantor's liability would be determined on the basis of actual, emerging experience; competitive relationships between and among banks and insurance companies would not be distorted (as might happen under other approaches); it would not be necessary to transfer funds to the guarantor, thus avoiding the risk of liquidation losses and minimizing the asset accumulation of the guarantor—an especially desirable objective if the latter is a governmental agency; and (a minor point) the pensioner would receive only one check per month rather than one from the funding agency and another from the guarantor.

On the negative side, this approach would not lend itself as well as some others to an employee guaranty of an asset deficiency, however it might be formulated. The true deficiency would not be known for many years, by which time the employer might have gone out of business. It would be possible, of course, for the guarantor to levy an assessment on the employer at the time of plan termination in an amount equal to the actuarially estimated deficit. Secondly, potential complications would be involved if it became necessary to divide the accumulated assets between guaranteed and nonguaranteed benefits. The present value of the guaranteed benefits would have to be actuarially estimated and only by sheer coincidence would the estimated and ultimately realized costs be the same. Theoretically, the guarantor should incur no liability but if the cost estimate proves to be too low, it would have to assume the deficit. On the other hand, if the estimate were too high, individuals with nonguaranteed claims would have

been unnecessarily deprived of some of their benefits. A third complication would arise if the trust agreement between the bank and the employer were to call for dissolution of the trust upon termination of the plan, with the assets to be applied to the purchase of annuities. There is no reason why such an agreement could not be enforced if the asset allocation formula were not inconsistent with the guaranty program, since this would immediately fix the amount of the guarantor's obligation. Finally, in the latter stages of liquidation of a trust, liquidity problems could arise, possibly resulting in some otherwise unnecessary capital losses.

A second approach would be for the funding agency to pay that portion of each employee's total guaranteed benefit that could be provided by the assets in its possession, with the guarantor concurrently paying the remaining portion. This would necessitate an actuarial estimate of the benefits that could be paid by the funding agency, with possible discrimination against either the guaranty fund or the individuals with nonguaranteed benefits if the estimates should prove wrong, as would be virtually certain. This method would avoid transfer of funds at time of plan termination and would leave undisturbed existing competitive relationships.

A third approach that would involve approximately the same advantages and disadvantages as the first two would be for the guarantor to transfer to the funding agency the additional sums actuarially estimated to be needed to pay the guaranteed benefits. The benefits would be charged to the pension fund as they were paid, even if the funding agency should be an insurer. In other words, the insurer would not underwrite the benefits, offering only investment and disbursement services. If the sums transferred proved to be inadequate, the guarantor would advance additional funds as the needs manifested themselves. If the sums turned out to be excessive, the funding agencies would be expected to return the unused funds to the guarantor. A delicate question that would be involved in this arrangement would be the extent to which the funding agency could invade the corpus (or fund) for its expenses and possibly a profit. Another—equally sensitive—question would be the extent to which the PGF could influence or direct the policy to be followed by the funding agency in the investment of the moneys entrusted to it.

A fourth approach would be for the funding agency to transfer to the guarantor a sum equal to the assets assumed to stand behind the guaranteed benefits. Unless the assets were transferred in kind, the funding agency should be permitted to spread the liquidation over a period of years to avoid capital losses or other forms of adverse financial consequences. If the employer were to be held responsible for the asset deficiency, the amount of his liability should be fixed at point of plan termination but he should be permitted to spread his payments to the guarantor over a period of years, possibly equal to the remaining years in the original period over which he was to have funded the benefits. In other words, if the employer were supposed to have the guaranteed benefits completely funded within 20 years from plan inception or a later event, and the plan should terminate within 10 years, he would be given 10 years in which to make up the deficiency—as under the original schedule. If he should go out of business before com-

pleting the payments, the unpaid amounts would become a claim against his business assets with whatever preference the law might assign to it.[25]

The guarantor might discharge its obligation in one of two ways. The first would be for the guarantor to act as the risk bearer and pay the guaranteed benefits directly to the claimants as they become due. Any benefit amounts not taken care of by the assets transferred to it from the funding agency would be borne out of the guarantor's general assets. This would be the logical course of action if the guarantor were to be a private agency jointly administered by the private organizations participating in the private pension movement. If the guarantor were a public agency, it might be preferable for it to discharge its obligation immediately and cleanly by the purchase of nonparticipating annuities from individual insurers or a pool of insurers formed for that purpose. Under this procedure there would be no uncertainty concerning the guarantor's ultimate liability, and the amount of the employer's liability, if any, would be promptly and definitely determined. Furthermore, the assets securing the benefit rights would be kept in the hands of private agencies. If the decision were made to deal with individual insurers, appropriate rules would have to be promulgated with respect to the qualifications of the insurers and the process by which the insurers would be chosen. The latter would presumably be on the basis of competitive bids. A different set of procedures would be needed if a pool of insurers were to be used, with safeguards to assure that the rates are not excessive.

Under all these approaches benefits not subject to the guaranty would be paid, to the extent that assets are available, by the funding agency holding the assets at the time of plan termination, unless the trust agreement (or other legal document) specified some other arrangement.

FINANCING THE GUARANTY

The final issue, and a most crucial one, concerns the principles that might be followed in the financing of a guaranty fund. As with the other issues, there are a number of facets to be considered.

The first matter, about which there seems to be general agreement, is the determination of the base or bases to which premium or assessment rates would be applied. If the program were to include specific protection against liquidation losses at time of plan termination, the premiums for that component should be based on the amount of assets in the plan. The premium *rate*, of course, would have to be derived from some estimate of the volume of liquidation losses to be expected and under what circumstances. The risk would appear to be limited primarily to trust fund plans and separate accounts of insurers. Since it is improbable that this particular risk would be separately dealt with in a guaranty scheme, no further attention will be given to it.

The premium base for the fundamental risk that would be involved in the program, namely, inadequate accumulation of assets, should be the unfunded liability for the accrued benefits eligible for the guar-

[25] The concept of requiring the employer to fulfill his funding commitment would be equally applicable to the other approaches described herein, but the implementation of the requirement would differ somewhat.

anty. This, of course, requires a valuation of both the liabilities and assets subject to the guaranty. In the interest of uniformity, the benefits would have to be valued on the basis of the accrued benefit cost method which concerns itself only with the benefits assumed to have accrued, explicitly or implicitly, as of the date of valuation. The projected benefit cost methods take both accrued and future benefits into account and produce results that can be quite different from the values derived by the accrued benefit cost method. More important, certain of the projected benefit cost methods are structured in such a manner that they never produce an *unfunded* accrued liability. Under those methods, the assets on hand plus the present value of future anticipated contributions always equal the present value of total prospective benefits. Thus, for purposes of the guaranty fund, the liabilities would have to be computed on the basis of the accrued benefit cost method, irrespective of the cost method used for funding and other purposes.

Under the accrued benefit cost method, assumptions need be made only with respect to mortality, interest, and possibly expenses. Since the values derived for a particular set of benefits are greatly influenced by the mortality and interest assumptions, especially the latter, it would undoubtedly be necessary, in the interest of equity, for the administering agency to specify the assumptions to be used. The standard might well be based on the nonparticipating annuity rates currently being charged by the leading life insurance companies. The assets would have to be valued on a realistic basis and if liabilities are valued at "market" annuity rates it would seem appropriate to use the market value of assets. The values would be certified by independent or public accountants. The difference between the actuarial value of the accrued guaranteed benefits and the value of the assets allocated by law or plan provisions to the benefits coming under the guaranty, would constitute the premium base.

Another matter, with respect to which there is no clear-cut answer, is whether the system should be financed on the basis of advance premiums, assessments, or a combination of the two. It is essentially a question of whether premiums would be paid before or after the fact. In general, advance premium arrangements are considered preferable to assessment schemes. In this particular case, however, the circumstances would suggest careful consideration of the assessment approach. On the basis of available data, it would be extremely difficult to predict the claims that would arise under a guaranty program. Any scale of premium rates that might be set would likely prove to be excessive or inadequate until claims experience can be accumulated. Moreover, since claims would undoubtedly be clustered in periods of economic adversity, it would be necessary to accumulate substantial reserves. In the minds of some, this would be an undesirable development if the guarantor should be a Government agency.

The assessment approach would avoid the difficulties of estimating claims in advance. The assessments would be based on realized experience, and the claims and expenses would be apportioned over the participating plans in proportion to their respective unfunded liabilities—as under the advance premium method. There could be an initial assessment to provide "working capital" with annual assessments being levied thereafter. The basic objection to the assessment approach would

be that it would not accumulate sufficient funds to meet the claims generated by a severe and prolonged depression. The assessment rate would have to be increased at the very time that the covered firms, as a group, would have the least capacity to respond to the assessment. Some firms might default on their assessment, causing a heavier burden to be placed on the other firms. The financial crisis might be so acute that in order to shift a greater proportion of the claims to the stronger firms, the administering agency might levy assessments on a basis other than unfunded liabilities (for guaranteed benefits). There would also be a question as to whether the amount of the assessments would be determined by the timing of plan terminations, the retirement of the individuals affected, or the actual payment of benefits. If either of the latter two events should serve as the basis for assessments, the wrong generation of plans would bear the burden of past plan failures. Finally, it is argued by some that the assessment approach is wrong in principle, in that the plans that create the losses for the guaranty fund (and by inference were the poorest risks from the beginning) bear the smallest share of the aggregate burden. The plans that terminate the first year, for example, would pay only the initial assessment. It would appear, however, that the same objection could be made to an advance premium plan of insurance to the extent that accumulated reserves do not meet all claims.

A compromise approach would be to charge annual premiums at a minimum level, using the assessment authority to make up any deficits that might arise.

