

# Retirement, Social Security deferral, and life annuity demand

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## 1. Motivation

Decisions about how to draw down on retirement wealth can have major implications for retirement security. For someone approaching retirement with both Social Security and private pension wealth, decisions must be made about when to claim Social Security, as well as when and how to tap into private pensions. In this research, I examine the determinants of these joint decisions.

Assets in a defined contribution pension can be withdrawn as a lump sum or at regular intervals, or they can be used to purchase a life annuity. Similarly, defined benefit pensions often offer a choice between a lump sum payout and a life annuity—in these instances, an individual who forgoes the lump sum “purchases” an annuity on the terms offered by the employer.

Delaying Social Security provides another way to annuitize retirement income. Social Security retired worker benefits are based on the monthly average of an individual’s highest 35 years of earnings, indexed for economy-wide wage growth. Applying a progressive formula to this average produces the individual’s primary insurance amount (PIA), the monthly benefit that is payable if the individual claims at full retirement age (FRA), which ranges from 65 for those born in 1937 and earlier to 67 for those born in 1960 or later. However, benefits may be claimed at any age between 62 and 70, with an actuarial reduction applied to claims before FRA and an actuarial increase applied to claims after FRA. By forgoing benefits now, an individual who delays claiming receives a larger future monthly benefit, indexed for inflation, for life. This increase in the monthly benefit represents the annuity purchased by forgoing current benefits.

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A large literature has shown that delaying Social Security can increase the expected present value of lifetime income for many people (e.g., Shoven and Slavov 2014a,b; Meyer and Reichenstein 2010; Reichenstein and Meyer 2021; Mahaney and Carlson 2008). That is, the Social Security delay annuity is offered on actuarially generous terms. These gains from delaying Social Security have become significant over the past two decades due to improvements in mortality, the increasing generosity of the actuarial adjustment for delay, and historically low real interest rates (which increase the present value of the gains from delay).

A standard life cycle model suggests that annuities are valuable in insuring against length-of-life risk (e.g., Yaari 1965). Empirically, however, people do not annuitize their retirement income to the extent predicted by the life cycle model—a phenomenon sometimes referred to as the “annuity puzzle” (e.g., Mitchell et al. 1999; Warner and Pleeter 2001). Moreover, despite the gains from delaying Social Security, most people claim at or before their FRA (see, e.g., Goda et al. 2018).

While private annuities are offered on terms that vary over time to reflect evolving mortality risk and interest rates, the terms of the annuity available through delaying Social Security are not adjusted to reflect these changes. In today’s environment, therefore the Social Security annuity is offered on more generous terms than private annuities (see, e.g., Bronshtein et al. 2020). Thus, observed Social Security claiming behavior suggests that most people do not purchase annuities even when they are offered on actuarially generous terms.

A few recent papers have examined the optimal combination of Social Security delay and private annuity purchases. Munnell, Wettstein, and Hou (2022) show that while the median household’s optimal strategy involves using private retirement saving to finance a delay in Social Security, higher-income households are better off using these funds to purchase a deferred annuity. Similarly, Horneff, Maurer, and Mitchell (2023) find similar results for less educated versus more educated households.

This paper adds to this recent discussion by examining *empirical* patterns of Social Security claiming, annuity commencement, and retirement. I use data from the Health and Retirement Study (HRS), a panel survey of adults aged 51 and older, and their spouses, conducted every other year starting in 1992. Using data through the 2018 wave of the survey, I identify a sample of individuals born between 1928 and 1950 who (1) have evidence of private pension wealth and (2) are observed to claim Social Security before the end of the sample period. I record each individual’s Social Security claiming age, life annuity start age, and retirement

age. The life annuity start date is missing for someone who has not started (or never will start) receiving a life annuity, and the retirement start date is missing for someone who has not yet retired. I then examine how a range of factors—including Social Security rules, employer-sponsored pension rules, health status, health insurance, demographic and socioeconomic characteristics, and the real interest rate—are related to the likelihood of retiring, claiming Social Security, and starting a life annuity at any given age.

## 2. Key findings

A preliminary finding is that the likelihood of pursuing a “parallel strategy”—either retiring and claiming Social Security at the same time or starting Social Security and a life annuity at the same time—has declined over time.

