Take the Money:
Should You Draw Social Security Benefits Early?

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Introduction:

For most Americans, decisions regarding their federal benefits in retirement are some of the most significant factors in their financial well-being. At the same time, these decisions can also be extremely complex and dependent on age, marital status, income level, life expectancy, availability of other assets, etc. As such, many prospective retirees require professional guidance in reaching these decisions. This study addresses a specific component of these decisions regarding the optimal timing to initiate social security retirement insurance (SSRI) benefits. We use Monte Carlo simulation analyses, incorporating over eight decades of market data, to model the lifetime SSRI benefit resulting from the various timing options for commencing benefits.

Relevant Social Security Rules:

Our focus is on the timing option faced by Americans born between 1943 and 1954. Under current Social Security rules, Americans born between 1943 and 1954 are eligible for full retirement benefits at age 66. The retirement benefit is based on what the Social Security Administration calls a person's Primary Insurance Amount (PIA).[i] For our purposes, we will ignore all of the details used to calculate the typical beneficiary's PIA such as bend points, wage index amounts, average indexed monthly earnings, automatic determinations, etc. Instead, we will base our analyses on an assumed full retirement benefit (100 percent) adjusted upward or downward based on the retiree's election of commencement of SSRI benefits.

For those electing to commence SSRI benefits before full retirement age of 66, the benefit is reduced 5/9 of one percent for each month before normal retirement age, up to 36 months. If the number of months exceeds 36, then the benefit is further reduced 5/12 of one percent per additional month.[ii] Since the earliest SSRI benefits can be drawn is at age 62, for individuals in this age bracket (i.e. those who will reach age 62 by 2016) the maximum benefit reduction for early commencement of benefits is 25 percent (36 months x 5/9 + 12 months x 5/12). One can also choose to defer the commencement of SSRI benefits which results in an increase of eight percent per year of delay, up to age 70, resulting in a maximum increase of 32 percent, for those born in 1943 or later.[iii] There is no added benefit from deferral of SSRI payments beyond age 70.

According to the latest data available from the Social Security Administration, 73.2 percent of SSRI recipients (70.9 percent of men and 75.7 percent of women) opted for early retirement as of November 2007.[iv] Many of those who elect early SSRI benefits may do so out of necessity; lack of other sources of income, inability to find work, etc. Others must make an economic decision based on expected lifetime benefits.

Those who commence SSRI benefits prior to age 66 and continue to work, face a reduction in SSRI payments depending on the amount of earnings. As of 2012, earnings up to $14,640 would result in no reduction in benefits. Earnings between $14,640 and $38,880 would result in a one dollar reduction in benefits for every two dollars in earnings, and earnings above $38,880 would result in a one dollar reduction in benefits for every three dollars in earnings. However, these reductions are offset once the retiree reaches full retirement age. Benefits at age 66 are recalculated, and credit is assigned for any months in which benefits were reduced due to earned income. After age 66, earned income has no impact on SSRI benefits for those receiving benefits.

Our analyses focus on the comparative present value of lifetime benefits resulting from commencing benefits at ages 62, 66, or 70, since these ages represent the minimum, full, and maximum benefit levels available to potential retirees reaching age 62 in or before 2016. We further address the impact of benefit reductions resulting from income earned by continuing to work while drawing SSRI benefits.

Simplifying assumptions:

In order to remove some of the individual circumstances that further complicate the timing decision we are addressing, and to make our analyses more broadly applicable, we make some simplifying assumptions. We assume the beneficiary will not improve the highest 35 years of indexed earnings for his or her benefit computation by working additional years after age 62. For many soon-to-be-retired, the additional years of work could very well improve this part of the calculation because, for example, stay at home parents may have several years of zero earnings in their work history at age 62, and by working additional years after age 62, they would be able to trade some zero years for positive earning years.[v]

In addition, we ignore any and all tax effects associated with filing for early retirement benefits, or deferring benefits. One's federal, state and local income tax obligations will, in all likelihood, be greatly affected by his or her total taxable income. Currently, 50 percent of SSRI benefits are

subject to federal tax for individuals with income (including 50 percent of SSRI benefits) between $25,000 and $34,000, and for joint filers with income (including 50 percent of SSRI benefits) between $32,000 and $44,000. For single filers with income (including 50 percent of SSRI benefits) above $34,000 and joint filers with income (including 50 percent of SSRI benefits) above $44,000, 85 percent of SSRI benefits are included in federal taxable income.[vi] State taxation of SSRI benefits vary widely by jurisdiction.

