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Pension Funding, Share Prices, and Saving

Private pension plans, which have grown rapidly over the past fifteen years, have become the subject of considerable controversy. Some groups argue for substantial increases in Social Security benefits and a diminished role for private pensions, while others, including the President's Commission on Pension Policy, endorse a proposal for mandatory corporate pensions.

One crucial issue in formulating pension policy is the effect that the plans have on aggregate saving and capital accumulation. The common view is that pension plans increase private saving, but it is possible that they actually reduce saving if corporations fail to fund their pension obligations. **Martin Feldstein**, president of the National Bureau of Economic Research, and **Stephanie Seligman** of Harvard University examine this issue by estimating the effect of unfunded obligations on stock prices. Their findings, reported in **Pension Funding, Share Prices, and National Saving, Working Paper No. 509**, suggest that unfunded obligations do not reduce saving.

The effect of pensions on total saving would be straightforward if all plans were fully funded. If pensions provided benefits that were less than or just equal to the retirement incomes that employees would otherwise save for independently, the money set aside by corporations would presumably be offset by an equal reduction in employees' savings. Total saving would rise only if pensions paid higher retirement benefits than employees would voluntarily provide for themselves. The net effect on saving becomes ambiguous, however, irrespective of benefit levels, when corporations fail to fund some of their pension obligations. In that case, employees may reduce their saving in anticipation of company-paid benefits, but the reduction may not be entirely offset by corporate contributions to pension funds.

Feldstein and Seligman argue that the ultimate ef-

fect on aggregate saving hinges on how a third group—corporate shareholders—responds to any underfunding. Unfunded pensions constitute future claims against earnings and assets but do not reduce a company's book value because they are not carried on the balance sheet. In addition, the failure to fund increases in pension obligations inflates accounting profits. In Feldstein and Seligman's view, the net effect on saving depends on whether the stock market can pierce the accounting veil and see the effect of unfunded pension obligations. If shareholders have incorrect assessments of their wealth (the value of the company) and their income (the company's earnings), they will consume too much.

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On the other hand, unfunded pensions will have the same effect on aggregate saving as fully funded ones if shareholders recognize that the inflated accounting profits are offset by future benefit obligations. As Feldstein and Seligman put it, “If the share price is reduced by the extent of the unfunded obligation, the shareholders will have both the correct information and the correct incentive to increase their saving by the increase in the unfunded pension obligation.” In other words, employees may reduce their saving in response to pension promises, but shareholders will increase their saving to the extent that corporations fail to fund the promises.

Feldstein and Seligman test the effect of unfunded

obligations on both the total value of the company (including the value of outstanding debt) and on the equity value. In both cases, the results indicate that unfunded vested benefits do reduce market values. The standard errors of the coefficients on the unfunded vested benefit variable are too large to draw precise conclusions, but the estimates are compatible with the hypothesis that a company's value falls dollar-for-dollar as unfunded vested benefits rise. In addition, the results are strong enough to reject the hypothesis that unfunded pensions have no effect on a company's market value.

The tests with 1977 data indicate that each dollar of unfunded vested obligations reduces the aggregate value of a company's shares by about \$1.23. The standard error of the coefficient is .40, so that there is a 67 percent probability that the true reduction in equity values is between \$0.83 and \$1.63 per dollar of unfunded vested benefits. The results for 1976 are similar but not identical. The estimated market value effect is minus \$1.84 per dollar of unfunded vested benefits, with a 67 percent confidence range of minus \$1.15 to minus \$2.53.

The coefficients of the pension asset variable are consistently smaller than those for unfunded vested benefits, which implies that paying off a dollar of unfunded benefits raises a company's market value by less than a dollar. The 1977 estimates indicate that reducing unfunded benefits by a dollar increases the value of a company's shares by only \$0.58. However, the statistical significance of the differences between the unfunded benefit and pension asset coefficients is very weak, so it could be that paying off a dollar of unfunded benefits actually raises the company's value by an equal amount.

Feldstein and Seligman warn that the measurement problems in their tests are so great that the precise estimates must be treated with caution. But the overall finding that unfunded obligations reduce the value of a company, if supported by future research, has significant implications. The most important of those implications is that unfunded pensions do not necessarily entail a reduction in private saving. Therefore, unfunded private pensions differ fundamentally from unfunded Social Security benefits and other unfunded public pension plans. AE

Income Tax Incentives for Saving

The current treatment of capital by the U.S. tax system distorts both the timing and the direction of in-

vestment and saving. Personal saving is taxed as income, and the return on it, interest or dividends, is taxed again. Thus, the cost of saving increases with tax rates and individuals consume more (and save less) today than they otherwise would. In economic terms, this is an intertemporal distortion.

Interindustry distortions, that is preferences for investing in one industry over another, result from the fact that the tax system treats industries differently. For any industry, effective tax rates on capital depend upon the extent of incorporation, the age of its assets, its debt-equity ratio, and its other financial policies. Naturally, investors seek those industries with lower effective tax rates and therefore higher aftertax returns to capital.