Figure 1a shows the cumulative fraction of the sample that has both retired and claimed Social Security at each age between 60 and 70. This fraction is broken down by whether the respondent was born in 1938 and earlier or after 1938. At ages 62 and full retirement age (between 65 and 66 for those in the sample), there are large increases in the probability of being receiving Social Security and being retired. However, these increases are larger for the older cohort. Figures 1b and 1c—which show, respectively, the cumulative fraction of the sample that has claimed Social Security without retiring, and the cumulative fraction of the sample that has retired without claiming Social Security—suggest that both behaviors are more common in the younger cohort.

Figure 2a shows the cumulative fraction of the sample that has started receiving both Social Security and a life annuity. Again, while there are large increases in the fraction of people receiving both types of income at key ages, these increases are larger in the older cohort. Figures 2b and 2c show, respectively, the cumulative fraction receiving Social Security but no life annuity and the cumulative fraction receiving a life annuity but no Social Security. These figures suggest that, at any age, the younger cohort has a higher likelihood of receiving one type of income without the other.

Regression analysis suggests that, at any given age, women, divorced individuals, primary earners and singles, and college-educated individuals, are less likely to initiate a parallel strategy. Becoming eligible for a defined benefit pension increases the likelihood of initiating a parallel strategy, as does becoming eligible for Medicare among individuals who have employer-sponsored health insurance without retiree coverage.

Consistent with Behaghel and Blau (2012) and Benítez-Silva and Yin (2009), reaching FRA age increases the probability

of starting Social Security. I also find that an increase in the delayed retirement credit—the percentage increase in PIA for delaying benefits past full retirement age—attenuates this effect. That is, the increase in the probability of claiming at full retirement age is smaller among those who face a more generous delayed retirement credit. In addition, the Social Security earnings test—which forces affected beneficiaries who continue to work to delay a portion (up to 100 percent) of their Social Security benefit—influences claiming behavior. Consistent with Song and Manchester (2007), Friedberg (2000), Gelber et al. (2022), and Gruber and Orszag (2003), I find that the elimination of the retirement earnings test for people at or above FRA—which occurred in 2000—accelerated claiming but had no statistically significant effect on labor force participation.

My analysis also suggests that poor health is correlated with earlier retirement (consistent with prior research by McGarry 2004; Blundell et al. 2020) and Social Security claiming (consistent with research by Hurd, Smith, and Zissimopoulos 2004; Glickman and Hermes 2015; Waldron 2002; Beauchamp and Wagner 2012; Goda et al. 2018; Delavande, Perry, and Willis 2006). Health insurance availability is also associated with retirement decisions. Among those with employer-sponsored health insurance that does not cover retirees, there is an increase in the probability of retiring at age 65 (Medicare eligibility age) relative to those with employer-sponsored health insurance that does cover retirees. This finding is consistent with the hypothesis that those who depend on their employers for health insurance and lack retiree coverage may wait until Medicare eligibility to retire. Prior research has found support for this hypothesis (e.g., Gruber and Madrian, 1995; Blau and Gilleskie, 2001; Nyce et al., 2013).

Finally, the results suggest that a higher real interest rate is associated with a greater probability of both retirement and annuity commencement. An increase in the interest rate can induce retirement by increasing the value of retirement assets. While retiring can be associated with starting a life annuity, a high interest rate also lowers annuity prices and may directly incentivize their purchase.

The regression results suggest several explanations for the decoupling of the retirement, Social Security claiming, and life annuity commencement. First, the decline of defined benefit pensions (which are often taken as an annuity upon retirement) may have reduced the probability of starting both Social Security and a life annuity at the same time. Second, the growing gains from delaying Social Security, may have incentivized delaying benefits beyond retirement. Third, the repeal of the earnings test for those at or above FRA may have incentivized claiming Social Security without retirement within this group. Finally, among workers with

employer-sponsored health insurance, there has been a decrease in the share of those whose plans cover retirees. This shift may have led to an increased propensity to wait for Medicare to retire.

### 3. Implications

These findings can help researchers, policy makers, and financial planners better understand people's retirement income choices. The life cycle model suggests that delaying Social Security and annuitizing private retirement saving may be optimal to insure against length-of-life risk. However, claiming Social Security early and not annuitizing private retirement assets may also be a rational choice for those with high discount rates relative to the real interest rate. The life cycle model predicts that such individuals will desire declining consumption over time and may therefore opt to avoid being locked into constant post-retirement consumption by annuitizing their wealth (see Scott et al. 2021). Delaying Social Security while not annuitizing private retirement saving could also be a rational choice. This choice involves “buying” an annuity from Social Security by delaying benefits on actuarially generous terms but forgoing further annuitization of assets on market terms.