Our analyses assume the beneficiary has the means to do without the cash flow from his or her benefits in the years between age 62 and age 70. This implies the ability to invest the benefits if collection starts before age 70, rather than deferring benefits until age 70. Selecting early SSRI benefits can also be thought of as a decision to avoid withdrawing funds from other retirement plans (e.g.: IRAs, 401k plans, etc.), allowing additional years of tax free, compounded returns in these accounts.[vii]

We limit our analyses to single workers (or married workers of similar age) thus excluding the complications of claiming strategies based on survivor benefits. Finally, we will assume benefits are collected on an end-of-year basis. This assumption simplifies the calculations and few (if any) salient details are lost with such an assumption.

Methodology:

We start our analyses by assigning a value of 100 for the full SSRI benefit attained at the "normal" retirement age of 66. Therefore, SSRI benefits commenced at age 62 would have a value of 75, while SSRI benefits commenced at age 70 have a value of 132, as explained above. We estimate that benefits will increase annually at the CPI rate, and assume that benefits commencing prior to age 70 can be invested in a portfolio consisting of a mix of large cap stocks and corporate bonds, and can be used to fund additional withdrawals commencing at age 66 (or 70) as a self-funded annuity.

We examine the series of cash flows that would result from the following scenarios:

a) Individual commences reduced benefits (75 percent) at age 62 and invests these benefits in a portfolio consisting of a mix of large cap stocks and corporate bonds. At age 66, he or she starts withdrawing an annuity amount from this portfolio based on his or her life expectancy, which will supplement the reduced SSRI benefits.

b) Individual commences reduced benefits (75 percent) at age 62 and invests these benefits in a portfolio consisting of a mix of large cap stocks and corporate bonds. At age 70, he or she starts withdrawing an annuity amount from this portfolio based on his or her life expectancy, which will supplement the reduced SSRI benefits.

c) Individual commences full retirement benefits (100 percent) at the "normal" retirement age of 66 and invests these benefits in a portfolio consisting of a mix of large cap stocks and corporate bonds. At age 70, he or she starts withdrawing an annuity amount from this portfolio based on his or her life expectancy, which will supplement the reduced SSRI benefits.

d) Individual commences full retirement benefits (100 percent) at the "normal" retirement age of 66.

e) Individual defers commencement of benefits until age 70 and commences increased (132 percent) benefits at age 70.

In addressing similar questions, Dalton (2006) employs a spreadsheet analyses with a range of return assumptions, and concludes that deferral of SSRI benefits would be advisable under low investment rates. Claggett et al (2012) consider the choice between commencing benefits at "normal" retirement age and various deferral periods, based on the "yield" resulting from deferral, at various CPI and longevity combinations. Meyer and Reichenstein (2012) employ a "retirement calculator" with a zero percent real return assumption to identify the present value maximizing claiming age. They show that the optimum claiming age increases, based on life expectancy, but with suboptimal breaks resulting from the uneven deferral benefits under current social security rules. Shoven and Slavov (2012) also find that the value maximizing claiming age for singles rises at lower interest rates, with deferral beyond age 62 recommended for interest rates below 3.5 percent.

In order to compute the present values of future cash flow streams for the above scenarios, we employ Monte Carlo simulation analyses using Crystal Ball simulation software. This is in contrast to using arbitrary point estimates of the relevant rates of return as done in prior studies. We simulate the returns on long-term corporate bonds, large cap stocks, the inflation rate (CPI) and long-term Treasury bonds using the Ibbotson data from 1926 through 2011. The simulated return vectors are correlated using the historical data to formulate the correlations. In computing the cash flow streams, we assume benefits grow annually at the simulated CPI rate. The investment opportunities for "early" benefits are estimated by a rate made up of various proportions of the simulated corporate bond and equity rates. The investment rate starts at 100 percent bond return and changes by 20 percent increments to 100 percent equity return. This series of future values is discounted to the present using the simulated long-term Treasury bond rate.