If an advance premium were to be charged, it should reflect the best estimate as to the rate at which claims will occur over a future period encompassing all phases of the business cycle. A study of past business failures should be helpful in this regard. If the analysis indicates that the guaranty fund could be sustained by premiums that would be regarded by the business community as inconsequential, a uniform premium rate should be developed. If the burden would appear to be consequential, it would be desirable to consider a rating structure that would differentiate as to (1) age of firm, (2) size of firm as measured by the most significant indices, and (3) period during which the pension plan has been in operation. The purpose would be to predict, and to reflect in the premium rate classifications, the probability of plan termination among the various business firms covered by the program. It would probably be necessary to place an upper limit on the premium rate for the most hazardous classifications in order not to place an intolerable burden on financially insecure firms.

Finally, it would be necessary to consider a reinsurance arrangement if the guaranty fund were to operate under private auspices. The Government would be the logical reinsurer, and it would be appropriate for the fund to pay a premium for this service. The reinsurance premium might be absorbed out of the regular premium paid by the participating firms or it could be the basis of a separate levy. The program should be self-supporting in the long run even if the fund operates under governmental auspices, but the borrowing power of the Government should be used to meet a short-run excess of claims over accumulated resources.

A Minimum Program

Thus far this paper has concerned itself with the basic question of whether some type of pension guaranty arrangement would be technically feasible and the issues that would have to be resolved if such a program were to be established. It should be clear at this point that a guaranty scheme would be feasible from a technical standpoint if certain conditions were satisfied and adequate safeguards were built into the system. Some of the conditions and safeguards would involve regulatory controls that employers, unions, and other elements of the pension establishment have in general opposed as being potentially detrimental to the continued sound growth of the private pension movement. They would also limit the scope of the arrangement to such narrow bounds that the social objectives underlying the proposal might be frustrated in large part.

Resolution of the fundamental question of whether a properly structured and delimited guaranty scheme should be established is beyond the purview of this paper. That is a political decision that will have to be made by Congress in its wisdom. The contribution of such an institution to the public weal must be balanced against whatever harmful consequences might flow from it. Without taking a position for or against the proposition, the remainder of this paper suggests the characteristics or features that should be associated with any guaranty scheme that might be brought into existence. The proposals envision a minimum program, with the thought that extensions and liberalizations could be introduced as experience with the system indicates the wisdom of such action.

ADMINISTERING AGENCY

The program should be administered by a Federal agency. It would have to be brought into existence by Federal legislation, and it would seem appropriate to enforce the law through a public agency. If there are to be effective remedies for noncompliance with the requirements of the law, the Government should apply them directly rather than through a private intermediary. Moreover, it would be simpler to make the Government the residual risk bearer, as it probably must be, if it acts as the fiscal agent for the program. This recommendation contemplates that private insurers would underwrite the guaranteed benefits of terminated plans, which would minimize the accumulation of assets in the administering agency. In any event, the Federal Government is holding billions of dollars in various trust funds at the present time with no apparent harm to the economy; so the accumulation of a few billion more in a trust fund for private pension beneficiaries would cause no difficulties other than increasing the cost of the program to employers because of the relatively low yields on the Government securities held by the trust fund. Moneys in the trust fund not needed for current operations should be invested in obligagations of the Federal Government not private securities.

EVENT INSURED AGAINST

The guaranty should extend only to benefit claims arising out of complete plan terminations. Coverage of partial terminations would

not only create complex problems of claim adjudication but would open the door to countless forms of abuse, possibly to the point of rendering the system inoperable. It would be almost impossible to define the insured event if various kinds of partial terminations were to be brought within the contemplated coverage. Many of the problems cited by critics of the guaranty fund proposal are centered in the concept of partial terminations. Exclusion of partial terminations would lessen to some degree the social utility of the system but if a reasonable level of vesting is brought about, whether by mandate or voluntary action, the employees in the greatest need of, and with the strongest claim to, the benefit guaranty will enjoy the protection of the system.

Not only should the guaranty be limited to complete plan terminations, it should be invoked only when the firm goes out of business. It would be grossly unfair to other employers, some of them competitors, if a firm could terminate its pension plan, transfer to the guaranty fund the responsibility for making good on the unfunded guaranteed benefits, and then continue in business, its competitive position improved by reduction in its labor costs. This would be comparable to having the Federal Deposit Insurance Corporation assume responsibility for losses to bank depositors while permitting the bank to continue in uninterrupted operation with no loss to itself or its stockholders. If the firm were sold to, or merged with, another company, the surviving company should be required to assume the accrued pension obligations of the acquired firm, at least to the extent they come under the aegis of the guaranty fund. The requirement would be deemed satisfied if the surviving company were to provide benefits under its plan to the former empolyees of the acquired company in an amount at least equal to the unfunded benefits of the plan of the liquidated company.

The lack of protection for benefit rights in terminated plans of employers who continue in business should be rectified by requiring the employer to continue funding contributions in respect of the benefits that would become the obligation of the guaranty fund in the event that the employer should go out of business. The funding would normally continue at the rate prescribed for going plans, but the administering agency should be given the authority to relax (or spread out) the funding contributions in the light of the financial situation of the employer. If the employer should go out of business before completing the funding schedule the unpaid amounts would not become a claim against his assets and the guaranty fund would assume full responsibility for the payment of the unfunded benefits entitled under the law to the guaranty. There would have to be provisions in the law designed to prevent the employer from avoiding his obligations by ostensibly going out of business and then reopening under another name or in another form. If the business were sold or merged, the continuing company would have to assume the funding commitment of the acquired firm. Likewise, if a plan is terminated in order to transfer the participants to another plan, new or existing, the continuing plan should assume the obligations of the old.

The foregoing principles would have to be modified in the case of multiemployer plans. Where more or less permanent employment relationships exist, the guaranty should become operative with respect

to the employees of a particular firm upon withdrawal of that firm from the plan for reasons beyond its control and subject to a minimum period of participation. The guaranty of the PGF would be residual in character if the multiemployer plan had an internal guaranty mechanism. When the plans deals with strictly transitory employment relationships, it would appear that the guaranty could become effective only upon termination of the plan itself. In the meantime, the benefits entitled to the protection of the guaranty should find their fulfillment in the accumulated assets of the plan. While the minimum funding standards outlined in the following sections should be fully applicable to multiemployer plans, it would probably be impracticable to try to enforce the completion of projected funding schedules in the event of plan termination or the withdrawal of a participating firm from a continuing plan, especially in the face of transitory employment relationships.

OBLIGATION OF THE GUARANTY FUND

A pension guaranty fund is feasible only if superimposed on minimum standards of funding. Technically, it would be sufficient if these standards related only to the benefits subject to the guaranty. However, in order to preserve the protection now afforded nonguaranteed benefits through IRS minimum funding requirements and to harmonize the funding requirements of the guaranty system with the cost accrual position of the accounting profession, it is recommended that the law require annual contributions to a pension plan equal to the normal cost of currently accruing benefits—whether or not guaranteed—plus whatever additional sums are necessary to have all guaranteed benefits fully funded within 20 years after the effective date of the coverage. Any additional guaranteed benefits that might be granted *retrospectively* by plan amendment would have to be funded in full within 20 years after such amendment. Evidence that the minimum level of funding is being maintained would be furnished annually or triennially through certification from a member of the American Academy of Actuaries who would be free to choose his own actuarial assumptions and cost method in respect of the nonguaranteed benefits. The administering agency would specify the actuarial assumptions and possibly the actuarial cost methods to be used for guaranteed benefits. This is based upon the assumption that only *vested* benefits would be guaranteed, the valuation of which would require only mortality interest, and expense assumptions. The administering agency should be given the authority to collect delinquent funding contributions, extending into insolvency or bankruptcy proceedings.

As indicated above, the guaranty fund would incur obligations only when a pension plan termination is accompanied or followed by the liquidation of the sponsoring firm except for multiemployer plans. At that point, its obligation would be to assure the ultimate payment of the guaranteed benefits of the plan. That is, its obligation should be stated in terms of *benefit payments* rather than the completion of a *funding objective* per se. The theoretical measure of its obligation would be the difference between the assumed present value of the guaranteed benefits and the value of the assets available for payment of the

benefits. Any benefits already purchased from an insurer would be subtracted from both sides of the equation.[26] The true measure of the obligation would be what it would cost the guarantor to purchase the guaranteed benefits from an insurer or to pay the benefits directly to the eligible recipients.

Stating the guarantor's obligation in terms of benefit fulfillment would suggest that the system should underwrite the entire asset deficiency, whatever the cause. It would surely be appropriate to absorb any deficit arising out of actuarial losses since the guarantor would be dictating the assumptions. The underwriting of capital losses would be a little more debatable if there were no restrictions on investment policy. On balance, however, and in the interest of simplicity, it would seem desirable for the system to cover capital losses also. A deficiency arising out of a retrospective benefit increase or other type of plan liberalization would also be covered so long as the benefits involved come under the guaranty.

In accordance with an earlier recommendation, the guaranty fund would have no recourse against the assets of a liquidating firm, except for delinquent funding payments.

PLANS COVERED

Participation in the guaranty scheme should be compulsory for all eligible plans. Compulsion would be necessary to get adequate participation and to protect the guaranty fund against adverse selection. Eligibility should be limited to plans that "qualify" under IRS regulations, which unfortunately would rule out pay-as-you-go plans whose participants would have the most to gain from a benefit guaranty. There would be little danger to the system in admitting any plan that would voluntarily subject itself to the funding requirements and other features of the system.

Multiemployer plans should be required to participate with whatever modifications might be necessary to fit their particular circumstances. The basic modifications that might be appropriate have been indicated above. Many of these plans could be expected to object to the proposed minimum standards of funding, as well as minimum vesting provisions, but it is highly desirable that these plans meet the same funding and vesting standards as single employer plans.

