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Social Security: a longevity free lunch | 6 July 2017

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- Social Security provides a unique combination of benefits, including guaranteed income, inflation protection, and a hedge to longevity risk.
- Social security currently may be worth USD 1mn or more for a couple.
- The claiming decision should not be solely made based on maximizing a forward-looking Social Security payout.
- We suggest a dynamic claiming approach that enables households to mitigate longevity risk and sequence risk while also maximizing the expect value of their benefits.

Social Security holds a unique place on retirees' balance sheets since the program provides inflation-adjusted income for the lifetime of the recipient. There are other assets that provide some of the same characteristics as Social Security, but it is unusual to find all of the characteristics in combination. For instance, investors can purchase annuities, which will provide lifetime income, but they are rarely available with true inflation protection. On the other hand, Treasury Inflation Protected Securities (TIPS) provide inflation protection, but don't hedge the owner against longevity risk. Social Security is truly unique in that respect.

Trying to "optimize" the decision around when to start claiming Social Security is like trying to perfectly time the birth of a child. There are some general guidelines to follow to increase the odds, but unless a doctor intervenes, things are unlikely to go exactly as planned. Even so, we believe there are some broad considerations retirees can use to make a good decision that we cover in this report.

The hidden million dollar asset

An individual retiring at full retirement age ("FRA", see Fig. 1) and has qualified for the largest primary insurance amount (PIA) benefit will receive approximately USD 32,000 of income, adjusted upward for inflation, each year for the remainder of his or her life. Depending on your socioeconomic position in life, that may or may not seem like a significant amount of money.

Fig. 1: Full retirement age based on year of birth

Year of Birth	Full Retirement Age
1937 or earlier	65
1938	65 and 2 months
1939	65 and 4 months
1940	65 and 6 months
1941	65 and 8 months
1942	65 and 10 months
1943--1954	66
1955	66 and 2 months
1956	66 and 4 months
1957	66 and 6 months
1958	66 and 8 months
1959	66 and 10 months
1960 and later	67

Source: Social Security Administration, UBS

What is social security worth?

$1.2M

Rough value of social security for a couple at full retirement age

Based on current interest rates and life expectancies

Source: UBS

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Perhaps the better perspective is to calculate how much a retiree would have to save to create the same guaranteed income stream they get from Social Security. Today, bonds pay a very low rate of interest (Fig. 2), which means replicating guaranteed inflation-adjusted income is very expensive.

Based on current interest rates and life expectancies, the PIA value of Social Security is roughly USD 540,000 for men and USD 615,000 for women at FRA. Said otherwise, a husband and wife who both receive the largest PIA benefit have an asset, guaranteed by the United States government, that's worth about USD 1.2mn. Nearly everyone would agree that USD 1.2mn is a substantial asset.

Now or later?

The data around Social Security claiming indicates that most retirees take benefits early in exchange for a reduced monthly benefit. Approximately 42% of workers claim Social Security at 62, which is the earliest possible age. Another 34% claim at full retirement age, and only 2% wait until age 70. The remaining retirees claim at ages somewhere in between those mileposts (Fig. 3).

When do people typically claim social security?

42%	34%	2%
of workers claim social security at age 62	of workers claim social security at age 67 (full retirement)	of workers claim social security at age 70

Source: Alicia H. Munnell, Geoffrey T. Sanzenbacher, Anthony Webb, and Christopher M. Gillis, "Are early claimers making a mistake?" CRR WP 2016-5 July 2016.

Social Security claiming is structured such that a worker's monthly benefit increases or decreases based on the age at which they file (Fig. 4). Workers who file before their full retirement age will receive lower monthly benefits, but receive the benefits for a longer period. Workers who delay filing will receive a larger benefit, but for a shorter period.

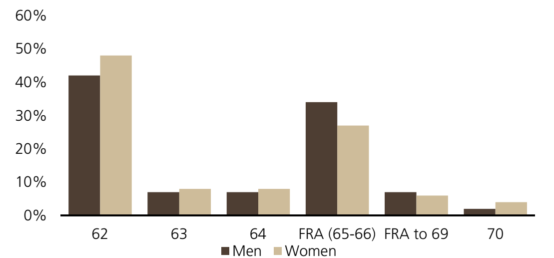
A lot of research has been published that focuses on maximizing the expected value of Social Security benefits, but here's the thing: the increased monthly payment that comes from delaying is, for the most part, actuarially fair. That means there's no free lunch from an expected-value standpoint.

Research in the *Journal of Financial Planning*[1] indicates that the expected-value breakeven between claiming at age 62 and FRA occurs around age 81, assuming reasonable forecasts for inflation and investment returns. This breakeven means that if the retiree passes away prior to age 81, he or she would have been better off taking benefits at age 62 than at FRA.

Fig. 2: Inflation-adjusted interest rates remain low
Yield on 10-year TIPS

Source: Bloomberg, UBS

Fig. 3: Most retirees start benefits at FRA or earlier
Distribution of claims for Social Security by age



Source: Alicia H. Munnell, Geoffrey T. Sanzenbacher, Anthony Webb, and Christopher M. Gillis, "Are early claimers making a mistake?" CRR WP 2016-5 July 2016.