Computation of lifetime distributions in each case above requires longevity estimates. The Social Security Administration actuarial life tables indicate[viii] a male at age 62 has an average remaining life expectancy of 19.74 years (i.e.: can expect to reach age 82), and a female at age 62 has an average remaining life expectancy of 22.63 years (i.e.: can expect to reach age 85) . At age 70, a male has an average remaining life expectancy of 14.03 (i.e.: can expect to live to 84) and a female has average remaining life expectancy of 16.33 years (i.e.: can expect to live 86). In conducting our analyses, we estimate lifetime cash flows through age 86, 91 and 96.

Results:

Table 1 summarizes the results of our simulation analyses based on 1000 simulated outcomes, comparing the present values of the lifetime benefits resulting from the five claiming strategies identified in the previous section. The table entries indicate the percentage of the 1000 simulations in which a given strategy produced a higher lifetime present value than the

alternative strategy. The entries in the first column of Table 1 identify the likelihood that "strategy a" (claiming SSRI benefits at age 62, and investing the benefits to support additional future withdrawals at age 66) results in a higher lifetime present value than "strategy d" (claiming SSRI benefits at the "normal" retirement age of 66).

If life expectancy is 86, all equity/debt combinations in the simulated investment portfolio result in a high likelihood that the early-claiming strategy will be superior. An investment portfolio consisting of 80 percent equity and 20 percent bonds produces the highest likelihood that the early-claiming strategy will beat the "normal" retirement benefits 91.62 percent of the time. If we assume the retiree will survive until age 91, all investment strategies still result in a better than 50 percent likelihood of a higher lifetime present value for the early-claiming strategy, with the 80 percent equity portfolio producing the best results with an 81.38 percent likelihood that the early-claiming strategy will outperform the "normal" retirement strategy.

With a longer anticipated life span, the likelihood that the early-claiming strategy will outperform the "normal" retirement strategy declines. This is as expected. However, even at a lifespan of 96 years, the early-claiming strategy has a 79.46 percent likelihood of outperforming the "normal" retirement strategy, when the funds from early benefits are invested in a portfolio of 80 percent equity and 20 percent bonds.[ix]

Table 1

Probabilities based on 1000 simulations, that the PV of lifetime benefits under an early-claiming strategy with invested proceeds will exceed that of a similar deferred-claiming strategy for various longevity assumptions and portfolio compositions.

	P (pv of strategy a > pv of strategy d)	**P (pv of strategy b > pv of strategy e)**	**P (pv of strategy c > pv of strategy e)**
Survive until 86			
100/0 percent Equity/Bond	90.77	94.50	96.11
80/20 percent Equity/Bond	92.26	95.69	96.95
60/40 percent Equity/Bond	91.62	96.19	96.76
40/60 percent Equity/Bond	90.67	96.05	96.93
20/80 percent Equity/Bond	84.93	94.43	95.76
0/100 percent Equity/Bond	73.88	85.93	90.02
Survive until 91			
100/0 percent Equity/Bond	80.55	86.32	88.09
80/20 percent Equity/Bond	81.38	87.26	89.11
60/40 percent Equity/Bond	80.34	87.13	89.54
40/60 percent Equity/Bond	76.06	83.95	87.22
20/80 percent Equity/Bond	65.69	74.54	81.24

0/100 percent Equity/Bond	50.51	54.24	66.97
Survive until 96			
100/0 percent Equity/Bond	79.86	85.34	87.35
80/20 percent Equity/Bond	79.46	83.71	86.33
60/40 percent Equity/Bond	76.00	81.83	84.92
40/60 percent Equity/Bond	68.83	74.32	79.69
20/80 percent Equity/Bond	52.57	56.05	66.93
0/100 percent Equity/Bond	34.47	31.88	47.39

The second column of entries in Table 1 identifies the likelihoods that "strategy b" will result in a higher present value of lifetime benefits than "strategy e". In most cases, we find that an early claiming strategy at age 62, combined with investment of the proceeds until age 70, followed by future withdrawals from those savings, is preferable to the higher benefits resulting from deferring SSRI benefits until age 70. Even with an assumed longevity of 96 years, "strategy b" has an almost 84 percent likelihood of outperforming "strategy e", when early benefits are invested in a portfolio of 80 percent stocks and 20 percent bonds.