Plans should be eligible for coverage only after they have been in operation for a minimum of 5 years and presumably should not be forced into membership until they have benefits subject to the guaranty, which could involve a period as long as 10 years. This would greatly reduce the cost of the system and discourage the establishment of plans for the sole purpose of enjoying the benefit guaranty. Almost half of the terminations studied by BLS occurred among plans that had been in operation for 5 years or less. Only a fourth of the plans had been in existence for more than 10 years.

Conventional insurance theory would suggest that all eligible plans should be expected to make application for coverage and demonstrate

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[26] It would be reasonable to require the insurer to amend its contract to provide that future dividends or experience refunds in respect of guaranteed benefits would be payable to the guaranty fund.

to the satisfaction of the administering agency that its financial condition and economic prospects are such as to justify membership in the system. Extension of the guaranty to liberalized benefits would also be subject to underwriting. In practice, such screening would impose a heavy—perhaps intolerable—administrative burden and, more important, would conflict unduly with the social goals of the program. Thus, all qualified plans in operation for more than 5 years at the time the guarantee fund is established should be automatically covered irrespective of the financial condition of their sponsors. Other eligible plans should likewise be automatically covered as soon as they satisfy the 5-year probationary period and have benefits entitled to the guaranty.

BENEFITS COVERED

The guaranty should be limited to benefits vested under the terms of the plan or by operation of law. However, it should encompass not only benefits earned after inception of the plan but also those credited for service prior to that date. It should also extend to all benefits of those employees who have retired or are eligible to retire with normal or reduced benefits. It should not be applicable to those benefits that vest only by virtue of discontinuance of the plan.

In order to assure a minimum level of protection under the program and to prevent complete avoidance of the guaranty by employers inclined in that direction, it would be necessary for the law to require a minimum degree of vesting, applicable to both single employer and multiemployer plans. As was pointed out earlier, there is a strong probability that the administration will recommend legislation that would provide for vesting of future service benefits after 10 years of service, with recognition being given to prior years of service in determining whether the minimum period has been satisfied. Since it would be many years before this legislative mandate would produce a level of funding equivalent to that found in many plans today, it would be desirable for the guaranty to include benefits voluntarily vested under the terms of the plan.

Vested benefits created through a retrospective liberalization of the plan should not be eligible for the guaranty until 5 years after the liberalization. This restriction would be necessary to protect the fund against those who would otherwise grant benefit increases just prior to winding up their business.

The monthly benefits of any particular employee should be guaranteed only to the extent that they do not exceed the lesser of 50 percent of his monthly compensation at the time of plan termination or $500. Ancillary benefits should be guaranteed only if they are in a payment status at the time of plan termination. The amount of such benefits entitled to the guaranty should be reasonably related to the amount of monthly retirement benefit guaranteed under the program.

IMPLEMENTATION OF THE GUARANTY

Upon occurrence of a plan termination coming within the scope of the guaranty, as determined by the administering agency, the guaranty fund would assume full responsibility for the payment of all guaranteed benefits. It would take title to, or assert in some other

appropriate manner its jurisdiction over, the assets in possession of the funding agency assumed to be available for the satisfaction of guaranteed benefits. Its jurisdiction should extend only to unallocated funds, thus excluding insurance or annuity contracts already purchased for specific individuals. This would discriminate somewhat in favor of allocated funding instruments, which may provide for the purchase of nonvested benefits, but the difference in treatment appears unavoidable. It would not seem equitable or to be good public policy to cancel benefits already purchased. On the other hand, it would seem appropriate for the guaranty fund law to specify that vested (that is, guaranteed) benefits, including those payable to retired employees, will have the first claim to all unallocated funds. If all of the funds are not needed to provide for the guaranteed benefits, the excess would remain with the funding agency for application to nonguaranteed benefits pursuant to terms of the plan.

The guarantor should discharge its obligation by purchase of insurance or annuity contracts from a pool of life insurance companies for the full amount of guaranteed benefits. This would fix immediately and irrevocably the amount of funds needed to underwrite the guaranty and, hence, the amount of assets that should be transferred from the funding agency. If there were delinquent funding obligations outstanding against the employer, the guarantor would be authorized and directed to seek collection of these sums from the assets of the liquidating firm, with whatever creditor's preference Congress might see fit to provide. Any sums collected in excess of the deficit originally assumed by the guarantor would be turned over to the original funding agency for application to nonguaranteed benefits.

In order to minimize liquidation losses, the funding agency should be permitted to spread the transfer of assets over a period of time, perhaps up to 5 years. The assets should be transferred in a systematic manner (in installments), with the funding agency having the option at all times of transferring the remaining assets in one sum. Investment earnings on the moneys still held by the funding agency would inure to the benefit of the guarantor.

The pool of insurers from which the guaranteed benefits would be purchased would have to be set up and administered in a manner to assure right of participation by all qualified insurers and to protect the interests of the guaranty fund. Arrangements similar to those established for Federal Employees Group Life Insurance and Servicemen's Group Life Insurance would appear to be suitable. The benefits should be purchased on a nonparticipating basis in order to determine definitely and immediately the magnitude of the guarantor's obligation, thus contributing to an equitable allocation of plan assets between guaranteed and nonguaranteed benefits.

FINANCING THE GUARANTY

The guaranty system should be supported by contributions from employers whose pension plans fall within the scope of the program, the objective being to make the program self-supporting as to both benefit obligations and administrative expenses. The primary source of support should be annual premiums levied on the basis of the unfunded accrued liability for guaranteed benefits. For the purpose of

determining the premium base, the actuarial liability of the accrued benefits would be computed on the basis of annuity rates (reflecting mortality, interest, and expense assumptions) provided by the guarantee fund. These rates should bear a reasonable relationship to the nonparticipating rates for deferred and immediate annuities being quoted on a plan closeout basis by the principal group annuity companies. The assets would be valued at market, the certification being made by a public or independent accountant. Account would be taken of only those assets allocable to guaranteed benefits.

The premium rate should be based upon the best statistical evidence as to the probable rate of termination among the plans covered by the guaranty and the magnitude of the losses that would be sustained by the guaranty mechanism. Technically, there should be rate differentials based upon the age and financial strength of the sponsoring firm but for all practical purposes it would seem appropriate to charge a uniform rate. It might be necessary to have a different rate (or rates) for multiemployer plans if the modifications suggested earlier are made applicable to them. As a general proposition the rate, or rates, should be set at the lowest justifiable level, with the understanding that assessments would be levied to make up any deficits. There should be a limit on the amount of assessments that could be levied in any one year, such as five times the annual premium. The premium rate should be subject to upward or downward adjustment as experience with the program develops.

The guaranty fund should have borrowing authority sufficient to absorb any deficits that might arise in the short run. Deficits of considerable magnitude could develop in the course of a severe depression. If the claims against the funds should reach catastrophic proportions—out of reach of even the assessment authority of the administering agency—the Government should assume an appropriate share of the total burden in recognition of the fundamental nature of the risk.

Summary

Within the last few years, strong interest has developed within certain quarters in some type of cooperative arrangement that would assure the fulfillment of legitimate benefit expectations under private pension plans, irrespective of the financial status of the plans or their sponsors. The concept has found its way into various legislative proposals, some of which are currently pending before Congress.

The Setting

The need for a guaranty arrangement must be evaluated against the background of the limitations on the employer's undertaking in respect of a pension plan. The employer may undertake, unilaterally or pursuant to the terms of a collective-bargaining agreement, to set aside funds on a specified basis, such as an amount per man-hour or man-day of work, without formal reference to the scale of benefits that can be provided by such contributions. The employer's obligation to the plan is completely fulfilled when he pays over the appropriate sums to a funding agency, even though the assets of the plan eventually prove insufficient to provide the level of benefits projected on the basis of the anticipated contributions. On the other hand, the

employer may undertake, voluntarily or in response to union demands, to contribute whatever sums are necessary to provide a fixed scale of benefits set forth in the plan. The benefit formula of such a plan usually recognizes, and gives credit for, some or all of an employee's service performed for the employer in question prior to the inception of the plan, and subsequent benefit liberalizations are frequently given retrospective effect, both practices giving rise to an unfunded accrued liability that would be the primary source of loss to any guaranty arrangement. Except for collectively bargained plans, the employer reserves the right to alter, modify, or terminate the plan at any time and to suspend, reduce, or discontinue contributions whether or not previous contributions have been sufficient to provide all benefits credited to date. It is also customary for the plan to state that the employer's obligation, in the event of plan termination, shall be limited to contributions already made to the plan. In other words, the participants and pensioners must look to the accumulated assets of the plan for the satisfaction of their claims.

In order to meet the benefit commitments, explicit or implicit, generated under a pension plan, the employer generally sets aside funds with a bank or insurance company in amounts and at times roughly commensurate with the rate at which the pension costs accrue, a practice known as *funding*. Under a modification of this practice called *terminal funding* only the benefits of retired employees are funded. In a relatively few cases, the employer pays the benefits directly to retired employees, a method of financing known as current disbursement or pay-as-you-go. Under existing law, an employer is under no legal obligation to fund his accruing pension costs, but if the plan is to enjoy the tax treatment accorded a "qualified" status under IRS regulations, he must as a minimum fund the normal cost of the plan plus interest on the initial supplemental liability. Moreover, under a rule recently adopted by the public accounting profession, the employer must charge to expense his annual pension cost accrual and to the extent that he does not hereafter fund the expense charges, he must reflect in his balance sheet the cumulative excess of charges over funding contributions.

