UNUSUAL SOCIAL SECURITY CLAIMING STRATEGIES: COSTS AND DISTRIBUTIONAL EFFECTS

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Abstract

When to claim Social Security is one of the most important decisions Americans face when approaching retirement. Recently, several unconventional claiming strategies have come to light – "Free Loan," "Claim and Suspend," and "Claim Now, Claim More Later" – that have the potential to pay higher lifetime benefits to some individuals, increasing system costs. In the "Free Loan" strategy, an individual can claim benefits at a given age and later repay them and file again, obtaining an increased benefit from the delayed filing. This strategy is equivalent to a "no interest" loan from Social Security and could potentially cost the program as much as $11 billion a year. "Claim and Suspend" allows an individual to claim benefits and then immediately suspend them, either to put his own benefits on hold if he reenters the workforce or to allow his spouse to claim a spousal benefit while he continues to work and earn delayed retirement credits. The potential cost of allowing couples the option of "Claim and Suspend" is about $0.5 billion dollars a year. In the "Claim Now, Claim More Later" strategy, a married individual claims a spousal benefit while delaying claiming his own retired worker benefit in order to build up delayed retirement credits. This option could potentially cost Social Security $10 billion a year. Of the three strategies, "Claim and Suspend" appears to have the clearest policy rationale as it provides an incentive for individuals to work longer.

Introduction

When to claim Social Security is one of the most important decisions Americans make when approaching retirement, as the claiming age can have a significant impact on lifetime benefits and overall retirement security. The dependable stream of income provided by Social Security is particularly valuable at a time when financial market turmoil has underscored the uncertainty associated with 401(k) plans. In this climate, more and more people may closely consider the best way to utilize Social Security.

This paper will evaluate three claiming strategies that have been rarely used but have recently received more attention.[1] The three strategies are: 1) "Free Loan" in which an individual claims benefits at a given age, then later repays the benefits – keeping any interest earned – and refiles to obtain a higher monthly benefit; 2) "Claim and Suspend" in which an individual claims benefits but then suspends them, either to put his own benefits on hold if he decides to reenter the workforce or simply to allow his spouse to claim a spousal benefit; and 3) "Claim Now, Claim More Later" in which an individual initially claims a spousal benefit while delaying claiming his own worker benefit in order to build up delayed retirement credits. Each of these unconventional claiming strategies has the potential to pay higher lifetime benefits to some individuals and increase system costs.

The number of households adopting these strategies could increase for several reasons: increased publicity, the need to maximize retirement resources, the growing number of older Americans in general and of two-earner couples in particular, and the recent advent of an actuarially fair delayed retirement credit. At the same time, however, the Social Security program faces a long-term financing challenge, so any claiming strategies that could increase costs to the system should be carefully evaluated to ensure that they serve a compelling policy objective. This paper will help address this need by estimating the costs and consequences of any widespread adoption of the three strategies.

The paper is organized as follows. The first section provides background on the claiming decision and reviews previous literature on claiming behavior and its effect on

[1] See Ruffenach (2007), Kotlikoff (2008) and Hershey (2008).

Social Security wealth. The next three sections cover, in turn, each of the three unusual strategies, describing the rationale for their use and estimating their potential costs and distributional implications. The final section concludes.

Background

Currently, retired workers can choose between claiming at the Full Retirement Age (FRA)[2] and receiving full benefits, claiming as early as age 62 but receiving reduced benefits, or delaying retirement to as late as age 70 and collecting higher benefits. The reductions and the delayed retirement credits are approximately actuarially fair for the person with average life expectancy. Early retirement benefits are lowered by an amount that offsets the longer period for which they will be received. The delayed retirement option offers higher benefits but for a shorter remaining lifetime. Thus, on average, workers will receive the same lifetime benefits regardless of when they claim between the ages of 62 and 70.[3]

For married households, the situation is more complicated, as different types of benefits are available and the claiming behavior of one spouse often affects the benefits of the other. In addition to retired worker benefits, married households can potentially receive spousal benefits and/or survivor benefits. A spousal benefit, if claimed at or after the FRA, is equal to half of the worker-beneficiary's base benefit and a survivor benefit provides a surviving spouse with the full amount of the decedent's actual benefit.

