

Demographic Change, Retirement Saving, and Financial Market Returns: Part 1

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Many analysts have suggested that population aging will adversely affect the value of baby boomer's financial assets when they reach retirement. When people are working, they are more likely to be saving for retirement, purchasing assets and bidding up their price. When they retire, they are more likely to be selling assets, raising the supply of assets on the market and thereby bidding down their price. The standard analysis suggests that as the baby boom generation moves from their prime working years toward retirement, there will be important changes in their net demand for assets, with corresponding effects on asset prices. The rapidly increasing population of older people in the United States and around the world might lead to lower returns in financial markets in the decades ahead. This paper is the first part of an analysis that aims to evaluate the likely importance of demographic trends on market returns in the United States. In this initial paper, we analyze trends in retirement saving, since the flow of retirement-designated assets is particularly sensitive to population age structure. Future work will estimate the relationship between these asset flows and rates of return.

The analysis is particularly important because of the fundamental changes in retirement saving that have taken place in the United States over the past two and a half decades. During this period, we have seen a profound shift from saving through employer-managed defined benefit pensions to defined contribution retirement saving plans that are largely controlled by employees. In 1980, 92% of private retirement saving contributions went to employer-based plans; 64% of these contributions were to defined benefit plans. By 1999, about 88% of private contributions were to plans in which individuals decide how much to contribute to the plan, how to invest plan assets, and how and when to withdraw money from the plan. 401(k) plans are the most important type of personal retirement account. The spread of these plans is likely to change the magnitude of age-related flows into and out of retirement plans, and is also likely to affect the timing of these flows. Thus, to understand the effect of demographic trends on the demand for retirement assets in the coming decades it is important to evaluate the likely financial flows into and out of 401(k) plans, and the corresponding account balances in these plans. That is the core objective of this study.

The study involves a careful analysis of past trends in eligibility for 401(k) plans, participation given eligibility, total participation, contribution amounts, and assets held in 401(k) plans. Then, based on the analysis of the past, and projecting forward individually by birth cohort, the study estimates 401(k) financial flows into the future.

There has been rapid growth in all measures of 401(k) participation since they became available in 1982. The analytical methodology decomposes this growth in a way that allows one to differentiate between within-cohort changes and across-cohort changes over time. For example, the study shows the increased eligibility for 401(k) plans over time for families of a given age. As illustration, the percentage of 40 year olds eligible for a 401(k) plan increased from 18% in 1984 to 34% in 1989 to 65% in 1999. As a

result of very different participation rates at age 40, these different birth cohorts will have dramatically different accumulations of 401(k) saving balances when they reach retirement age. Similar increases in eligibility are evident at all other ages. The increase in eligibility rates reflects the spread of 401(k) plans to more firms and especially to smaller employers.

More important than 401(k) eligibility is 401(k) participation. Using the same illustration of the findings, the percentage of 40 year olds participating in a 401(k) plan increased from 10% in 1984 to 48% in 1999. While only 6% of the cohort that attained age 30 in 1984 participated in a 401(k) plan, 44% of the cohort that attained age 30 by 2003 did so. Participation given eligibility also grew significantly. For example, in 1984, 47% of age-30 families who were eligible participated; this percent had increased to 71% by 2003. At age 45, participation given eligibility increased from 60 to 81% between 1984 and 2003. At every age, eligibility, participation given eligibility, and total participation increased very substantially over this period. The rapid spread of 401(k) eligibility and participation rates has resulted in rapidly growing contributions as well. Contributions to 401(k) plans were first made in 1982. By 1999 total contributions to 401(k) plans had reached \$152 billion and accounted for 66% of contributions to all private pension plans. The increase in total pension plan contributions between 1982 and 1999 was accounted for almost entirely by the increase in contributions to 401(k) plans.

The next step in the analysis has involved projecting forward the 401(k) asset savings of each cohort, and then aggregating together the cohorts to project the flow of total 401(k) savings. The projected average balance of a 65-year old in a 401(k) plan increases very substantially over the next 35 years. The average per person 401(k) assets is about \$14,000 in 2000, \$86,000 in 2020, and \$273,000 in 2040. The projected increase is due to the increase in the participation rates among more recent cohorts and to the increase in the number of years that 401(k) plans were available to successive cohorts. The 401(k) program effectively began in 1982 so cohorts retiring before 2020 could only make contributions over part of their working lives. Persons who attained age 65 in 2000 could have contributed to a 401(k) plan for a maximum of 18 years, and generally much less than 18 years. For the cohort that will attain age 65 in 2040, however, 401(k) plans will have been available over the entire working lives of many employees. That will make an enormous difference in their 401(k) balances in the future.

Aggregating together the individual cohort projections, total equity assets in 401(k) plans are projected to grow from about \$1.1 trillion in 2000 to about \$27 trillion in 2040. In continuing research, we will project the level of DB plan assets over the same time period, and then the level of assets in other retirement plans such as IRAs, Keoghs, and 403(b)s. Those projections should enable us to evaluate the potential effects of demographic trends on rates of return in financial markets.

The transition from DB to DC saving has other implications. For example, DC plans are less likely to encourage early retirement than DB plans. Thus employees may work longer in the future, and continue to make contributions to the plans until older ages than would be the case with employer contributions to DB plans. Also, unlike the retirement annuities provided under DB plans, retirees with accumulations in personal accounts have substantial flexibility in how they choose to draw down their assets. Very few retirees buy annuities with assets accumulated in personal accounts. Thus there is no scheduled withdrawal of funds from personal accounts. Current law requires retirees to begin making minimum distributions from traditional 401(k) plans at age 70½. Despite the multitude of decumulation options,

there has been little empirical analysis of when retirees actually begin withdrawals and how rapidly they draw down their account balances. We will give more attention to this issue in future work, and as new data enable us to analyze decumulation.

The full working paper is available on our website, www.nber.org/programs/ag/rrc/books&papers.html as paper NB05-01.

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