The pattern of accounting charges and funding payments is based upon estimates of future costs prepared by actuaries who make assumptions as to mortality, investment earnings, disability, nonvested withdrawals, salary scales, and retirement ages. It is assumed that normal costs, as determined by so-called actuarial cost methods, will be funded currently and that supplemental costs, if any, will be funded—if at all—over an extended period of time, usually ranging from 12 to 40 years. As of any given time, the assets of a pension plan may be less than the actuarial value of the accrued benefits because of inaccurate estimates of cost, failure of the employer to undertake a funding program that would ultimately meet all costs, lack of time for the completion of a realistic funding objective, or loss of asset values through realized or unrealized capital losses. A pension guaranty fund would be designed to deal with an insufficiency of assets, as respects covered benefits, at time of plan termination or under other specified circumstances.

Applicability of Insurance Concepts

Such an arrangement would be based upon insurance principles, and its feasibility should be tested against the criteria of an insurable hazard. There are (1) large number of homogeneous risks; (2) objective determination of the occurrence and amount of loss; (3) randomness of loss; (4) low probability of loss; (5) significance of loss; and (6) absence of catastrophe hazard. The first criterion would be met if all eligible plans were compelled to participate. The second would be satisfied only if the contingency insured against were clearly—and perhaps narrowly—defined and the benefits to be insured were precisely articulated. Losses would not occur in random fashion unless many safeguards were built into the system. The fourth and fifth criteria would be fulfilled to a reasonable degree, as would the sixth. Losses of catastrophic dimensions could occur during depressed economic conditions but the problem would be minimized by the fact that most of the claims would represent deferred obligations and would not have to be fully offset by assets in the guaranty fund at any point in time. In any event, a temporary shortage of assets could be met by a governmental subvention or loan.

Additional insights into the feasibility of a pension guaranty fund can be gained by examining the essential elements of existing insurance arrangements that fail in one or more important respects to satisfy the conventional concepts of a sound insurance program. Lessons can be learned from the Federal Deposit Insurance Corporation; the various Federal mortgage insurance funds; State guaranty funds to insure payment of automobile, workmen's compensation, and life insurance claims; and State unsatisfied judgment funds to protect against financially irresponsible motorists. In the private sector, credit insurance and performance bonds provide protection against the unwillingness or financial inability of business organizations to meet their obligations, a risk greatly influenced by the economic climate. Then there are a number of insurance programs that involve a partnership of some type between the Federal Government and private insurance agencies. In some of these programs, the private agencies are the sole risk bearers, the Government playing a strictly administrative role. In others, the private agencies furnish only fiscal and claims services, the Government assuming the entire risk. In still other cases, the Federal Government and private insurance agencies have entered into a joint *underwriting* venture under which the Government assumes that portion of the total risk considered to be uninsurable by private agencies. Finally, the Swedish pension guaranty fund, which has been in operation since 1960, provides actual experience with a pension guaranty undertaking.

Issues

Many issues would have to be resolved if a pension guaranty fund were to be established in the United States. The first would be whether the fund, hereinafter referred to as the PGF or the guarantor, would be established and operated under the auspices of a Federal agency, a private agency, or a combination Government-private instrumentality. Any of these approaches would seem to be feasible, the choice depending in part on political philosophies and in part on the financial mechanism envisaged.

The most difficult problem that would have to be confronted would be defining or articulating the circumstances under which the protection of the system could be invoked. The most basic question is whether the guaranty would become operative only upon termination of the entire plan or also upon other occurrences that would adversely affect the benefit expectations of a substantial percentage of the covered employees. Another fundamental question is whether the pension guaranty should be invoked when the firm that created the pension obligations continues to operate in one form or the other, even though the plan has been completely terminated. A plan may be terminated under any number of circumstances that would raise doubts concerning the propriety of transferring to the PGF the responsibility of meeting benefit expectations. The whole matter would be greatly simplified if the guaranty scheme were established on the basis that the sponsoring firm, or its successor, would have the primary legal responsibility of meeting the cost of the benefits covered by the guaranty, the PGF having only the residual liability. Special rules would have to be developed for multiemployer plans, since among other distinguishing characteristics, they have an existence apart from that of any particular employer belonging to the plan.

Another crucial issue would be the nature of the obligation that the PGF should assume in respect of the benefits covered by the guaranty. One concept would call for the PGF to assure ultimate payment of all guaranteed benefits, irrespective of the amount, source, or cause of any asset deficiency that might exist upon occurrence of the contingency insured against. In theory, this concept could be applied without any mandated standards of funding, but it would be far more practicable if it were bulwarked by an enforceable requirement that the covered benefits be funded in accordance with minimum standards concerned with actuarial assumptions, actuarial cost methods, and the period of time allowed for the attainment of a fully funded status. The approach would be even more feasible—but even less palatable to employers—if the sponsor of a terminated plan were made primarily responsible for any insufficiency of assets, with the PGF being only contingently liable. Another concept would limit the PGF's obligation to the completion of the employer's funding program for covered benefits, without regard to the adequacy of the projected contributions. In other words, the guaranty would attach to the *funding* commitment rather than the *benefit* commitment.

A number of questions are involved with respect to the plans that would be brought under a pension guaranty program. The first question is whether participation in the program would be compulsory or optional. If participation is to be compulsory, one must confront the problem of what categories of plans can be forced to come under the system. Other questions would relate to the advisability of excluding from coverage plans that (1) have been in operation less than a specified period of time, (2) have fewer than a stipulated number of participants, (3) can not meet reasonable underwriting standards, and (4) voluntarily seek coverage. Finally, there is the question whether multiemployer plans should be required to participate.

It would be necessary to define the classification of accrued benefits to be guaranteed. Various distinctions could be made. The program

might differentiate as to (1) future service versus past service benefits, (2) vested versus nonvested benefits, (3) mandatorily vested benefits versus voluntarily vested benefits, and (4) retirement versus ancillary benefits. Special rules would be needed to protect the PGF against benefit increases and other plan changes that would enlarge the unfunded liability. Moreover, it would be desirable to place a dollar limit on the monthly benefits that would be guaranteed for any one participant.

The implementation of the guaranty would involve: (1) determination of the dollar dimensions of the PGF's obligation, and (2) a decision as to the manner in which the guaranty would be carried out. If the quarantor's obligation were to assure payment of all guaranteed benefits, its obligation would be measured by the difference between the actuarially computed value of the covered benefits less the value, at book or market, of the assets considered to be available for the satisfaction of such claims. It would be necessary to prescribe or recognize rules for the allocation of assets as between guaranteed and nonguaranteed benefits. If, on the other hand, the guarantor's obligation were to complete the funding program of the terminated plans, its liability would be equivalent to the present value of the remaining payments.

The guarantor's obligation as to *benefits* could be discharged in a number of ways each with its own advantages and disadvantages. The funding agency could retain the assets allocable to the covered benefits, meeting benefit claims as they come due until the assets are exhausted, with the guarantor then assuming responsibility for payment of the remaining guaranteed benefits. Secondly, the funding agency could pay that portion of each employee's total guaranteed benefit that could be provided by the assets in its possession, with the guarantor concurrently paying the remaining portion. Thirdly, the guarantor might transfer to the funding agency the additional sums actuarially estimated to be needed to pay guaranteed benefits, the funding agencies providing only investment and disbursement services. Finally, the funding agency might transfer to the guarantor a sum equal to the assets deemed to stand behind the guaranteed benefits, with the guarantor assuming responsibility for the payment in full of all covered benefits. This it could do by paying the benefits directly to the claimants as they come due or by purchasing nonparticipating annuities in the proper amount and form from individual life insurers or a pool of insurers formed for that purpose. Any of the foregoing approaches could be used, with modifications, to discharge a guaranty expressed in terms of a *funding* objective.

The basic issue in the financing realm is whether the guaranty fund would be supported by advance premiums, assessments, or a combination of the two. The use of the advance premium approach would necessitate estimates of future claims and the accumulation of substantial reserves. The assessment method would avoid these complications but would have offsetting disadvantages. Under both approaches, it would be necessary to establish a base against which to levy premiums or assessments and to decide whether to create a number of risk classifications. The need for reinsurance facilities would also have to be considered under either approach.

A Minimum Program

A pension guaranty arrangement would be technically feasible if certain conditions were satisfied and adequate safeguards were built into the system. Some of the conditions and safeguards would involve regulatory controls that employers, unions, and other elements of the pension establishment have in general opposed as being potentially detrimental to the continued sound growth of the private pension movement. They would also limit the scope of the arrangement to such narrow bounds that the social objectives underlying the proposal might be frustrated in large part.

Resolution of the fundamental question of whether a properly structured and delimited guaranty scheme should be established is beyond the purview of this paper. If such a program should be deemed to be in the public interest, it is suggested that it be structured initially along the lines set forth hereafter, with the thought that extensions and liberalizations could be introduced as experience with the system indicates the wisdom of such action.

The program should be administered by a Federal agency with the necessary enforcement powers and the authority to serve as residual risk-bearer if circumstances demand it.

The guaranty should extend only to benefit claims arising out of complete plan terminations, being further limited to those situations in which the sponsoring firm goes out of business. The lack of protection for benefit rights in terminated plans of employers who continue in business should be rectified by requiring the employer to continue funding contributions in respect of the benefits that would become the obligation of the guaranty fund in the event that the employer should go out of business.

The fund should undertake to assure payment of all guaranteed benefits, irrespective of the source of the asset deficiency. However, this obligation should be protected by a legal requirement that all covered plans be funded at a rate sufficient to meet the currently accruing cost of all benefits (whether or not guaranteed) and to have all guaranteed benefits fully funded within 20 years after the effective date of the coverage. Firms that terminate their plans before completing this funding objective would be expected to continue their funding payments until their funding commitment is fulfilled.