Finally, the outcomes of "strategy c" are clearly preferred to "strategy e". Receiving full PIA benefits at the "normal" retirement age of 66, and investing those benefits to support additional future withdrawals commencing at age 70 has a high likelihood of providing a higher lifetime present value of benefits than deferring SSRI benefits until age 70. We find that even modest amounts of equity in the investment portfolio ensure that the early-claiming strategies outperform the benefits deferral strategies. It is only when the investment portfolio is 100 percent debt and the beneficiary survives until age 96 that his is not true.

We next consider a scenario similar to that of Dalton (2006) where the early SSRI claimant continues to work and earns sufficient income to cause a 25 percent reduction in benefits. Under social security rules, the PIA at normal retirement age is adjusted to correct for the earlier reduction in benefits due to the earnings test. Specifically, when a claimant receives four years of 25 percent reduction in benefits between age 62 and 66, the adjusted PIA at age 66 will be computed as if the claimant commenced benefits at age 63, since the four years of 25 percent reduction has resulted in a full year's benefits being withheld. Therefore at age 66, the PIA for this early claimant would be restored to 80 percent of the "normal PIA (a reduction of 5/9 per month x 36 months).

Table 2 summarizes the results of our simulation analyses based on 1000 simulated outcomes, comparing the present values of the lifetime benefits resulting from the five claiming strategies identified in the previous section, adjusted for the impact of benefits being reduced by 25 percent between the ages of 62 and 66 due to the earnings test. The table entries indicate the percentage of the 1000 simulations in which a given strategy produced a higher lifetime present value than the alternative strategy. The entries of the first column of Table 2 identify the likelihood that "strategy a" (claiming SSRI benefits at age 62, and investing the benefits to support additional

future withdrawals starting at age 66) results in higher lifetime present value than "strategy d" (claiming SSRI benefits at the "normal" retirement age of 66).

If life expectancy is 86, an investment portfolio consisting of at least 40 percent equity results in a better than 60 percent likelihood that the early-claiming strategy will be superior. As the amount of equity in the investment portfolio rises, the likelihood that the early-claiming strategy will beat the "normal" retirement benefits increases. However, if we assume the retiree will survive until age 91 or 96, only investment portfolios with very high equity components result in a better than 50 percent likelihood of a higher lifetime present value for the early-claiming strategy.

The second column of entries in Table 2 identifies the likelihoods that "strategy b" will result in a higher present value of lifetime benefits than "strategy e". Again, in most cases, we find that an early claiming strategy at age 62, combined with investment of the proceeds until age 70, followed by future withdrawals from those savings, is preferable to the higher benefits resulting from deferring SSRI benefits until age 70. Even with an assumed longevity of 96 years, "strategy b" has a better than 50 percent likelihood of outperforming "strategy e", when early benefits are invested in a portfolio consisting of at least 40 percent in stocks. Furthermore, the preference for the early claiming strategy increases with the inclusion of more equity in the investment portfolio.

Table 2

Probabilities based on 1000 simulations, that the PV of lifetime benefits under an early-claiming strategy with invested proceeds will exceed similar deferred-claiming strategy's PV for various longevity assumptions and portfolio compositions, when recipient continues to earn income, resulting in a 25 percent reduction in benefits from the earnings test.