However, when real interest rates are low, those who claim Social Security early and simultaneously purchase an annuity with private retirement assets may be forgoing an arbitrage opportunity. As discussed by Bronshtein et al. (2020), these individuals are purchasing a higher-priced annuity when a lower-priced annuity (through delaying Social Security) is available. The findings in this research are consistent with that story. As interest rates have declined and the Social Security delay annuity has become more attractive relative to private alternatives, use of the parallel strategy has also become less common.

These results also have implications for the design of Social Security. Although benefits increase more or less continuously when claiming is delayed from age 62 to age 70, making the designation of an FRA within that range arbitrary, individuals have an increased likelihood of claiming and retiring when they reach FRA. As discussed by Behagel and Blau (2012), this finding suggests that “behavioral” factors are at work in the retirement and claiming decisions. I also find that a more generous actuarial adjustment for delaying Social Security increases the probability of delaying benefits among those who have reached full retirement age. However, there is no statistically significant relationship with labor force participation. Similarly, while eliminating the earnings test incentivizes delayed claiming, it is not associated with a reduction in labor force participation.

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FIGURE 1A. FRACTION RECEIVING SOCIAL SECURITY AND RETIRED, BY COHORT

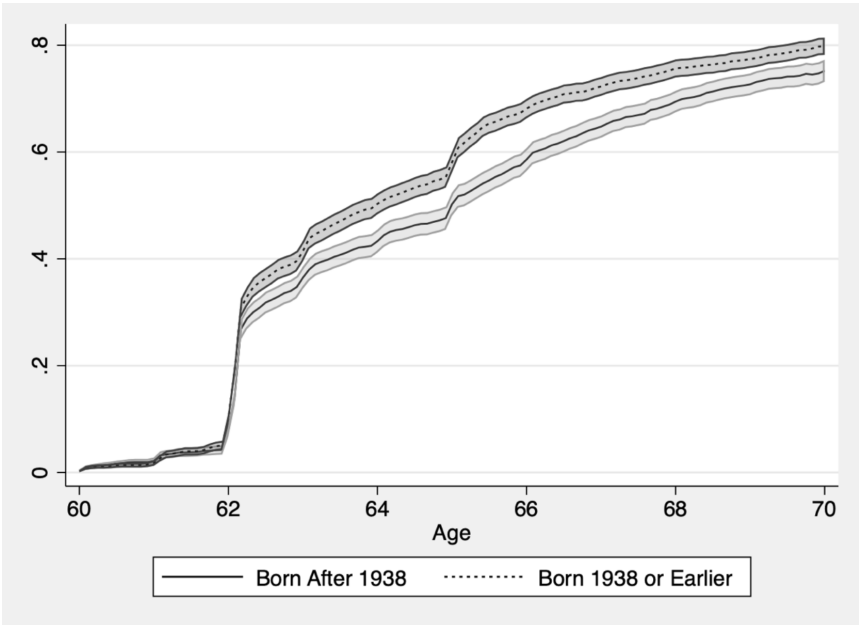


FIGURE 1B. FRACTION RECEIVING SOCIAL SECURITY WHILE NOT RETIRED, BY COHORT

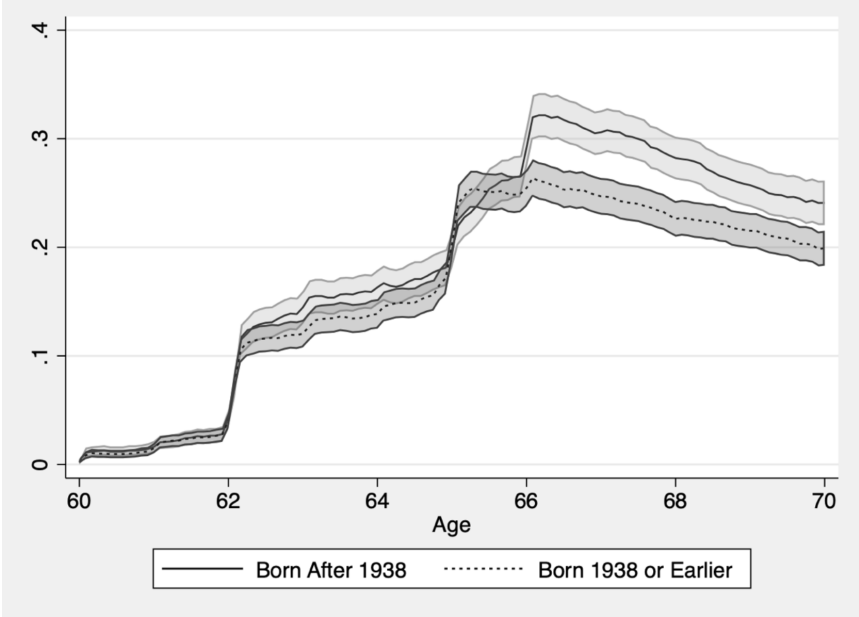


FIGURE 1C. FRACTION RETIRED WHILE NOT RECEIVING SOCIAL SECURITY, BY COHORT

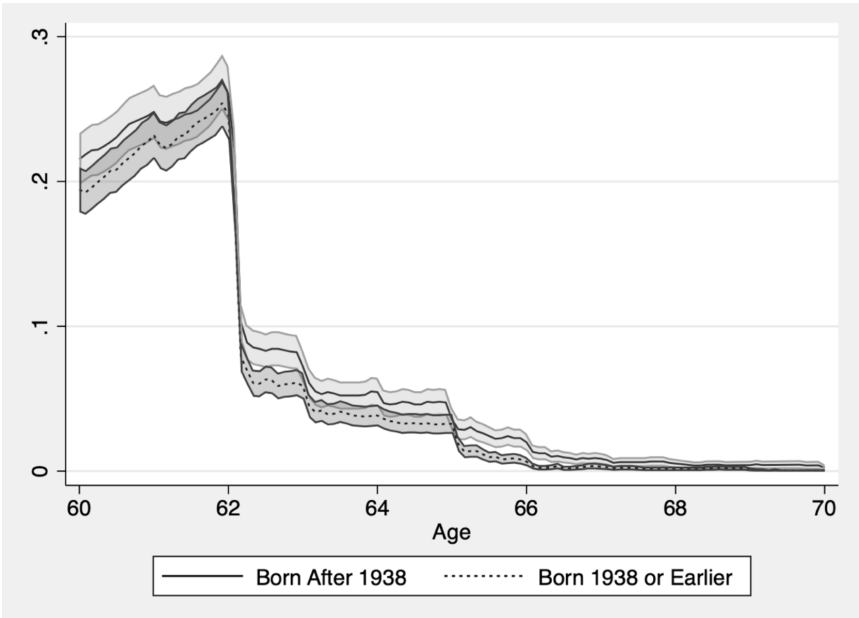


FIGURE 2A. FRACTION RECEIVING SOCIAL SECURITY AND LIFE ANNUITY, BY COHORT

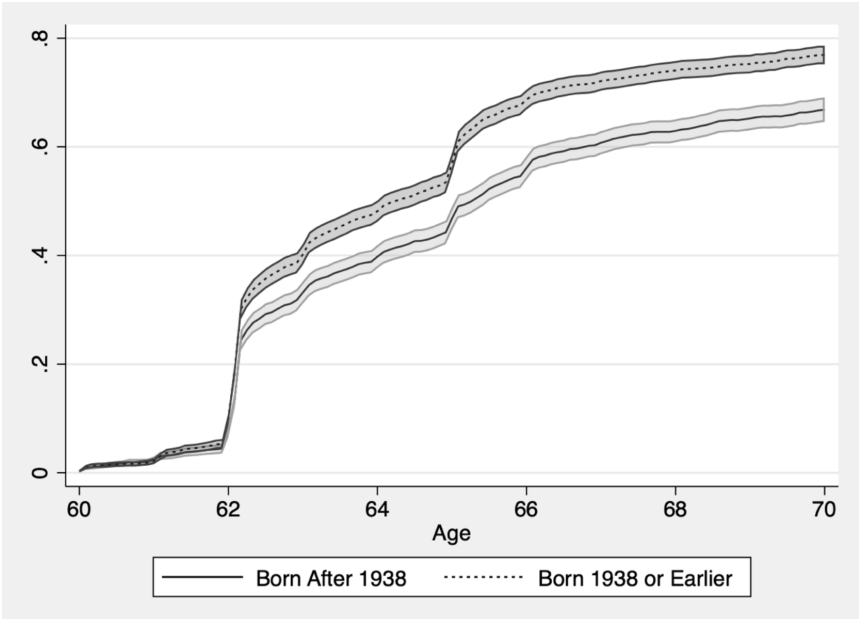


FIGURE 2B. FRACTION RECEIVING SOCIAL SECURITY WITHOUT LIFE ANNUITY, BY COHORT

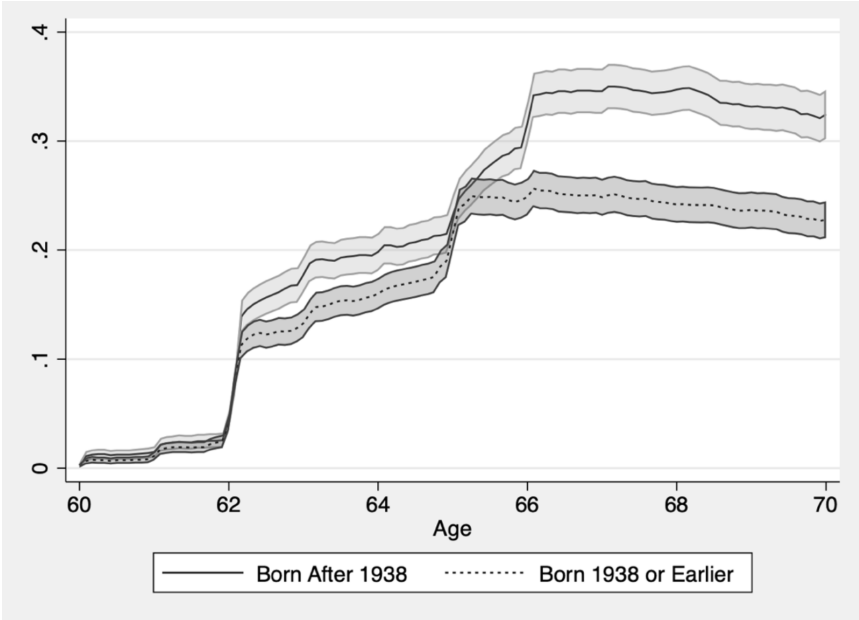
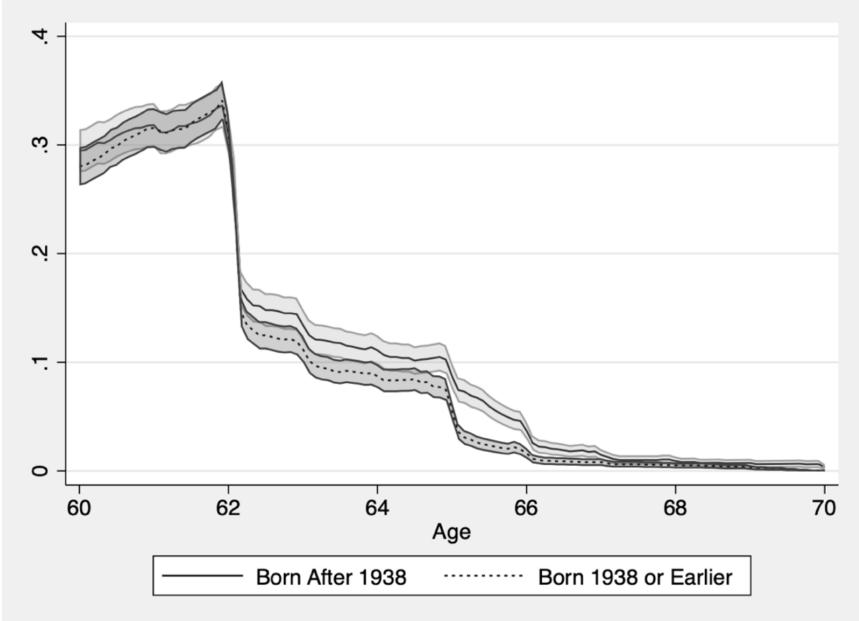


FIGURE 2C. FRACTION RECEIVING LIFE ANNUITY WITHOUT SOCIAL SECURITY, BY COHORT





## About the author

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