Participation in the program would be limited to "qualified" plans, which would be compelled to come under the program as a condition for qualification. Plans should be eligible for coverage only after they have been in operation for a minimum of 5 years, but there should be no other underwriting requirements. Specifically, there should be no minimum size requirement. Multiemployer plans should be expected to participate, subject to appropriate modifications in the definition of the insured event and possibly the premium rate.

The guaranty should be limited to benefits that have vested under the terms of the plan but the law should require both single-employer and multiemployer plans to provide a minimum degree of vesting. Vested benefits created through a retrospective liberalization of the plan should not be eligible for the guaranty until 5 years after the guaranty. There should be a limit on the amount of monthly income that would be guaranteed in respect of any one individual, the amount being defined in terms of payment at an age specified in the law.

Upon termination of a covered plan, the guarantor should take title to the assets in possession of the funding agency assumed to be available for the satisfaction of the guaranteed benefits. It should then discharge its obligation by the purchase of nonparticipating insurance or annuity contracts from a pool of life insurers for the full amount of guaranteed benefits. This would fix immediately and irrevocably the amount of funds needed to underwrite the guaranty and, hence, the amount of assets that would have to be transferred from the funding agency. In order to minimize liquidation losses, the funding agency should be permitted to spread the transfer of assets over a period of time.

The guaranty system should be supported by contributions from employers whose pension plans fall within the scope of the program, with the objective of making the program self-supporting as to both benefit obligations and administrative expenses. The primary source of support should be annual premiums levied on the basis of the unfunded accrued liability for guaranteed benefits. For the purpose of determining the premium base, the actuarial liability of the accrued benefits would be computed on the basis of annuity rates (reflecting mortality, interest, and expense assumptions) provided by the guaranty fund. There should be provision for assessments, within stipulated limits, to meet costs not covered by the regular premiums. The guaranty fund should have borrowing authority sufficient to absorb shortrun deficits and should be empowered to assume an appropriate share of the total burden on a continuing basis if claims should reach a level beyond that which could be supported by reasonable contributions from the participating firms.

AN ANALYSIS OF PROPOSALS FOR IMPROVING THE FUNDING AND FINANCIAL MANAGEMENT OF PRIVATE PENSION FUNDS

BY PETER O. DIETZ* and H. ROBERT BARTELL, JR.**

The recent report, "Old Age Income Assurance: An Outline of Issues and Alternatives," prepared for the Joint Economic Committee puts forth several suggestions which, if adopted, would greatly influence the funding and investment management of private pension funds. These suggestions would affect the size and certainty of retirement incomes for a large proportion of the population and the employment costs of most corporations. The particular suggestions we have reference to are those regarding removal of public incentives for funding of private plans,[1] revision of funding requirements,[2] government-sponsored reinsurance of plans,[3] and regulation of fund managers and their investment decisions.[4] The purpose of this paper is to summarize our reactions to these proposals recognizing that they will undoubtedly be covered individually at some length in other papers prepared for the committee. In concluding, we present what we judge to be reasonable proposals for altering the present arrangements for funding and fund management.

The report suggests that private pension plans be discouraged through the elimination of tax deductibility for contributions and tax exemption for fund income. This would certainly reduce the incentive for establishing new private plans and expanding present ones. The outcome would ultimately be to generate additional pressure for expanded benefits and coverage under OASDI. Eventually we could envision the withering away of the private pension system if tax incentives were eliminated and the social security system enlarged.

The question of whether the Nation would be served best by a predominantly public retirement system or a mixed, public-private system, as we have at present, is one too complex to be argued in depth here. Our own preference is for the present system with some modifications. This preference is influenced by (1) the high value we place on the freedom to choose various levels and combinations of benefits under private plans, (2) the belief that pension fund savings add to total saving and thus enlarge the fund of capital necessary for economic and social advancement, and (3) the conviction that primary reliance on decentralized investment decisions will lead to more effective use of such capital. Assuming this preference for a vigorous

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[1] U.S. Congress, Joint Economic Committee, Subcommittee on Fiscal Policy, *Old Age Income Assurance: An Outline of Issues and Alternatives*, U.S.G.P.O., 1966, pp. 5–7, 31.
[2] *Ibid.*, pp. 17–18.
[3] *Ibid.*, pp. 29–30.
[4] *Ibid.*, pp. 22, 30.

private component in a mixed system is held by the majority of those concerned, there are still important considerations as to how the present system might be improved through public policy.

I. Funding

A major question raised is whether or not present funding arrangements for private plans should be changed. On the one hand some observers propose an increase in funding requirements, while others question the necessity for the current level of funding in the majority of plans. Which of these views should national policy encourage? It is true that there is little need to fund a tax supported plan such as OASDI. The same thing might be said for private plans taken as a whole. Theoretically it is surely correct that there is little need for funding beyond a small liquidity reserve for plans sponsored by growing industries and companies. Under such circumstances pensions can be paid out of future earnings. On the other hand, declining industries and firms should have fully funded plans. Since there are always declining industries and firms, if companies are to be treated alike, national policy should require full funding of all plans for employees to be protected properly. If companies are to be held to different funding requirements, how would one go about deciding which firms will grow and which decline? The U.S. economy is dynamic, and, therefore, it is difficult to forecast with certainty which companies and industries will grow for a 5- to 10-year period ahead let alone for the period of a 30- or 40-year pension obligation.

Today most financial analysts and economists would undoubtedly agree that the telephone-communications industry and the air-transport industry are growing; therefore, no funding should be necessary. Fifty years ago similar agreement would have concluded that funding was unnecessary in the traction, coal mining, railroad, and telegraph industries. Today the private traction industry is virtually dead, employment in railroads is declining and a major company in the telegraph industry faces financial problems because of the lack of a funded pension plan. Funding protects retirement income of workers several decades away, and it would be unwise to base a funding policy on the presently anticipated growth of individual firms or industries. Therefore, all plans should be as fully funded as financial resources permit unless there is a universal reinsurance program for all liabilities. Such a reinsurance program, we believe, is undesirable for reasons indicated below.

It has been argued that full funding leads to excess savings in the economy and overly conservative investment policies. To suggest that the economy is subject to oversavings is to take a narrow view. Worldwide needs for capital are undoubtedly far in excess of savings. The problem is not one of excess savings but rather one of developing effective channels of investment. Indeed, it has been argued that the growth of pension fund assets has provided a major impetus to the development of U.S. capital markets.[5] The need for worldwide investment is so great that the U.S. has had to put restrictions on the

[5] For further development of this argument see: Sidney E. Rolfe, *Capital Markets in Europe*, sponsored by Atlantic Community.

movement of capital to limit balance-of-payments deficits. Although it may be argued that foreign investment is too risky for pension fund assets, growth in pension systems can release other assets for international development.

There is the further evidence of capital shortage in the secular rise in long-term interest rates over the last two decades. It is hardly necessary to point out the tremendous capital needed in the future for the profitable development of space, underwater technology, urban renewal, and transportation and communication facilities, to mention just a few capital intensive areas of the American economy.

The question remains as to whether or not the funding of pension plans will lead to more efficient allocation of capital than would occur with a pension system financed primarily on a pay-as-you-go basis with reinsurance. The funding of pension plans places retirement savings in the hands of financial institutions whereas in nonfunded plans the savings are invested by the sponsoring corporations.[6] Since financial institutions are free to invest in a full range of alternatives, aggregate productivity of capital should be greater than if funds were invested solely in the assets of the company sponsoring the plan. Tax-deductible pension contributions and tax exemption for fund earnings foster the establishment of funded plans and thereby improve the capital allocation process.

The argument that national economic goals are fostered through financial intermediary channels rather than through direct corporate savings can only be supported if the investment managers do a good job of allocating capital. Some indication of this is given in table 1 which shows the portfolio composition of various types of pension funds at the end of 1966. Corporate noninsured funds have been most aggressive in terms of common stock investments while multiemployer and union plans have been more aggressive in the mortgage market. State and municipal funds historically invested primarily in various Government obligations. Thus their record in terms of aggressive capital investment has been poorest of all. Insured pension funds are heavily committed to corporate bonds and mortgages due to legal restrictions, but have been turning more to equities as these restrictions are liberalized.[7] If there is to be an indictment of pension fund investment, it is that too much emphasis has been placed on fixed-income obligations whereas investment objectives indicate very little need for fund liquidity. However, the record has been improving and, as will be pointed out in the section on investment management, will continue to improve if properly fostered.

Further evidence concerning the quality of investment management and the productivity of pension fund assets is found in a preliminary report of a research study of pension fund investment management by the Financial Executives Research Foundation.[8] This re-

[6] We are not arguing that corporations bear the cost of pensions. Under various circumstances, the costs may be shifted to employees, customers, stockholders, or the taxpaying public. We are concerned here with who holds the assets from which future benefits will be drawn. It seems unlikely that a company with an unfunded plan would pay higher wages or charge lower prices than if it had a funded plan. Thus, no matter who ultimately bears the cost of the benefits, the company with an unfunded plan should end up with more resources to invest.

[7] Insured pension funds are not shown in table since investments are not reported separately from other insurance company assets.

[8] Dietz, Peter O., "Measuring Rate of Return on Pension Funds," *Financial Executive*, July 1966.

