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SUMMARY

Group pension funds (including government plans but excluding social security) have increased from a total of \$4.9 billion at the end of 1940 to \$125.9 billion at the end of 1964,¹ a rate of growth of 14.5 per cent per year. If the growth rate of other saving remained unchanged, pension contributions would have added 2.2 percentage points to the aggregate personal saving-income ratio in 1963 (Chapter 2), and these contributions will surely grow. This is almost a third of the personal saving in the economy. Although the aggregate ratio is a volatile series, so far as can be determined it seems to have fallen slightly over the past decade and a half (Chapter 2, footnote 1), which indicates a full offset to pension growth by reductions in other forms of saving.

This evidence on the effect of pension plans on the economy, however, is misleading, because other saving may have declined for many reasons other than the straight substitution of pension for other saving. Medical and term life insurance (in part provided by employers) has spread widely, and the fear of severe depressions has clearly lessened. Such developments, insofar as they reduce the dangers of misfortune and shift remaining financial risks from individuals to groups, decrease aggregate saving and may account for the failure of pension growth to increase it. Also, the age distribution of the population has shifted in recent years toward the young and retired groups, increasing the proportion of households in the time of life when financial saving is typically very low. These offsets are not directly related to pension coverage and will probably not make saving any lower in the future than it already is. If so, the trend of the aggregate saving ratio in future decades should clarify the effect of the growth in pension saving.

¹ The 1964 figure is from Securities and Exchange Commission, *Statistical Bulletin*, June 1965, p. 33; 1940 is from *Social Security Bulletin*, March 1959, p. 12, and Annual Statistical Supplement, Table 9, and Raymond W. Goldsmith, *A Study of Saving in the United States*, Princeton University Press, 1955, Vol. I, p. 1073. The 1940 state and local government figure was adjusted to end of calendar year to agree with the 1964 figure.

This effect may also be estimated, as was done here, from a cross-sectional analysis of saving by covered and not-covered households. Saving was measured by reported changes in net worth. Our sample, consisting of a panel of Consumers Union subscribers, is clearly unrepresentative of the U.S. population and is only a tentative guide to national saving behavior. Yet the sample households are above average in income and education, and so should be fairly well informed and aware of pension plans. Their responses to questions on pension coverage may indicate the future behavior of the population at large as pension plans spread and the costs and benefits become well known. The answers of these particular households may magnify the response currently to be expected from the entire population, but there is no clear reason why they should not reflect its future behavior. In addition, Consumers Union respondents were uncommonly conscientious in giving the required details of their financial affairs, though reporting errors are undoubtedly not negligible in data of this kind. Finally, the results were not affected, so far as could be determined, by the particular period—1958–59—covered by the survey. All group plans other than social security were treated as the same; it was not feasible to distinguish between the effects of different kinds of plans.

Our analysis of this sample suggests that when households come under a pension plan, offsetting reductions in other saving do not occur. The net addition to aggregate personal saving apparently equals the full amount of employees' and employers' contributions. In Chapter 6 it was concluded that business and government saving is probably reduced at most by 10–20 per cent of the growth in pension funds. Though there is no direct evidence for this conclusion, general considerations support it. Hence 80–90 per cent of pension growth constitutes a net addition to national saving. We found no evidence that this addition will be temporary; at least it was not lower for older persons, or for those covered a longer period of time, who would be more aware and more sensitive to provisions for retirement, as the rest of the population will be in time.

The explanation of this behavior does not appear to be households' unawareness of or indifference to the pension contributions made by and for them, because, far from decreasing their nonpension saving, covered households appear to increase it slightly, chiefly via bank de-

posits and government bonds. This adds even further to the rise in aggregate national saving to be expected from the spread of group plans. A slight increase in nonpension saving was indicated by three sets of data:

1. A comparison of covered and not-covered households showed the former to save a half to 1 per cent of income more in other forms, even after making various stratifications of the sample to correct for extraneous differences between the two groups. In particular, the same results were obtained after excluding households without social security or with more than one income earner.

2. Within age groups for covered households, the ratio of wealth (excluding pension equity) to income rises as the period of time covered lengthens; yet, as already mentioned, the current saving of covered households is apparently not related to the length of time covered, so that such a relation cannot explain the rise in the wealth ratio. The implication is that coverage raises saving to a higher level and so accounts for the greater accumulation of wealth by households covered longer. This conclusion does not follow if for some reason high-wealth households tended to acquire pension coverage first during the past two decades, which seems in general not to have been true.

3. By regression analysis, discretionary and nonpension contractual saving were found to *increase* by 21 and 28 cents, respectively, per dollar of pension contributions. Other contractual saving is the equity part of mortgage payments and nonterm insurance premiums.

