GUEST EDITORIAL

Jason S. Scott
Managing Director, Retiree Research Center, Financial Engines, Inc.
Palo Alto, California

Household Alpha and Social Security

In a recent piece in this journal, Charles Ellis (2011) exhorted investment professionals to stop focusing incessantly on the "losers' game" of beating the market and instead focus more on the "winners' game" of helping clients understand and achieve their financial goals more broadly defined. In his presidential address to the American Finance Association a few years ago, John Campbell (2006) similarly lamented the substantial focus that financial researchers in academe place on asset pricing while neglecting the important category of household finance. Both views call for a focus on creating value by helping households make better financial decisions—essentially, earn a household alpha. If, as researchers and practitioners, we accept the need to expand our thinking from earning an investment alpha to earning a household alpha, where should we look to find sources of household alpha? In this piece, I examine the value a U.S. household can extract from better Social Security decisions and compare that value with the potential gains from traditional investment alpha.

Few people seriously evaluate their options prior to making perhaps the most important financial decision they will ever make: deciding when and how to claim their Social Security benefits. Retirees can begin receiving their benefits anytime between the ages of 62 and 70. Claiming at a later age results in a larger annual benefit, although the size of the increase can vary substantially. Determining whether the larger benefit is financially advantageous depends on marital status, interest rates, and life expectancy. Given the variety of options and the financial magnitude of the decision, one might expect to observe U.S. retirees using a wide range of strategies. However, most Americans start collecting their benefits at age 62 if they are no longer employed; if they are still working, they typically start collecting within two months of leaving the labor force (see Shoven and Slavov 2012). Most Americans view starting Social Security benefits as simply something that you do upon retiring.[1] As a financial decision, however, this naive strategy can prove a costly mistake.

Valuing a Social Security Benefit

To analyze various claiming strategies, we need to assign a financial value to a Social Security benefit. For this analysis, we can use net present value (NPV).[2] In a standard NPV approach, each future benefit payment is a cash flow that we discount to bring the value back to the present. For Social Security payments, we need to apply both a time and a mortality discount—because you must be alive to receive a benefit. The NPV of all payments is the following sum:

$$\text{NPV} = \sum_{t=0}^{T} (CI_t)(S_t)\left[\frac{1}{I_t(1+r_t)^t}\right].$$

Here, T is the maximum number of years over which the benefit could pay out. The product of the current benefit, C, and a cumulative inflation factor, I_t, represents each annual cash flow. S_t is the recipient's survival probability, and the final term captures a time value of money discount. Social Security represents a government promise for an inflation-protected benefit payout. Thus, Treasury Inflation-Protected Securities (TIPS) represent a natural security to use for estimating the real rate. A \$1 TIPS investment pays out $I_t(1 + r_t)^t$ after t years, where r_t represents the real yield. Valuing the Social Security benefit with a TIPS discount rate is convenient because the benefit and the discount share a similar inflation factor. In the current economic environment, the formula can be further simplified because the real yield on TIPS is approximately 0%.[3] Assuming a 0% real rate of interest implies that the NPV is the product of the current

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benefit, C, and the sum of the survival rates (i.e., life expectancy, L):

$$\text{NPV} = (C)(L).$$

To illustrate the NPV calculation, let us consider John, a 66-year-old male who has just retired and is eligible to claim his "full retirement" benefit from Social Security. On the basis of average mortality tables from the Social Security Administration, John has a life expectancy of 18 years.[4] If his benefit at age 66 is $18,000 a year, the total value of his Social Security benefit would be $324,000.

Delaying Social Security—Single

If we assume that John has recently retired, he is an odds-on favorite to begin claiming his Social Security benefit right away. However, given that John can defer claiming and receive a larger annual benefit, is an immediate claim at age 66 optimal? What if, instead of claiming at age 66, John decides to defer claiming his benefit until age 67? Delaying by a year costs John his $18,000 payment at age 66 but increases all his subsequent benefit payouts by 8%, or $1,440. Given John's life expectancy, he will receive, on average, 17 years of increased payouts. The change in NPV by delaying until 67 is $–\$18{,}000 + (\$1{,}440)(L - 1) = \$6{,}480$.[5] Delaying Social Security benefits is an alpha-generating investment. John can invest $18,000 to defer claiming his benefit for a year and earn an increase of $6,480 in NPV. Thus, the total value of his Social Security benefit would be $330,480.

Delaying Social Security—Married

Household financial decisions are often much more complicated for couples than for single individuals, and such is the case with Social Security. With couples, both spouses have the potential to claim an earned benefit based on their own work history, a spousal benefit based on their spouse's work history, or both. To illustrate, let us assume that John's spouse, Mary, is also 66 years old and currently receives a Social Security benefit of $12,000 a year. Introducing Mary into the analysis alters it in two significant ways. First, John has the option of claiming a spousal benefit *while* choosing to defer and grow his own earned benefit. The spousal benefit is half the earned benefit, and so John can receive a $6,000 benefit. Delaying by a year now costs John only a net $12,000 instead of the full $18,000. The second difference concerns the benefit rules for a surviving spouse. If either John or Mary should die, the surviving spouse receives the *larger* of the two earned benefits. Because John's earned benefit is larger than Mary's, deferring his benefit increases not only the payout for his life but also the surviving spouse's payout. In effect, John is receiving an increased joint life annuity instead of an increased single life annuity. Given that John and Mary are both 66, their combined life expectancy is approximately 23.6 years—5.6 years longer than John's alone.