TABLE 1.—PORTFOLIO COMPOSITION OF NONINSURED PENSION FUNDS, 1966 (PERCENTAGE OF BOOK VALUE)

	Dec. 31, 1966		Fiscal year 1966, State and local government
	Corporate	Nonprofit and multiemployer	
Total assets (billions of dollars)	$58.7	$5.8	$35.2
	Percent	Percent	Percent
Cash and deposits	1.1	4.0	0.9
U.S. Government securities	3.7	7.7	19.9
State and local governments	0	0	7.1
Corporate bonds	38.2	37.1	50.3
Corporate stock	46.7	30.1	5.1
Mortgages	4.9	16.3	11.6
Other assets	5.4	4.8	5.1
Total	100.0	100.0	100.0

Source: U.S. Securities and Exchange Commission, "Private Noninsured Pension Funds, 1966," release No. 2219. Bureau of the Census, U.S. Department of Commerce.

port shows that average annual rates of return for 20 corporate noninsured funds ranged from 5.4 to 9.6 percent with the median return 6.7 percent for the 5-year period, 1959–63. If one looks at the annual returns of common stock investments in these same portfolios the rates range from 8.1 to 15.3 percent with a median of 9.4 percent. The same report indicates median annual common stock returns of 22.3 percent for the 5-year period, 1954–58, and a median stock return of 16.1 percent for the period 1954–63.

II. Reinsurance

Among the most interesting suggestions now before the Congress of the United States are various proposals for reinsuring pension plans. Although a complete analysis of reinsurance is beyond the scope of this paper, we would like to examine the effect on pension fund investment of various forms reinsurance might logically be expected to take.

It is vital to recognize that on a total basis reinsurance premiums cannot pay pension benefits. Benefits can only be paid out of the assets of the plans. Therefore, in the long run, funding provides the best method for covering the costs of pensions from the employers point of view as well as providing greater security for the employee. The now well-known *Studebaker* case is usually cited as an example of the need for reinsurance. Had the UAW and the employer insisted on more adequate funding in relation to promised benefits, the Studebaker difficulties would have been less serious. Undoubtedly, one of the great dangers of the reinsurance concept is that it may be relied on to provide security for an ill-conceived or deliberately underfunded pension plan. For example, some companies may consider the funding of a given level of benefits as more costly than the premiums for reinsurance of the same benefits, and, therefore, minimize funding. To the extent that reinsurance is used in place of sound funding, the security of private pension promises will be weakened.

The practical problems involved in the development of a reinsurance system are many. Two of the most difficult, the problems of which risks are to be insured and the question of an equitable premium rate structure are directly related to investment management.

To be insurable, a risk must encompass a large number of homogeneous risks, the incidence of loss must be spread randomly over time and probable total losses should be calculable.[9] Although there are a large number of pension plans it is not clear that the risks associated with each are homogenous. There are distinct differences in the degree of probable loss among plans. This will cause different, although not insurmountable, problems in determining an adequate and equitable premium structure. A much more serious problem, however, is that pension losses, whether either benefits are guaranteed or plan assets are insured, are not likely to be random through time. That is losses would tend to cluster in times of economic stress.

An adequate insurance program where the risks being covered are neither homogenous nor random will almost surely have to depend on Government support. Since risks are not homogenous it will be necessary to require all plans to participate in order to avoid the problem of adverse selection. Even with a premium structure supported by low risk plans, the Government will have to be prepared to finance the plans in case of catastrophic losses.

It is generally agreed that any feasible reinsurance plan would insure liabilities and not assets. However, the question of providing protection against the contingency that assets in the pension fund will decline in value has also been raised. To insure either real or paper assets against value erosion is akin to insuring the value of the assets of all firms in the economy. To insure the assets of all productive enterprises in the economy against dynamic risk is unthinkable since no one could ever determine the potential losses.

One system of insurance based on assets might be an arrangement which discounted assets to reflect the probability of decline in value. For example, assets held in cash or Government securities might be assumed to have no discount. Corporate bonds might have a 5 percent discount, while corporate stocks or real estate might be discounted at 25 percent. The problem of setting the discount should be enough to discourage such a system. But the potential effect of such a system on the capital markets could be unwelcome. The insuring agency would be placed in the position of de facto regulation of investment policy for all pension funds. This is the very antithesis of what a free investment market demands. For this reason, section 402 of the Javits bill, "Pension and Employee Benefit Act of 1967," dealing with foreign securities is too restrictive. Since we find no way of insuring assets we would conclude that if a plan had assets equal to the vested liabilities of the fund, no insurance would be necessary.

We turn now to the question of insuring the liabilities of the plan. As we have just indicated, there is no need to reinsure liabilities which are covered by assets. Thus only unfunded liabilities need be insured. The category "unfunded liabilities" is often vague and includes liabilities which may never have to be paid. Contrast this with the deposit liabilities of commercial banks, and savings and loan associations which are always precisely determinable, and, therefore, more readily insurable. Therefore, it is suggested that the maximum insurance coverage would be confined to unfunded vested liabilities.

[9] See Dan M. McGill, "Guaranty Fund for Private Pension Obligations," p. 199 in this compendium.

The term vested liabilities is more readily definable by actuaries than unfunded liabilities. However, even when attempting to define unfunded vested liabilities, a determination must be made of the assets in the fund. Here, two choices are readily apparent: book value of assets or market value.

Given this choice, market values are clearly preferable. Book value may have no relationship to the economic value of the fund. At the end of 1966 the market value of the assets of private noninsured pension funds was $6.4 billion (or 10 percent) greater than book value. To use book value would generally punish those trusts that had done the most effective investment job. Moreover, only admitting book values would lead to putting a premium on fixed-income rather than equity investment. This would tend to reduce return on investment over the long run and increase pension costs.

The choice of market values is not without problems. In the first place, market values tend to fluctuate so that the amount of insurance to cover unfunded vested liabilities would fluctuate, and generally be greatest when losses are high. Secondly, valuing assets at market values could lead to unnecessary investment speculation by unprincipled fund managers. For example, assume a pension plan in which vested liabilities are far greater than admitted assets. The plan could be fully insured by the use of reinsurance schemes. Meanwhile risky investments could be made in the expectation of rapidly increasing asset values without the normal contributions needed to properly fund the plan. If the investments worked out, this would be fine, but if not, the reinsurer is left holding the bag.

Although the concept of reinsurance might be politically attractive, it introduces unnecessary economic problems in the private pension field. First, the problem of preventing potential abuses has been pointed out. Secondly, there is the problem of defining liabilities and assets. Third is the potential adverse effect such a system would have on the investment practices of pension trust. Finally, there is the question of setting equitable premiums. More than likely, the best financed plans will need little or no insurance. New and poorly financed plans would need the most reinsurance. These are exactly the plans that need to be insured, so the system will run great risks of adverse selection and could easily become bankrupt unless soundly financed plans are inequitably "taxed" to pay for defaults. In the absence of irrefutable evidence that reinsurance is necessary and practical, national policy demands that we strengthen funding requirements rather than adopt a reinsurance system.

III. The Present Financial Management System

In this discussion of financial management we assume that in the foreseeable future there will be no major changes in the financing of private pension plans. That is, like today, each will invest its own funds with only general rules imposed as to the disclosure of assets. In this sense then we strongly support the conclusions of the President's Committee on Corporate Pension Funds that, "in view of the wide legitimate differences regarding the most advantageous balance of retirement funds investments, the committee does not believe it

would be desirable on the basis of evidence to date to require conformity to a prescribed rule with respect to the proportion of stocks to other investments." [10]

The question then which might be legitimately asked is whether or not the present system of private investment provides sufficient safeguards for employee-beneficiaries, and whether the invested assets are producing returns which reflect efficient management.

The great majority of plans are financed by employer and employee contributions which are invested by one or more third-party fiduciaries. This third party is variously an insurance company, bank trustee, or investment counselor. Thus a dual system has been created. This arrangement has as its major advantage the fact that the fiduciary's first responsibility is the preserving the corpus of the fund. That is, the fiduciary represents the beneficiary in assuring the financial integrity of the fund. On the other hand, the fund sponsor has the responsibility for selecting the trustee. This gives the sponsor, whether it be a corporation or joint union-management board, the right to measure investment results and the attendant right to change the trustee if the investment results are unsatisfactory. The dual system thus provides the necessary balance between the sponsor's desire to lower costs of the plan by increasing return on assets and the need to preserve the assets in the fund. The record shows that where defaults on pension promises have occurred it is due to either inadequate funding or malfeasance, not poor investment management. Such a system of dual control puts a premium on high rates of return which can be used either to reduce contributions or to increase benefits or both, without incurring excessive risks. The pressure on fiduciaries to earn adequate rates of return will assure the efficient investment of the economy's pension fund saving.

Another major advantage of the private system as it is presently structured is that each fund is an entity of its own. This provides flexibility to tailor each fund's investments to its own needs that no other system could provide.[11] While it is a well-known fact that most pension funds need little liquidity because contributors are greater than benefit payments, this is not so for mature or declining funds. The amount of liquidity risk which can be taken depends on the spread between contributions and benefit payments. This clearly differs among funds.

The question of what portion of the fund can be invested in variable-income assets is still a matter on which experts may disagree. However, one approach which may be used is to invest that portion of the assets needed to cover earned benefits of retired employees with secondary reserves invested in fixed income assets. The remainder could then be invested in riskier assets. Clearly these characteristics would differ from fund to fund. Since liabilities can change as plans mature or alter benefit provisions, a financing mechanism is needed which can reflect these changes. Such changes can be made much more quickly

[10] "Public Policy and Private Pension Programs," President's Committee on Corporate Pension Funds and Other Private Retirement and Welfare Programs, U.S. Government Printing Office, January 1965, p. XV.

[11] This is not precisely true for all insured plans. However, recent developments leading to segregation of pension fund from other insurance company assets make this flexibility more nearly attainable.

on a single fund basis than could ever be accomplished under a universal system.[12]

The system of private investment will work and improve only as long as techniques for measuring investment performance are adequate. The sponsor must have a fair and accurate method for determining investment excellence. Progress in the field of performance measurement has been rapid in recent years.[13] Work in this area is continuing under the offices of such noteworthy financial groups as the Financial Executives Research Foundation and the Association of Bank Audit Control & Operation. These groups are concerned not only with measures of return but with improving methods for measuring risk as well. As these extensive research efforts are concluded the ability of sponsors to measure results and for trustees to appraise their own performance will improve. The result is bound to increase competition among fiduciaries to improve investment practice and provide superior investment management.