These results are not explained by the argument that employers' contributions to pension plans are a fringe benefit that increases the total income and hence all expenditures of covered households. These benefits are usually a good substitute for other saving and for that reason ought to decrease it. Moreover, even though total income is increased by fringe benefits, disposable income is not. Indeed, under contributory plans disposable income is reduced, and expenditures must somewhere be cut. If pension plans were thought worthless and employees' contributions deducted from pay checks were viewed as a withholding tax, covered households would feel they had less income and hence would not ordinarily increase their other saving. Nor does the lower mobility of covered households appear to explain these results. It is true that pension plans, especially without full vesting,

tie workers more closely to their present employer, and covered households tend to have, as is often associated with lower mobility, larger families and greater homeownership. These factors reduce income taxes and leave more disposable income. Such differences between covered and not-covered households in our sample were extremely small, however, and cannot account for the differences in saving. Moreover, the evidence cited under items 2 and 3 is based solely on differences between covered households, among which mobility, differences in propensities to save, and other characteristics are presumably distributed at random.

We find therefore a quite different response in our sample to pension coverage than to other contractual saving. Whatever the drawbacks of preparing for retirement entirely by oneself, formal arrangements—social security and group pension plans—are popular. They help greatly with the financial means, and in addition, by providing much of the planning, they render further self-help less forbidding. The increase in self-help that coverage seems to foster I have called the “recognition effect.” The implied explanation is that pension plans call attention to retirement prospects and needs—perhaps we should say “force attention”—given the human disinclination to worry about the day after tomorrow’s problems or to dwell when young on the eventual loss of health and earning power. We cannot say whether the not-covered households in the sample, which save much less in total, have non-financial plans for their old-age care or are intentionally or irrationally ignoring the problem.

Although we cannot prove that the extra nonpension saving made by covered households will supplement their retirement income, that seems to be the intention. If it were not, characteristics of households’ pension plans would probably not affect nonpension saving. But in fact they do. The amount of extra saving varies with vested rights and the size of pension contributions. The recognition effect is larger when there is some rather than no vesting, probably because to many people no vesting is like no pension plan at all. The recognition effect also increases as pension contributions rise—up to a point. Other saving declines again when the amount contributed passes a certain level and fully vested rights are acquired, which is evidence of a belated substitution effect.

The additional nonpension saving of covered households in the sample amounted to a half to 1 per cent of income. This is an average, covering households with different recognition and substitution effects. Our highest estimate of the recognition effect was 1.5 percentage points for some over no vesting and 1.5 percentage points for a certain rise in employee contributions, a total rise of 3.0 points. This is nearly half the average personal saving ratio of not-covered households in our sample and in the United States as a whole. The substitution effect appeared only when a household's own contribution to plans exceeded a certain percentage of its pay, 3 to 4 per cent on the average, by our estimate. For such households the elasticity of the substitution effect varies with the amount contributed: it is zero with a contribution of 3 or 4 per cent and rises to one-half with a contribution of 5 per cent. (That is, at this contribution level, holding income constant, a further dollar contributed reduced other saving on the average 50 cents.) The elasticity for employers' contributions alone seems to be zero, possibly because most covered households, as we found, have little idea of the current cost of pension benefits to their employers. The average increase in nonpension saving of covered households therefore depends on how the recognition and substitution effects are distributed among the sample households. The implication for the nation's population in the future, however, is that the recognition effect could become extremely large; but that if full vesting becomes common and the amount contributed by employees large, substitutions for other saving will occur, though far less than dollar for dollar. Of course, over 80 per cent of corporate plans are noncontributory for employees, and this percentage, if anything, is rising. Our previous statement that aggregate saving will increase by 80-90 per cent of the growth in pension funds also needs qualifying because vesting provisions differ. The results suggest that the increase could be greater or less than this, though most likely greater, at least for some time.

This tendency, as pension contributions increase, for other saving to rise at first and then to fall may or may not occur with other forms of contractual saving. Whether it does or not, the usual assumption that discretionary saving is always negatively related to total contractual saving is still inappropriate, because the latter consists in large part of pension contributions.

One might attribute the recognition effect to an all-encompassing desire for security, brought on by a host of influences ranging from greater geographical mobility to the Great Depression. This allusion may describe certain social trends, but it does not explain our results. A desire for security presumably touches households at all times, not just when they acquire a pension plan. Moreover, there is no clear indication that the more security-minded households acquire plans at progressively younger ages. The evidence therefore implies a recognition effect of some kind.

Such results seem to imply that pension and other saving are complements and so to contradict a long-standing proposition of economic theory that similar products are substitutes for each other. There is a quite different explanation of these results, however, that removes the contradiction. The nation is going through a long transitional period of radical change in the form of saving. Once, saving in the form of physical and human assets—farms, small businesses, and children—was common and in some sectors of the economy even customary. For various reasons—such as greater geographical mobility, decline of small-scale farming and retail business, longer human life—these forms have become inadequate. A shift to financial assets is taking place, but slowly, because new institutions must be developed. During the transition there is uncertainty and confusion, especially by households that find many financial assets unfamiliar and imperfectly suited to their needs. When households do find an appealing form of financial saving—as pension plans appear to be for many—it is perhaps not surprising that they then shift over to saving by financial means entirely and plan more carefully for retirement income.² On this interpretation, various physical assets used to be substitutes for each other in personal saving, and after the transition period various financial assets will be substitutes for each other; but during the transition there are many households which appear to be increasing their saving via a variety of financial assets simultaneously.