	P (pv of strategy a > pv of strategy d)	**P (pv of strategy b > pv of strategy e)**	**P (pv of strategy c > pv of strategy e)**
Survive until 86			
100/0 percent Equity/Bond	74.63	89.57	96.24
80/20 percent Equity/Bond	73.28	90.46	96.69
60/40 percent Equity/Bond	71.80	90.96	96.92
40/60 percent Equity/Bond	60.89	89.96	96.27
20/80 percent Equity/Bond	41.43	82.54	95.77
0/100 percent Equity/Bond	16.88	62.99	90.31
Survive until 91			
100/0 percent Equity/Bond	54.88	76.44	88.58
80/20 percent Equity/Bond	50.57	75.35	89.94
60/40 percent Equity/Bond	43.86	73.37	89.70

40/60 percent Equity/Bond	28.08	64.66	87.66
20/80 percent Equity/Bond	9.83	45.20	80.88
0/100 percent Equity/Bond	1.46	19.91	66.67
Survive until 96			
100/0 percent Equity/Bond	53.51	72.63	86.62
80/20 percent Equity/Bond	47.74	71.04	86.57
60/40 percent Equity/Bond	38.32	65.78	84.28
40/60 percent Equity/Bond	20.40	50.54	80.02
20/80 percent Equity/Bond	4.21	25.76	67.69
0/100 percent Equity/Bond	0.49	6.75	47.51

The third column of entries compares the outcomes of "strategy c" to those of "strategy e". Since the earnings test does not apply after age 66, the comparisons between "strategy c" and "strategy e" are similar to those in Table 1. Receiving full PIA benefits at the "normal" retirement age of 66, and investing those benefits to support additional future withdrawals, commencing at age 70, has a high likelihood of providing a higher lifetime present value of benefits than deferring SSRI benefits until age 70, even when assuming survival until age 96.

We further consider a scenario where the early SSRI claimant continues to work and earn sufficient income to cause a 50 percent reduction in benefits. In this case, the claimant receives four years of a 50 percent reduction in benefits between the ages 62 and 66. The adjusted PIA at age 66 will be computed as if the claimant commenced benefits at age 64, since the four years of 50 percent reduction has resulted in two full years' benefits being withheld. Therefore, at age 66, the PIA for this early claimant would be restored to 86.67 percent of his or her "normal PIA (a reduction of 5/9 per month x 24 months).

Table 3 summarizes the results of our simulation analyses based on 1000 simulated outcomes, comparing the present values of the lifetime benefits resulting from the five claiming strategies identified in the previous section, adjusted for the impact of benefits being reduced by 50 percent between the ages of 62 and 66 due to the earnings test. The table entries indicate the percentage of the 1000 simulations in which a given strategy produced a higher lifetime present value than the alternative strategy.

The first column of entries in Table 3 identifies the likelihoods that "strategy a" (claiming SSRI benefits at age 62, and investing the benefits to support additional future withdrawals at age 66) results in higher lifetime present value than "strategy d" (claiming SSRI benefits at the "normal" retirement age of 66).

If life expectancy is 86, an investment portfolio consisting of at least 20 percent equity results in a better than 60 percent likelihood that the early-claiming strategy will be superior. As the amount of equity in the investment portfolio rises, the likelihood that the early-claiming strategy

will beat the "normal" retirement benefits increases. If we assume survival until 91, the investment portfolio will need to include 60 percent or more equity for the early claiming strategy to have a 60 percent likelihood of success. However, if we assume the retiree will survive until age 91 or 96, only those portfolios with at least a 60 percent equity component result in better than 50 percent likelihoods of higher lifetime present values for the early-claiming strategy.

The second column of entries in Table 3 identify the likelihood that "strategy b" will result in a higher present value of lifetime benefits than "strategy e". Consistent with our previous statements, in most cases, we find that an early claiming strategy at age 62, combined with investment of the proceeds until age 70, followed by future withdrawals from those savings, is preferable to the higher benefits resulting from deferring SSRI benefits until age 70. Even with an assumed longevity of 96 years, "strategy b" has an approximately 60 percent likelihood of outperforming "strategy e", when early benefits are invested in a portfolio consisting of at least 40 percent in stocks. Not surprisingly, the preference for the early claiming strategy increases with the inclusion of more equity in the investment portfolio. With shorter longevity assumptions, the preference for the early claiming strategy is even higher.