IV. Recommendations

1. We have pointed out that funding is necessary to protect the rights of individual employees. In this regard, we fully support the funding recommendations of the 1965 report of the President's Committee. However, we would go further and suggest that the maximum time to amortize unfunded liabilities be reduced to 20 years for plans over 5 years old and 25 years for plans under 5 years of age. This will somewhat reduce funding requirements for new plans where costs may be excessively high. Any new past service costs as a result of benefit increases should be amortized in not more than 20 years for all plans. We prefer to see less benefit promises and more assurance that those that are promised are paid.[14] This is entirely in keeping with the concept of private pension plans as supplementary to the minimum retirement benefits provided by OASDI. Furthermore, we highly recommend that the present minimum funding period imposed by the Internal Revenue Service be dropped. We see no economic justification for restricting contributions for the funding of past service benefits. To avoid the capricious use of these contributions to reduce taxes, a company making payments in any given year in excess of the required 4 or 5 percent reduction of unfunded liabilities must reduce any remaining portion of these liabilities in subsequent years at the 4 or 5 percent minimum. This would eliminate the practice of making large contributions in some years followed by no contributions for several years.

2. We have shown that the development of a dual management system provides the necessary balance between return on investment and safety. It is strongly urged that all plans be managed in this manner and it is recommended that all new plans be placed under dual management to be qualified for IRS pension plan treatment.

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[12] For a further discussion of differing investment goals of pension funds, see: Dietz, Peter O., *Pension Funds: Measuring Investment Performance* (The Free Press, New York, 1966), chapter III; and Sieff, John A., "Construction of a Retirement Fund Portfolio," *Financial Analysts Journal*, July–August 1965.

[13] For example: Dietz, Peter O., op. cit.

[14] We are not arguing that all plans are underfunded, but only that some plans need to raise their level of funding. To improve the certainty of benefit promises, higher minimum funding requirements are an alternative to reinsurance.

However, it is a well-known fact that some of the oldest and best managed plans are company run. To protect these plans a grandfather clause to this provision is recommended. In these special cases moderate investment restrictions may be desirable. For example, only 4 or 5 percent of assets should be invested in any one security; liquidity reserves for all accrued liabilities for those retired under the plan may be desirable. The remainder of the fund might be invested in any assets subject only to the 4- or 5-percent rule. These moderately restrictive rules would be sufficient to protect employees in these special cases and at the same time impose no investment penalty on most of the so-called company or union run plans.

3. As a further safeguard of employee interests, investments in securities of the sponsor or trustee of a pension plan (or a profit-sharing plan which is intended primarily to finance pension benefits) should not be permitted. Although some such investments have been successful in isolated cases in the past, there is no economic justification for them. Such investments are always subject to potential abuse and the possibilities of self-dealing. This provision would include any securities and/or real estate and should apply to all plans whether company or union sponsored. Although the Federal Government would probably have no jurisdiction over State and municipal plans, the same principles should apply and they should refrain from purchasing securities of their own taxing districts.

There is one and only one possible exception to this provision. That is the unusual case of a company that for some reason does not have cash to meet funding requirements. In such cases companies have been known to contribute securities of some form. Although we do not believe such contributions are in either the company's or the employee's best interest, it is better than no contribution at all. In order to maintain qualified status such securities should be liquidated in not more than 5 years, and if a reinsurance scheme were to be developed, in no case should such securities be included as admitted assets.

4. As another measure for improving the effectiveness of the dual system of sponsor-trustee control, we would urge that each fund be required to report annually to the Department of Labor a complete listing of its security holdings. This would represent only minimum interference with the carrying out of investment programs while providing the necessary data for monitoring investment performance. Competition among investment managers would be encouraged thereby, and this would enhance the operation of the system rather than detract from it, as some have suggested. Experience with the New York State Disclosure Act which requires such reporting and the voluntary disclosures of some funds indicate that this places no undue burden on the fund or trustees. This information would also serve to improve the level of debate regarding the potential dangers of concentrating control over corporate enterprises in the hands of trustees.

These recommendations have been made with the expectation that they will strengthen the private pension plan movement by increasing the security of employees covered under these plans and by encouraging a free and dynamic system of pension fund investment which will reduce pension costs and be reasonably free of any possibilities of self-dealing or malfeasance.

CORPORATE FIDUCIARIES OF EMPLOYEE BENEFIT FUNDS

BY C. WADSWORTH FARNUM*

AN OUTLINE OF RESPONSIBILITIES AND SUPERVISION

It is generally acknowledged that the banks in the United States have a very great responsibility for the management and safeguarding of pension and profit-sharing funds under private, tax-qualified plans. Banks serve as trustee for more than two-thirds of all accumulated reserves under such plans amounting to more than $70 billion. We respectfully submit that an examination of the legal responsibilities and the safeguards to protect the interests of beneficiaries is appropriate to a study of "Old Age Income Assurance." Especially is this so in the light of the number of proposals before Congress concerning audits, disclosures, financial statements, and standards of fiduciary conduct relating to trust funds. This statement is intended as a broad, general outline of how pension and profit sharing plans are handled by bank trustees for the protection of interested parties.

INTERESTED PARTIES

Banks are considered quasi-public organizations. They are entrusted with the handling of the funds of the public in a number of very important capacities. The savings and checking account are the best known of their services, and the larger banks have been handling personal trusts and estates for years. It was not surprising that at the very outset employee benefit funds gravitated to the banks. We in Bankers Trust Co. have been serving as trustee of employee benefit funds for 40 years, and other banks have also had a long and successful experience as trustees of such funds.

We, and other banks that act as trustee, appreciate the importance of the trust placed in us and recognize the broad social and economic areas affected by these funds:

1. The trust fund is the primary source to which an employee must look for his benefits upon retirement or other termination of service. This is especially significant to an employee if his company should go out of business, or, if, because of financial circumstances or other reasons, the plan is discontinued.

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AUTHOR'S NOTE. This paper concentrates on an important aspect of "Old Age Income Assurance System"—the aspect of the procedures and safeguards of corporate fiduciaries in their handling of employee benefit funds. Because corporate fiduciaries manage more than two-thirds of the accumulated reserves under private employee benefit funds, we believe that a thorough understanding of the corporate fiduciary and its function is a necessary part of the study.

2. The company has an interest in the soundness of fund investments since the results directly affect its employee-employer relations and an unfavorable experience can result in an increase in future costs or in a reduction in benefits payable to employees.

3. There is a genuine public concern with what happens to participants' benefits after retirement or other termination of employment.

4. While the study is primarily one dealing with "Old Age Income Assurance," the economic aspect of the large amounts of savings that are being accumulated in these trusts is very important to the country. Aside from the immediate effect, the constructive investment of these funds will influence future productivity of industry which is the ultimate source from which benefit payments will be made to employees under these plans. (Papers will be presented by other authors which will discuss this subject fully.)

5. In multiemployer-union plans, a board of trustees (representatives of employers and the union) has the direct responsibility for supervising the plan. If a bank is used as an ancillary trustee for handling funds of the plan, the relationship between the bank and the board of trustees is similar to that which exists between the bank and the company in single employer plans. (In the interest of brevity, the discussion is confined to the bank-company relationship in single employer plans.)

We believe that the extent of existing governmental, legal and internal safeguards of pension and profit sharing funds held by bank trustees for the protection of these varied interests should be seriously considered in any new study of the need for new legislation.

FIDUCIARY RESPONSIBILITY

In the report to the President on private employee retirement plans, the Committee stated that "the general standards of conduct for any trustee have been long established by law and custom. These include the degree of prudence that must be exercised in investing the funds of others. Similarly, transactions that unfairly benefit other parties at the expense of the trust constitute unfaithfulness on the part of the trustee and may provide a ground for legal proceedings under State laws by the employer-grantor against the trustee."

The time-tested standard is that a trustee is required to employ such diligence and such prudence is in the care and management of trust property as in general prudent men of discretion and intelligence employ in their own affairs. A bank trustee may in some important respects be held to an even higher degree of care since it holds itself out to be an expert and because it is better equipped than the ordinary man. (Scott on Trusts, sec. 174–1.)

The trustee has an undivided loyalty to the trust. The typical employee benefit trust is a dedicated fund to be held and managed for the benefit of employees and their beneficiaries, and the trustee is required to measure each action taken in the trust in terms of whether it serves this dedicated purpose. Section 1.401–1(a) (3) (iv) of the Treasury Regulations provides the following in relation to employee benefit trusts which seek the tax advantages of a qualified trust:

"It must be impossible under the trust instrument at any time before the satisfaction of all liabilities with respect to employees and their beneficiaries under the trust, for any part of the corpus or income to be used for, or diverted to, purposes other than for the exclusive benefit of the employees or their beneficiaries."

A specific provision incorporating this language or similar language will be found in the trust agreement of all qualified employee benefit trusts, and the bank on becoming trustee accepts the responsibility for carrying out this provision in relation to its management of the trust fund. The consequences for failure to comply with this requirement can be considerable. It can result in a breach of trust with potentially severe penalties. It can also result in loss of the tax-exempt status which may be costly to the company and in some plans may reduce the benefits accruing to employees. Thus, it is in the self-interest of the trustee, the company and the employee to make very sure that this requirement is fulfilled.

ACCOUNTABILITY TO THE COMPANY

In the typical employee benefit trust, the interest of the company is closely allied to the interest of the trust and the employees. A good employee-employer relationship is valuable to the well being of the company, and employee benefit trusts have become an important part of this relationship. As mentioned previously, the company is concerned with the soundness of fund investments and the good management of the trust.