While the evidence shows a clear effect of coverage on saving *in our sample*, extending these results to the population as a whole now and

² For such households one might expect to find financial assets substituting for physical and human assets. The data unfortunately do not readily permit a direct test of this.

in the future should be done cautiously and on a tentative basis, in view of the special and unrepresentative character of the sample. This does not justify dismissing these findings peremptorily, citing the need for other evidence. To my knowledge no other evidence directly contradicts these findings. But they must remain tentative until studies of more representative samples become available. Given the far-reaching implications of our findings, such studies appear highly desirable.³

The implications of adding 80–90 per cent of the growth in pension funds to national saving are, to say the least, staggering. That addition assumes no reduction in other forms of saving by households but ignores any recognition effect. We find no evidence that the addition will slacken as familiarity with the plans increases. Table 19 shows the

TABLE 19
Saving Ratios That in Forty Years Give Various Retirement Incomes

Interest Rate	Per Cent of Average Annual Working-Life Income Received Annually from Retirement to Death					
	50		75		100	
	Males	Females	Males	Females	Males	Females
3	7.9	9.3	11.9	13.9	15.9	18.5
3 1/2	6.8	7.9	10.2	11.8	13.5	15.7
4	5.8	6.7	8.7	10.0	11.5	13.3

Source: Based on *Ga*-1951 Table with the Equitable 1960 projection for mortality after retirement. Computations assume a constant working-life income beginning at age 25 and ending with retirement at age 65, and no loading charges.

implications in terms of the retirement income of individual households.

The table gives the saving ratio needed for a retirement income equal to various fractions of one's working-life income, given an average life expectancy and various interest rates. The ratios shown are probably underestimates for most households because of the assump-

³ The results of a 1962–63 survey by George Katona reached me after the present work went to press. Katona's study deals only with pension coverage and not the amount contributed; however, it uses a randomly selected sample of the total U.S. population. He finds that coverage is associated with higher discretionary saving, confirming the results here. See Katona, *Private Pensions and Individual Saving*, University of Michigan, Survey Research Center, Monograph 40, 1965.

tions that income does not rise with age, that retirement income continues only so long as the covered spouse lives, and that nothing extra is added for inflation or rising standards of living.⁴ On the other hand, there is no adjustment for social security benefits, which with the recent 7 per cent increase (1965) will in the future pay up to \$1,534.67 for an individual or \$2,302.00 for a couple. Nevertheless, the figures provide rough benchmarks. The aggregate personal saving ratio has averaged about 5 per cent in recent years. At an interest rate of 4 per cent, this would allow the average family to retire on about one-half of its working-life income.

Our sample estimate of the average total contribution to pensions by and for covered households in Chapter 4, Section 2, was 6.5 per cent of income, which very nearly equals the saving of the average not-covered household, though the figure was subject to various biases and may be too high. If it is correct, total personal saving rises in this sample when a pension plan is acquired to around 12 per cent of income, and to even more if we add the recognition effect. Such an increase raises retirement income (if all used for that purpose) from a half to nearly full equality with working-life income if the relevant interest rate is around 4 per cent, and this takes no account of social security benefits. Although not long ago bare survival after retirement was the rule, the new standard for covered households on this evidence is to retire on a par with average lifetime income.

To anyone concerned over the problems of the aged, this admittedly seems utopian and far out of touch with the present situation. Can such radical changes occur in one or two generations? Since high savers dominate our sample, the results doubtless magnify prevailing trends, even if pension coverage ever became universal. Yet the rapid growth in pension funds is a matter of record; adding to this just the average family's saving via homeownership and expected benefits from social security and assuming zero substitutions for other saving, the foregoing prospects, even if exaggerated for the average U.S. household, are not entirely fanciful.

In closing his monumental study of capital formation in the Ameri-

⁴ On these possibilities, see L. Soltow, "Retirement and Productivity," *Review of Economics and Statistics*, February 1961, pp. 90 ff.

can economy,⁵ Simon Kuznets noted the past long-run decline in aggregate national saving and questioned whether, if this decline was not reversed, we shall be able in the future to finance an adequate growth of the capital stock to meet the rising aspirations of the nation for higher standards of living. This projection excludes expenditures on education and business research, which have become more and more important as ways of investing in future productivity. Aside from how we define investment, however, the present study suggests that the growth of private pension plans will generate an increasing volume of saving over time. If population growth ever levels off, of course, so that spending by retired people rises relative to the saving for retirement by workers, the net addition to aggregate saving from this source will decline—but for the near future, population projections point to growth. It is ironical that less than two decades ago economists worried that the economy could not find use for the large volume of future saving then expected, with stagnation and unemployment as the prospect, whereas today many economists fear that future saving will be inadequate. Whether capital supplies and needs will stay in balance at current rates of interest, no one of course knows. But as of now the evidence does not indicate that deficiencies in the future growth of saving will be an important obstacle to rising standards of living.

⁵ *Capital in the American Economy: Its Formation and Financing*, Princeton for NBER, 1961, esp. pp. 453–457.