Table 3

Probabilities based on 1000 simulations, that the PV of lifetime benefits under an early-claiming strategy with invested proceeds will exceed a similar deferred-claiming strategy's PV for various longevity assumptions and portfolio compositions, when recipient continues to earn income, resulting in a 50 percent reduction in benefits due to the earnings test.

	P (pv of strategy a > pv of strategy d)	**P (pv of strategy b > pv of strategy e)**	**P (pv of strategy c > pv of strategy e)**
Survive until 86			
100/0 percent Equity/Bond	82.44	92.00	96.10
80/20 percent Equity/Bond	83.40	92.71	96.75
60/40 percent Equity/Bond	83.14	93.77	97.18
40/60 percent Equity/Bond	79.42	92.28	96.60
20/80 percent Equity/Bond	64.79	88.73	95.61
0/100 percent Equity/Bond	35.48	74.24	90.22
Survive until 91			
100/0 percent Equity/Bond	64.61	80.90	88.82
80/20 percent Equity/Bond	63.37	84.42	89.97
60/40 percent Equity/Bond	59.14	79.52	89.33
40/60 percent Equity/Bond	46.39	73.78	88.01
20/80 percent Equity/Bond	23.36	57.59	80.82
0/100 percent Equity/Bond	6.24	33.26	66.23

Survive until 96			
100/0 percent Equity/Bond	91.51	76.22	85.99
80/20 percent Equity/Bond	60.04	76.55	86.94
60/40 percent Equity/Bond	52.32	71.67	84.77
40/60 percent Equity/Bond	34.81	59.54	79.68
20/80 percent Equity/Bond	11.22	37.81	67.38
0/100 percent Equity/Bond	1.65	14.38	47.57

The third column of entries in Table 3 compares the outcomes of "strategy c" and "strategy e". Since the earnings test does not apply after age 66, the comparisons between "strategy c" and "strategy e" are similar to those in Tables 1 and 2. Receiving full PIA benefits at the "normal" retirement age of 66, and investing those benefits to support additional future withdrawals commencing at age 70 has a high likelihood of providing a higher lifetime present value of benefits than deferring SSRI benefits until age 70, even when assuming survival until age 96.

Conclusion:

When to begin Social Security retirement benefits is a complex decision based on a number of qualitative and quantitative factors such as risk aversion, life expectancy, cash flow needs, other sources of income, family circumstances, etc. This study provides a quantitative framework based on simulation analyses powered by 85 years of market data to compare various social security claiming strategies. The focus of the analyses is on single claimants, or married claimants with similar incomes and ages, and therefore, it ignores the strategy implications related to survivor's benefits. The provided simulation analyses indicate that early claiming strategies which invest the early benefits in portfolios containing both equity and debt to support additional future income have high likelihoods of producing larger lifetime present values of cash flows than the comparable social security deferral options.

References:

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Endnotes:

[i] https://www.socialsecurity.gov/OACT/ProgData/retirebenefit2.html Typically the PIA is a function of *average indexed monthly earnings* (AIME). The PIA is determined by applying a PIA formula to AIME. The formula depends on the year of first eligibility (the year a person attains age 62 in retirement cases).

[ii] http://www.ssa.gov/oact/quickcalc/early_late.html

[iii] http://www.ssa.gov/oact/quickcalc/early_late.html

[iv] http://ssa.gov/policy/docs/statcomps/oasdi_monthly/2007-11/table03.pdf

[v] http://www.socialsecurity.gov/pubs/10069.html#a0=6

[vi] http://www.irs.gov/pub/irs-pdf/p915.pdf

[vii] Dalton, Thomas M., "*Retirement at 62: Is Receiving Social Security Early Worth It?*" The CPA Journal, June 2006.

[viii] http://www.ssa.gov/oact/STATS/table4c6.html

[ix] Longevity assumptions below age 86 would result in an even stronger preference for the early claiming strategies. Even without any investment opportunities or discounting, the breakeven point between "strategy a" and "strategy d" is 12 years (i.e. age 78). The breakeven point between "strategy b" and "strategy e" is approximately 10.5 years (i.e. age 80.5). The breakeven point between "strategy c" and "strategy e" is approximately 12.5 years (i.e. age 82.5).