In our experience with employee benefit trusts and in the experience of other banks, the company is taking an increasing interest in checking, auditing and appraising the work of the trustee:

1. It has become universal practice for the banks to give the company a statement at each month end of all receipts, disbursements, investment changes, and other transactions in employee benefit trusts during the month.
2. The bank also renders a formal annual accounting to the company after each year end covering all of its activities during the year. This annual accounting is usually the basis of the financial statements on the trust which are made available to employees and which are filed annually with the Internal Revenue Service, the Department of Labor and other governmental agencies.
3. The bank's records of an employee benefit trust are open to examination by the company and its auditors at all times.
4. As a result of various research projects, accepted methods are being established to measure the investment performance of employee benefit trusts.

In the typical employee benefit trust, the company has reserved the right to remove the trustee and to appoint a successor. Most companies recognize that a very real responsibility goes along with this right, and they have internal procedures for following the transactions of the trustee currently, they require that their independent auditors review the records of the trust, they meet with their trustee periodically to be informed on the investment policies of the trustee, and they require their management to report to their board of directors on the trust.

This is a form of supervision which is thorough and at the same time flexible, and is far superior to anything that could be achieved through legislative action.

INTERNAL AUDITING

The Association for Bank Audit, Control & Operation, of which most banks are members, sets forth in a statement of principles of internal auditing that "a major obligation of a bank's board of directors is the establishment of proper internal controls to protect its customers, stockholders, directors and staff."

Internal auditing has as its basic purpose the prevention and detection of loss. The auditor's responsibility flows directly to the management to whom he makes regular reports. Significant in the audit program set forth by the association for pension and profit sharing trust functions are the following:

(1) Verification of authority for action taken under the trust instrument.

(2) Compliance with applicable statutes and regulations.

(3) Determination that assets are adequately safeguarded and properly presented in financial reports.

(4) Determination that liabilities are completely disclosed and any pending litigation affecting trust accounts reviewed.

(5) Audit of trust income, expenses and acquisitions and disposal of assets.

(6) Evaluation of insurance coverage of trust assets.

In many banks the bylaws requires that the auditor appear personally before the board of directors or its examination committee to report on the major findings of the auditing program. This would include any violation of trust statutes and regulations.

States may require examination by internal auditors accountable to the board of directors. As an illustration, in New York, section 122 of the banking law requires an annual examination of the bank by the board of directors and section 123 requires that a report be made to the board of directors of the bank after completion of the examination and a copy filed with the superintendent of banks within 10 days after such meeting. Monetary penalties are levied against the banks for each day's delay in filing reports of examination. The superintendent may also require the banks to employ independent auditors. As a further protection to trust funds, many banks engage completely independent outside auditing firms to review and supplement the work of the internal auditor.

COMPTROLLER OF THE CURRENCY

Regulation 9 issued by the Comptroller of the Currency enumerates in considerable detail the fiduciary powers of national banks and collective investment funds. The responsibility for the proper exercise of fiduciary powers is placed in the board of directors of the bank. All matters relating thereto, including the determination of policies, the investment and disposition of property held in a fiduciary responsibility, and the direction and review of the actions of all officers and employees in the exercise of its fiduciary duties are the responsibility of the board.

The board must insure that trust accounts are periodically reviewed to determine the advisability of retaining or disposing of assets. The Comptroller requires that the trust records be kept separate and distinct from other records of the bank. A record must be kept of all pending litigation in connection with the exercise of fiduciary powers.

A committee of directors, excluding officers of the bank, must cause suitable audits at least once during each year to be made by auditors responsible only to the board. The purpose is to ascertain whether the trust department has been administered in accordance with law, the Comptroller's regulations, and sound fiduciary principles. Among other things, the regulations set forth powers of banks relating to investments, self-dealing, custody of investments, and collective investments.

FEDERAL RESERVE

All member banks are subject to examination by the Federal Reserve examining staff. The Federal Reserve assists the Comptroller of the Currency in carrying out examinations in accordance with the provisions of Regulation 9. A concept of the extent of the examination is set forth in the following statement:

"The scope of the examinations of pension trusts held by banks includes a survey of overall policies, practices and procedures in connection with new-business solicitation and acceptance of accounts, legal opinions and other documentation, investments, fees and internal controls and audits. In addition, individual pension trusts are reviewed as to investments and administration. Particular attention is given to unusual investments, investment concentrations, and investments in stock or obligations of the employer corporation. Investments held are scrutinized to determine conformity to the provisions of the governing trust instruments and the provisions of the Internal Revenue Code and regulations of the Treasury Department. In the case of investments in securities of the employer, the examiner ascertains that proper disclosures have been made to the Treasury Department."

STATE BANKING DEPARTMENTS

In addition to internal and Federal audits, State banking departments examine trust departments of State banks. For instance, in New York State a special trust examining staff of the State banking department makes a comprehensive examination each year of the administrative and operating policies, procedures and acts of all divisions of trust departments. The usual scope of audit functions involving principal, income and expenses is covered. Further, the examination by State examiners includes, among other items, the following:

(1) Investigation of matters involving ineligible investments, self-dealing, holdings of stock in close corporations, etc.

(2) Verification that investment reviews are made by the board of directors and the recording of minutes for each trust fund.

(3) Verification of any objections to filing of trustees' reports.

(4) A check on any threatened litigation against the bank based on its fiduciary activities.

(5) Verifications of commissions charged to trust.

There is no question that State and Federal examiners are diligent in their audits; searching questions are asked and written answers required of responsible officials of the bank. In a large bank, trust examinations will extend over a period of months. Naturally, any breach of trust, disloyalty to beneficiaries, self-dealing, improper delegation of responsibility, failure to keep and render proper accounts, failure to control property and many other irregularities which the audit might disclose would subject the bank to severe penalties.

TREASURY REGULATIONS

Section 6033 of the Income Tax Regulations requires the bank trustee to file an annual return with the District Director of Internal Revenue. Among the data made available are detailed answers to questions relating to any transactions concerning a company's possible self-dealings with the trust assets covering borrowing, compensation, purchase and sale of company securities, and delivery of assets to the company. Either the bank trustee or the company must furnish a statement of receipts and disbursements and a balance sheet of the trust funds. Copies of the trust agreement and all amendments are filed with the Treasury Department.

DISCLOSURE ACT

The Welfare and Pension Plans Disclosure Act requires, under part IV of Annual Form D–2, the submission of financial data for trust funds. The fund data includes a statement of assets and liabilities, statement of receipts and disbursements, supporting schedules for specific receipts and disbursements and party-in-interest transactions. A copy of the trust agreement is included among other documents relating to pension and profit sharing plans. As required by the act, the administrator of the plan must make the information available for examination on request by a participant or beneficiary. The Secretary of Labor is also required to make the information available for public examination.

INVESTMENTS

Pension and profit sharing trusts make no distinction between principal and income. Typically, the modern trust agreement gives the bank trustee broad powers of investment. Irrespective of these broad powers, the common law of prudence governs the actions of the trustee.

Some companies, however, prefer to place investment restrictions in the trust agreement. For example, the agreement may provide for investments restricted to legals for fiduciaries or legals for life insurance companies or a prohibition on company securities. Whatever the restrictions may be, the trust funds deposited with a bank are protected against a breach of trust through elaborate internal and governmental audits and controls. State laws protect the trust beneficiary. For instance, in New York State, section 100–b of the banking law provides that all investments by a bank shall be at its sole risk, and the capital stock, property and effects of the bank shall be liable for

losses, unless the investments are proper and permitted in the trust instrument. This section also prohibits any corporate fiduciary from purchasing securities from itself.

In some instances, a company may choose to assume the responsibility for the investment of the funds. Here the bank is under the duty of following the instructions of the company. We believe that the company, in exercising the investment function under a trust instrument, assumes a fiduciary responsibility and its acts must be judged by the same high standards as a bank. The officers and directors of the company may find themselves personally liable, and action can be brought by stockholders as well as employees. Similarly, investment advisers selected by a company to manage trust funds will also find themselves governed by fiduciary standards. Where the bank does not manage investments, nevertheless it continues to be responsible for the proper accounting and safekeeping of the assets.

PAYMENTS OF BENEFITS

In the majority of the employee benefit trusts, the bank as trustee makes the benefit payments directly to the employees or their beneficiaries. In pension plans, the company usually certifies to the bank that the employee is eligible for payments and determines the amount of pension or other benefit to be paid. In profit sharing and savings plans, the procedure is similar except that the bank frequently maintains the record of the accounts of employees and makes the determination of the amount payable. In those cases where the bank does not make payment of benefits, the bank transfers funds to the retirement committee or other committee of the company, which makes payments. They continue to be fiduciary funds in the hands of the committee, and the committee, we believe, has the same responsibilities as a bank trustee has in the proper distribution of the funds.

Upon receipt of the certification by the company, the bank assumes the obligation for proper payment. If a mistake is made in paying (1) the wrong amount, or (2) the wrong person, the bank is required, pursuant to long-standing trust practice, to reimburse the trust for any unrecoverable loss. Also, the trust is protected against loss due to forgeries.

SUMMARY

In summary, bank trustees are held to a high degree of fiduciary conduct. Banks are closely controlled and governed by well-established statutes and by internal, Federal and State audits, examinations, and procedures. Significant penalties are imposed upon banks when they commit a breach of trust or fail to comply with Government requirements. Financial statements of each trust fund are rendered to the company, to the Treasury Department, and to the Labor Department. In considering the need for additional legislation in the areas of disclosure, audits, and financial data, we respectfully suggest that existing controls of bank trustees be recognized.