Fig. 4: Benefit levels change with filing age
Assumes FRA of 66

Filing age	Change in monthly benefits
62	-25%
63	-20%
64	-13.30%
65	-6.70%
66/FRA	------
67	8%
68	16%
69	24%
70	32%

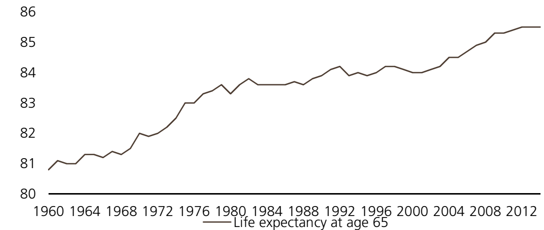
Source: Social Security Administration, UBS

The breakeven between claiming at FRA and age 70, based on similar assumptions, falls closer to age 86. Again, this breakeven means that if the retiree passes away prior to age 86, he or she would have been better off taking benefits at FRA than at 70.

Longevity, of course, will be a main determinant as to whether someone claimed at the right time to maximize their benefit. Median life expectancy at the age of 65 is about 20 years, so these breakevens fall pretty close to life expectancy (Fig. 5). Unless the retiree has a good sense of her likely longevity, the breakeven analysis isn't going to be overly definitive. However, there are other variables that also matter, like tax rates, other sources of earned income, the rate of return received on investment assets, and inflation.

Fig. 5: Current 65 year-olds have a life expectancy of over 20 years

Life expectancy at age 65, 1960-2014



Source: CDC/NCHS, National Vital Statistics System, public-use Mortality Files, UBS.

Social Security as a bond portfolio

The Social Security decision shouldn't be made based on maximizing a forward-looking Social Security payout in isolation.

From an investment standpoint, retirees should think about Social Security as a bond position on their balance sheet that defaults when they pass away. Social Security works in conjunction with their other investment assets as a substitute for fixed income, and essentially enables a family to take more risk with their liquid investment assets than they otherwise could.

Why does the positioning of Social Security in a portfolio matter? Sequence risk represents one of the main investment risks at the start of retirement. Sequence risk is the situation where a retiree decides to withdraw a prudent percentage of her assets (e.g., 3–4%) at the start of retirement, but a bear market turns a 4% spend into 5%, 6%, or 7% and results in the forced selling of risk assets, like equities. Recently, individuals who retired in 1999 and 2007 experienced significant sequence risk. By providing guaranteed income, Social Security has the potential to alleviate sequence risk by allowing an investor to not touch her risk assets during a bear market.

A decision that is **difficult to time**

Trying to optimize the decision around when to start claiming is like trying to perfectly time the birth of a child.

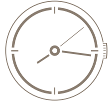
Source: UBS

A dynamic claiming decision

When it comes to claiming Social Security, the right question is how Social Security can be used, as part of the overall investment plan, to reach the best outcome for the family.

Longevity risk is the first and most important consideration. If a retiree's financial plan indicates there's a strong potential to outlive her assets, delaying filing will maximize late-life income for the retiree if she becomes entirely dependent on Social Security for income.

Guidelines for making claim decisions


1 Longevity risk

2 Mitigating sequence risk

3 Maximizing return

Source: UBS

Some retirees will opt to claim at retirement, instead of waiting until age 70, as a way to populate their portfolio with an asset that produces safe income. There's nothing in the data we have reviewed that indicates they are making a major "expected value" mistake by doing so – unless they know exactly when they will pass away (in which case the claiming decision becomes very easy to make). However, early, non-liquidity-constrained claimers are significantly undervaluing the longevity insurance aspect of Social Security.

Allow us to suggest a more dynamic option. The inflation-adjusted return on waiting to claim between the ages of 62 and 70 is about 3% for men, 4% for women, and 5% overall for a couple. That's about the same inflation-adjusted return we expect from a moderately aggressive portfolio, so attempting to capture the "delayed filing return" makes sense.

However, we don't want to incur *actual* sequence risk in our investment portfolio in order to increase a *hypothetical* Social Security return. A dynamic strategy would be to delay filing until the first of 1) reaching age 70 or 2) experiencing a bear market, at which point Social Security could be turned on to reduce spending out of the investment portfolio. Of course, households can take an even more dynamic approach by staging when each spouse claims Social Security to maximize the overall value of the Longevity hedge while also protecting their liquid financial assets early in retirement. We believe comprehensive financial plan is the best way to make that decision.

Increasing life expectancy means people will need more income later in life

80.8	85.5
Life expectancy of a 65 year old in 1960	Life expectancy of a 65 year old in 2016

Source: CDC/NCHS, National Vital Statistics System, public-use Mortality Files, UBS.

When should someone claim social security?

Postpone to 67-70 if possible

Source: UBS

Additional resources

· Retirees can check out their Social Security Statement, including benefit estimates, at https://www.ssa.gov/.

· Subscribe to our weekly podcast, *Modern Retirement*, where we discuss Social Security and other retirement-related issues. You can get it on iTunes and at https://www.ubs.com/us/en/wealth/misc/researchpodcasts.html.

[1]Lemons, Doug, "When to Start Collecting Social Security Benefits: A Break-Even Analysis." Journal of Financial Planning. 2013.

Appendix

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