Given the variety of options, previous research has examined what claiming strategies households could use to maximize the expected present value of their benefits (EPVB). Coile et al. (2001) and Munnell and Soto (2005) look at prototypical households at various claiming ages. The former focuses on one-earner couples with population mortality in which the husband and wife are born in 1930 and 1932, respectively. The authors find that the household maximizes its lifetime benefits if the

[2] The FRA is scheduled to increase from age 65 to age 67 by 2022. The increase began with individuals born in 1938, for whom the FRA is 65 plus 2 months, and increases 2 months per year until it reaches age 66. Then after a 12-year hiatus, the FRA again increases by 2 months per year until it reaches age 67 for individuals born in 1960 or later.

[3] A recent study has explored a further consideration that could factor into the claiming decision – the longevity insurance value provided by Social Security (Sun and Webb 2009).

husband claims at 65, assuming the wife claims at the same time. If, instead, the husband claims at 62, the household will lose 3 percent of lifetime benefits.

Munnell and Soto (2005) perform a similar exercise, calculating the combinations of claim ages that maximize the EPVB using population mortality for the 1948 cohort. They show that the maximizing claiming ages depend on the age difference between the spouses and the relative sizes of the spouse's primary insurance amounts (PIAs) – the monthly benefit individuals receive at the FRA. In that respect, they consider both one-earner and two-earner couples in their simulations. In general, if the wife's PIA is more than 40 percent of her husband's, the household's Social Security wealth is maximized if the woman claims as soon as possible and the husband delays until 69. If the wife's PIA is very small, lifetime benefits are maximized if the wife claims at the same time as her husband, usually after the husband has reached the FRA.

While both of the above studies find that couple's lifetime benefits are generally greatest if the husband claims at 65 or later, the majority of married men actually claim earlier. Using administrative data from the Social Security Administration's New Beneficiary Data System for mid-1980 to mid-1981, Coile et al. (2001) finds that most men claimed as soon as they became eligible or soon thereafter. Sass, Sun and Webb (2008) examine households in the *Health and Retirement Study* (HRS) and compare the EPVB from households' actual claiming behavior to the EPVB of optimal claiming behavior.[4] The authors find that the couple's lifetime benefits are almost always greater if the husband claimed benefits several years later. The resulting loss from this suboptimal behavior is around 4 percent of a household's EPVB.[5]

This paper builds on the previous literature by analyzing how the three unconventional claiming options introduced above may affect a household's optimal claiming strategy. As in the earlier studies, we assume that an individual will choose to

[4] The *Health and Retirement Study* is a nationally representative household survey of older Americans, which began in 1992 with a sample of people ages 51-61 and their spouses.

[5] To help explain claiming behavior, other studies have looked at differences in subjective mortality beliefs. Hurd, Smith and Zissimopoulos (2004) find that people with very pessimistic subjective mortality beliefs claimed earlier, but that the effects were not large. Like the previous studies, they conclude that most households leave money on the table by claiming earlier than the ages that would maximize lifetime benefits. Other authors have relied on the structural approach to explain the effects of Social Security rules on claiming ages and retirement behavior (see Gustman and Steinmeier 2004, 2005, 2009).

claim at an age that maximizes his EPVB, and that a couple will behave cooperatively and choose each spouse's claiming age so as to maximize the couple's joint EPVB. As a result, for each HRS household, we are able to compare the maximum EPVB under conventional claiming behaviors to the maximum EPVB using these strategies. The difference is the additional Social Security wealth that the household can gain from using each of the three strategies. The gain to the household is the cost to the system. Using the actual number of eligible households allows us to calculate the potential cost to Social Security and its distributional implications.

The actual cost to Social Security could be higher or lower depending on how close actual claiming behavior was to "optimal" claiming behavior in the past and how that pattern changes due to the introduction of the unconventional provisions. This line of analysis is beyond the scope of this paper, but is an interesting avenue for future research.

