

## THE DISPLACEMENT EFFECT OF PUBLIC PENSIONS ON THE ACCUMULATION OF FINANCIAL ASSETS

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The generosity of public pensions may affect the amount of private savings held at the time of retirement in two ways: a displacement effect and an early retirement effect. Higher public pensions should induce increased consumption over the entire life cycle, leading to lower private savings; thus, pensions displace private savings. Higher public pensions should also lead to earlier retirement due to the increase in lifetime income, and an earlier retirement will require greater saving to finance a longer retirement. Hence, the overall effect of an increase in public pensions on retirement wealth is ambiguous. Furthermore, conditional on a given retirement age, the standard model predicts perfect displacement (one more dollar of pension assets reduces financial assets by one dollar), but this will generally not hold in more complex and realistic settings such as borrowing constraints and uncertainty.

There is no consensus in the literature on the effect of pension wealth increases on non-pension wealth; estimates range from almost none to nearly a one-to-one negative correlation — as pension wealth increases, non-pension wealth decreases. The bulk of those studies have been done on U.S. data, but there is also international evidence exploiting pension reforms in several European countries and these also find a range of estimates.

The importance for public policy of a well-founded and accurate measure of the displacement effect stems from a primary objective of Social Security: adequate financial preparation for retirement. If displacement is complete, any decrease in Social Security benefits will be offset by an increase in private saving, leaving economic resources at retirement unchanged. If replacement is small or zero, reductions in Social Security will have a large reduction on economic preparation for retirement. Needless to say, an accurate measure of the displacement effect is also needed to assess the effectiveness of Social Security policies aimed to raise national savings.

In this paper, we present new evidence on the displacement effect of public pensions by using cross-country variation in the generosity and progressivity of pensions. We use micro-datasets from various countries to construct income replacement rates and private savings measures by education level and marital status, which are good proxies for lifetime earnings. We estimate reduced-form models derived from a standard life-cycle model in order to quantify the displacement and early retirement effect.

We aggregate data on assets and retirement ages from aging surveys in 12 countries covering individuals age

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50 and over: the Health and Retirement Study (HRS), the English Longitudinal Study of Ageing (ELSA) and the Survey of Health, Ageing and Retirement in Europe (SHARE), which cover 10 continental European countries (Austria, Belgium, Denmark, France, Greece, Germany, Italy, Netherlands, Spain, and Sweden). We use data collected in the 2004 wave of each survey (wave 7 of HRS, wave 2 of ELSA, and wave 1 of SHARE). The sample includes retired males aged 65 to 75. By that age, most males have retired and thus provide an adequate sample to measure assets and retirement age.

We computed a measure of median financial assets, which is comparable across countries. We use financial assets such as savings, stocks, and retirement accounts because they are relatively liquid and we would expect the displacement effect to operate for those in particular. Other assets, most notably housing, are much less liquid, and participation in the housing market likely differs across countries and groups for reasons other than the generosity of pensions.

The aging surveys we use have limited measures of lifetime earnings. Hence, we constructed pre-retirement net earnings from longitudinal surveys in the same set of countries. For the U.S., we used the 1994 to 1997 Panel Study of Income Dynamics (PSID), while for European countries, we use the 1994 to 1997 waves of the European Community Household Panel (ECHP) for European countries.

Simple graphical methods reveal a systematic relationship between replacement rates from the public pension system (the fraction of pre-retirement income that is replaced by the pension) and private wealth accumulation where households in those countries that have a higher replacement rate reach retirement with less private savings. In regressions, we use both cross-country variation and within country variation to estimate displacement effects. Our estimates suggest a displacement effect of roughly -23 to -44 cents of financial assets for every additional dollar of pension wealth. We also find that higher levels of public pensions induce earlier retirement: we estimate that retirement occurs about one month earlier for every additional \$10,000 in pension wealth. This is economically significant.

Our estimate of average pension wealth in the Netherlands is \$317.6 thousand, while it is \$222.2 thousand in England. The Dutch retire earlier than their British counterparts: the average retirement age is 59.1 in the Netherlands compared to 61.2 in England. Our preferred specification based on the difference in pension wealth predicts a difference of 1.1 years while the actual difference is 2.1 years. Hence, pension wealth would explain about 50 percent of the gap in the retirement age between the two countries.

We conclude that the generosity of the public pension system affects both private saving and retirement. Our results would predict that reductions in the level of Social Security would lead to later retirement. They would lead to somewhat worse economic preparation for retirement because the overall effect of a dollar reduction in Social Security wealth would lead to an increase in private wealth of less than a dollar.

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