Combining these two adjustments makes a significant impact on the value of deferral. As a single male, John increased his NPV by $6,480 through deferral. The spousal benefit increases the NPV by $6,000, and the potential for a surviving spouse adds another $8,064 in value. Altogether, the NPV increase from deferring John's Social Security for a single year is $20,544. In this example, the Social Security Administration is offering John a pretty good investment opportunity. He can invest $12,000 to facilitate deferral for one year, and then the household can enjoy an additional $1,440 a year for as long as either spouse survives. Although John and Mary are not guaranteed to receive more if John defers his benefit, the odds are very much in their favor. After nine years and four months, the cumulative increase in payouts exceeds the upfront investment. Because mortality is fairly low for people in their late 60s or early 70s, the chance that at least one person in the household will survive long enough to earn a profit is approximately 97%. Alternatively, one could characterize the deferral as equivalent to John and Mary spending $12,000 to purchase an incremental annuity payout from the U.S. government that has a value of $32,544. And although the total payouts may or may not exceed the $12,000 investment, it is clearly a dominant strategy to purchase this Social Security annuity rather than any other annuity in the retail marketplace.

Conclusion: Household Alpha from Social Security or Investments?

Deferring Social Security for one year created an NPV gain of $20,544 for John and Mary. The value that they could get from investment alpha over the same year would depend on both the amount of alpha generated and the size of the investment portfolio. For many individuals, investment alpha is a minor concern precisely because both of these quantities are small. As numerous studies have documented, generating investment alpha is very challenging. The average money manager generates negative alpha net of fees, and even an outstanding money manager may generate only 100 bps in *ex ante* alpha.[6] Even if John and Mary could find one of these superior money managers, they would need to invest more than $2 million to garner

comparable value. Although some retirees may have sizable portfolios, very few have sufficient assets to blithely ignore optimizing Social Security.

The benefit level for John and Mary at age 66 corresponds closely to the average Social Security benefit for a retired worker. John and Mary average $15,000 in annual benefits, and the Social Security Administration recently reported that the average annual Social Security benefit for a retired worker is $14,760.[7] If John and Mary are also typical in the amount of money they have saved for retirement, their portfolio is much smaller than $2 million. For comparison, the median 401(k) balance for a 66-year-old is $44,840.[8] With respect to the median balance, the benefit of deferring Social Security for one year is comparable to earning 4,500 bps in alpha! Both John and Mary might have their own 401(k) as well as a comparably sized IRA. But even with four such modest accounts, the total portfolio is still less than $200,000. With a $200,000 portfolio, following a good Social Security strategy for one year is 10 times more valuable than investing the entire portfolio with a manager able to generate 100 bps in alpha.

To illustrate the potential gains from improved Social Security decisions, I examined the impact of changing John's Social Security strategy for a single year. But John is not required to take his benefit at 67. Instead, he could continue to defer up to age 70 and realize even larger gains in NPV. In general, maximizing Social Security NPV involves evaluating the entire range of earned and spousal claiming alternatives. Important considerations include the age and health of the retirees, the relative size of each person's earned benefit, and the current interest rate environment. In most cases, the resulting optimized strategy would create substantial value relative to the naive strategy typically followed. Given the modest amount of savings most people have accumulated by the time they retire, many will find that the value from optimizing Social Security exceeds all accumulated retirement savings. That result alone strongly supports the notion championed by both Charles Ellis and John Campbell: Focusing more on household financial decisions and less on beating the market is critical and would indeed be the "winners' game."

Notes

1. Importantly, this claiming strategy is uncorrelated with household wealth, which suggests that it is not a result of liquidity needs.
2. Given that we are dealing with households, one could argue for a utility measure. Although beyond the scope of this piece, a utility measure would likely reinforce the desirability of deferring the larger benefit because it would shift wealth to states in which the household, in the form of a surviving spouse, relies on relatively low income.
3. As of 7 June 2012, the 10-year, 20-year, and 30-year TIPS yields were –54, +10, and +52 bps, respectively.
4. See www.socialsecurity.gov/OACT/population/longevity.html for a life expectancy calculator. Note that throughout this article, "life expectancy" refers to how many more years one is expected to live, not one's expected age at death.
5. Note that these calculations assume annual beginning-of-period payments. Although actual Social Security benefits are paid monthly, a monthly model needlessly complicates the exposition without materially changing the results.
6. For a good survey of the recent performance literature—and evidence that this money manager is indeed a skilled one—see Jones and Wermers (2011).
7. This figure is as of March 2012. See http://ssa-custhelp.ssa.gov/app/answers/detail/a_id/13/~/average-monthly-social-security-benefit-for-a-retired-worker.
8. The median balance is as of May 2012 and is based on a sample of 60,770 participants who were 66 years old.

References

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