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Volume Author/Editor: Roger F. Murray

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Chapter Author: Roger F. Murray

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## 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.<sup>1</sup> 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 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.

Whether this form of saving represents a substitution for other forms or a net addition to the aggregate saving of households be-

<sup>1</sup> 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.

	<i>Average, 1946-50</i>	<i>Average, 1951-55</i>	<i>Average, 1956-60</i>	<i>Average, 1961-65</i>
Personal income (billions of dollars) <sup>a</sup>	203.0	283.4	366.0	472.0
Personal saving (billions of dollars) <sup>a</sup>	11.7	17.2	19.9	23.2
Retirement saving (billions of dollars) <sup>b</sup>	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

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 per cent, 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.

<sup>a</sup> National income accounts of the U.S. Department of Commerce, *Survey of Current Business*.

<sup>b</sup> 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.

comes 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 <sup>2</sup> 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

<sup>2</sup> *A Study of Saving in the United States*, Princeton, N.J., 1955, Vol. I, pp. 4-22.

record of the past ninety 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.<sup>3</sup>

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 home ownership. 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 in a pension plan is illiquid. It cannot be drawn on 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 ex-

<sup>3</sup> 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.

perience 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.<sup>4</sup>

### 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 per cent had annual incomes between \$5,000 and \$10,000, and almost 34 per cent 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 cover-

<sup>4</sup> 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.

age 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.

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.

	<i>Average Saving Ratios</i> (per cent)	
	<i>Covered</i> <i>Households</i>	<i>Not</i> <i>Covered</i> <i>Households</i>
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	<u>5.9</u>	<u>5.7</u>
Subtotal	8.7	7.7
Pension saving in the form of increases in equities in pension plans	<u>2.8</u>	—
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 8,008 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.<sup>5</sup>

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.<sup>6</sup> 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 per cent or more of their compensation to the pension plan and enjoy full vesting. The strongest recognition effect, on the other hand, is found in those

<sup>5</sup> 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.

<sup>6</sup> 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.

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.<sup>7</sup>

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

<sup>7</sup> New York, 1964, pp. 184-185

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.<sup>8</sup>

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.

#### 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 four 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

<sup>8</sup> George Katona, *Private Pensions and Individual Saving*, Monograph No. 40, Survey Research Center, Ann Arbor, Michigan, 1965.

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.

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

	1965	1975 <sup>a</sup>
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

<sup>a</sup> 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.

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.<sup>9</sup>

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.

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

<sup>9</sup> For the significance of these forms of saving, see F. Thomas Juster, *Household Capital Formation and Financing, 1897-1962*, New York, NBER, 1966.

employers. This figure does not accurately reflect the true situation because the federal civil service and some state systems are greatly underfunded; i.e., 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 retirement 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 OASDI 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 OASDI 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 with-

out 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 OASDI have 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.