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PENSIONS, SOCIAL SECURITY, WEALTH AND LIFETIME EARNINGS: EVIDENCE FROM THE HEALTH AND RETIREMENT STUDY

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Defined benefit (DB) pension plans had been a staple of the U.S. pension system for decades, before heading into a persistent and secular decline over the past 30 years. Although defined contribution plans continue to grow faster than the more traditional DB plans, DB plans nevertheless continue to play an important role in the pension system. Especially when including Social Security, a public defined benefit system, defined benefit plans provide a significant amount of retirement income for many elderly households.

Yet the effects of such plans on retirement income are controversial. Benefits from defined benefit plans are tax-preferred; they are typically paid as annuities, making them illiquid; and they are usually unindexed for inflation. These factors, combined with uncertainty about the relative importance of the major motives for saving (retirement, precautionary, down payments, for examples), the differing importance of such motives over the life-cycle, difficulties with measuring DB pension wealth, and other issues, have made estimation of the impact of DB pensions on wealth a difficult exercise.

This paper offers a new analysis of how private defined benefit pensions and Social Security affect household wealth with special attention to examining how to interpret estimates of the offset between defined benefit pension wealth and other wealth. We obtain several key results. First, “raw” defined benefit pension wealth must be adjusted in a particular way to yield meaningful coefficients in a cross-section regression of non-pension wealth on pension wealth. Second, most previous work has not made such adjustments. Third, the adjustments that have been made in the past do show significant changes in the interpretation of how defined benefit pensions affect wealth. Fourth, the Health and Retirement Study data used in this study show little offset between “raw” pension wealth and non-pension, and making the adjustments to defined benefit pension wealth has relatively modest effects on the estimated overall offset between pension wealth and other wealth. Fifth, the results do show statistically significant differences in offsets among households who have different levels of educational attainment.

Interpreting Cross-Sectional Coefficients on Pension Wealth

Whether pensions raise wealth is a question about the effects of changing the composition of employee compensation, holding the level of compensation constant. For regressions that control for cash earnings and pension wealth, the coefficient on pension wealth will pick up the standard substitution effect or offset between pensions and other wealth, but it will also pick up an income or wealth effect associated with raising the household’s total compensation via adding a pension. As a result, these estimates will systematically overstate the effect of pensions on wealth — that is, understate the true level of offset.

In particular, we show that the bias introduced by the income effect varies systematically over time. Because a pension represents added compensation, rather than simply a change in the composition of compensation, the worker who receives a dollar of pension wealth spends the added compensation evenly over the time between the beginning of coverage to the end of life; this spending is financed by reductions in non-pension wealth. Even if the true offset is 100 percent, however, the corresponding reduction in non-pension wealth at any time before death is in fact less than one dollar because consumption of the additional wealth is spread across time. One way to remove the bias is to adjust the measure of pension using life expectancy and length of service in the pension. This yields an estimated coefficient that equals the true offset. Such an adjustment is generalized and applied in our empirical estimates.

Adjusted Estimates of the Offset

Our empirical work consists of a series of regressions of non-pension wealth on DB pension wealth. These vary by the dependent variable — either net financial wealth or the sum of net financial wealth and housing equity — and by the presence of an adjustment of Social Security and defined benefit wealth. All of our regressions control for several household economic and demographic characteristics.

These regressions allow for a full set of interaction between a college graduate indicator and the other variables. This allows the effects of each of the determinants of wealth accumulation to differ between college graduates and other households. The expectation is that college-educated households will offset a greater share of pension wealth with reductions in private saving than would other households. This could be because educated, retiree households have a longer investment horizon, more assets to shift, less need for precautionary saving, are less likely to be borrowing constrained, or for other reasons.

These regressions yield several key results. First, the determinants of overall wealth accumulation patterns appear to be different for households with and without college degrees. Second, controlling for other factors, lifetime earnings exert a positive but apparently quite small effect on lifetime wealth accumulation for both those with and without college education.

The data show little offset between non-pension wealth and unadjusted pension wealth. Our adjustment — that is, the correction that allows the appropriate concept of defined benefit pension wealth for purposes of measuring pension offset — has a statistically significant but quite small effect in this sample on the estimated offset. The same is true of differences in offsets between households with and without college educations — there are real differences, but they are economically small. These results are different from earlier results reported in a variety of papers.

Conclusion

This paper provides new evidence on how defined benefit pensions and Social Security wealth affect household wealth accumulation. The research presented here emphasizes the need to correct for a variety of biases in common econometric constructions, and the need to allow for heterogeneous responses to pensions across households with differing educational status.

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