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According to NBER Faculty Research Fellow **Don Fullerton** and **Charles Becker**, both types of distortion can be reduced, but this may require more complicated tax formulas and may result in a more regressive tax system overall. In *Working Paper No. 487, Income Tax Incentives to Promote Saving*, Becker and Fullerton look at six plans involving tax cuts or indexing the tax system against inflation that might increase the real rate of return on saving. Using a sectorally disaggregated model, the authors estimate both the static (annual) and the dynamic (long-run) effects of each plan assuming three options for preserving tax yields: (1) a lump sum tax on all consumers in proportion to their original aftertax income; (2) increasing all marginal tax rates by a constant; and (3) multiplying all marginal tax rates by a constant. Six plans are examined.

Plan 1—raising the maximum deductible amount for pension plans, Keogh and IRA accounts (treated in the model as an increase in the savings exclusion from 30 to 40 percent for income tax purposes).

Plan 2—making 70 percent of personal interest receipts deductible from the income tax base.

Plan 3—replacing the present \$100 dividend deduction with an exclusion of 60 percent of dividends from the income tax base.

Plan 4—reducing to 30 percent the proportion of capital gains included in taxable personal income.

Plan 5—indexing capital gains for inflation before calculating the tax on them.

Plan 6—indexing capital gains (as in Plan 5), but also indexing interest income and corporate depreciation deductions so that inflation will not change

the corporation's capital tax rate regardless of its financial policies.

The first plan, which would stimulate pension saving, is the most successful in generating new savings and capital, but results in the smallest static change in overall welfare. Plan 6, involving extensive indexing of the tax system, is clearly the most successful, resulting in the largest static and dynamic gains in welfare of all the plans. Annual static gains are estimated at more than \$4 billion (in 1973 dollars), about twice as large as the gains from excluding 60 percent of dividends from the personal tax base. Plan 6 yields dynamic gains of about \$200 billion (in present value, 1973 dollars) as compared to dynamic gains of \$100 billion from the 60 percent dividend exclusion and about \$70 billion from indexing only capital gains. This \$200 billion is comparable to the welfare gain that could be obtained by integrating the personal and corporate income taxes.

The estimated gains, it should be noted, are quite sensitive to the tax chosen to preserve total tax yields. Plan 6, the extensive indexing plan, "requires a much larger income tax increase to offset its implementation than does any other plan," according to the authors. The form of tax replacement is also important for the (income) distribution patterns that result. In fact, Becker and Fullerton's results indicate that there is a trade-off between the size of the welfare gain and its distribution to the poorer classes. For example, replacing yields by multiplying marginal tax rates enhances the gains of the poor but induces lower (total) welfare gains than other replacements. However, Becker and Fullerton find that the extensive indexing plan (Plan 6) makes all classes better off regardless of the tax replacement and increases total welfare more than any other plan.

Money Policy and Offsetting Capital Flows

As investors become increasingly willing and able to move funds between countries to take advantage of higher interest rates, there has been considerable concern that under pegged exchange rates such capital flows might make domestic monetary policy ineffective. A restrictive monetary policy, for example, might merely raise interest rates, drawing in funds from abroad but having little other effect on the domestic economy.

NBER Faculty Research Fellow **Maurice Obstfeld** investigates this issue for an open economy with fixed exchange rates, in **Sterilization and the Offsetting Capital Movements: Evidence from West Germany, 1960-70**, *Working Paper No. 494*. Obstfeld surveys previous estimates of the "offset coefficient" for West Germany—that is, the fraction of domestic monetary expansion offset by capital outflow during the same quarter, or after a long-run adjustment. He finds that past estimates of the offset coefficient—ranging from 47 to 88 percent—were substantially exaggerated by failure to take account of the fact that the Bundesbank consistently sterilized potential changes in domestic money creation resulting from changes in its foreign assets. These estimates confused the correlation between monetary policy and capital flows resulting from such sterilization with the actual capital account response to domestic monetary policy.

In the author's alternative structural approach, models of the domestic money market and of a market in internationally traded interest-bearing claims determine equilibrium values of the domestic interest rate, the stock of money, and net external liabilities. The demand for real money balances in this model depends on the interest rate, real income, and real wealth. The real money supply is a function of the real monetary base and the difference between the domestic interest rate and the discount rate.

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Obstfeld estimates the central bank's reaction function, carefully adjusting the monetary base for changes in reserve requirements and for changes in forward swap contracts (used at times to induce domestic banks to hold foreign rather than domestic assets). Estimates from this equation provide the evidence that the Bundesbank pursued a policy of systematic sterilization, largely insulating domestic monetary policy from changes in foreign reserve holdings.

Obstfeld then uses his model of financial asset markets to estimate how net external liabilities would respond to a change in the Bundesbank's domestic assets. The estimated short-run offset coefficient is quite small, typically between 10 and 15 percent. Using the highest estimate (15.5 percent) means that the Bundesbank had to purchase DM 1.18 billion in domestic assets to increase the monetary base by DM 1 billion in that quarter.

The long-run offset, applicable after the full adjustment of asset markets, generally ranged between 50 and 55 percent, implying that an open market purchase would bring about a permanent increase in the monetary base of roughly half the size of the purchase. Because domestic and foreign currency bonds were

imperfect substitutes, monetary policy apparently retained considerable power even in the long run. The author concludes that "the Bundesbank had ample leeway to conduct an independent monetary policy over a short horizon during the Bretton Woods period."

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