Strategy 1: "Free Loan" from Social Security

The "Free Loan" strategy originates from a little-known part of the law that allows individuals who are already collecting benefits to change their minds and start over.[6] For example, an individual can claim Social Security at age 62 and then reclaim at age 70 and receive a higher benefit, provided he pays back the benefits he has received. Because the claimant is only required to return the nominal amount of the collected benefits, he could invest the money that he receives and keep the interest.[7] In essence, the claimant is a borrower who is required to pay back only the principal of a "loan," making this strategy akin to an interest-free loan from Social Security. An individual with average life expectancy will increase his lifetime benefits by the amount of the investment earnings. Should the claimant die before reaching average life expectancy, this strategy will involve a loss. But the strategy always dominates simply claiming at

[6] This claiming approach had its origins in the case of an individual who initially claimed benefits in 1957 and later requested that she be allowed to re-file in 1964 in order to obtain a higher monthly benefit based on her more recent work history and older filing age. The Social Security Administration granted this request on the grounds that it was in the best interest of the claimant to rescind the original claim.
[7] The amount that needs to be repaid includes any Medicare premiums deducted from the benefit the individual received.

age 70 because it provides "early retirement" benefit payments for those who die prior to age 70 and the additional interest for those who "repay the loan" and reclaim at 70.

An example might help. Based on Social Security life tables, the average 62-year old born in 1944 has a life expectancy of approximately 21 years. His FRA is 66, at which point he is entitled to 100 percent of his PIA. If he opts for early retirement at 62, he will receive 75 percent of his PIA; if he postpones retirement past 66, he will accrue delayed retirement credits, culminating in a maximum benefit of 132 percent of PIA at age 70. As already noted, under conventional claiming strategies Social Security is actuarially fair. In other words, the average retired individual with a life expectancy of 83 will receive the same lifetime benefits no matter at what age between 62 and 70 he claims. In Figure 1, areas A, A´ and B show the benefits received if the individual claims at 62, while areas C and B are the benefits received if claiming at 70. The value of areas A and A´, the benefits earned before 70, is equal to the value of area C, the change in benefits due to delayed retirement. If that same individual takes advantage of the "Free Loan" strategy he will collect benefits equal to areas A and A´, but needs to pay back only area A. In total, then, this individual would end up with a Social Security benefit equal to areas B and C and an investment gain equal to A´. The gain to the individual and the loss to the system is therefore the value of A´.

The implication from Figure 1 is that any individual with average life expectancy – age 83 – will benefit from implementing this strategy and his gain is area A´. But some individuals whose life expectancy is lower than the average can also benefit. Assume that the individual who claimed at 70 adopts the "Free Loan" strategy. He first claims at 62, invests the benefits paid to him, and reclaims at 70. As noted above, reclaiming at 70 requires the individual to pay back the value of the benefits received over the prior eight years, but not the interest. Keeping the interest gives him a 'head-start' on reaching the break-even age compared to an individual claiming at 62 under the conventional strategy. To break even, he simply needs to live until he receives total benefits from Social Security that, together with the interest, add up to the total benefits received by a conventional age-62 claimant. Because of the interest earnings, this point occurs at age 81.[8]

[8] See the Appendix for the calculation of the "break-even" age.

If the individual in the above example does not live to age 81, of course, he would lose benefits. For an individual with the median benefit, the loss starts at $62,000 – the required repayment of benefits – at age 70 and steadily declines until he reaches age 81 (see Figure 2).

Cost to the System

Any gains to individuals imply a cost to the Social Security system. To calculate the total cost to the system, we use the earnings data from the HRS to estimate each respondent's PIA and his potential welfare gain.[9] In our most conservative scenario, we calculate the cost assuming every individual aged 70 who is likely to benefit from the strategy in 2006 takes advantage of it.[10] To estimate the potential annual cost – defined as the lifetime cost for 70-year-olds in each year – we assume that every 70-year-old has previously claimed benefits at age 62 and is now facing the decision on whether to employ this strategy. For simplicity, we assume that retiring spouses with a work history – who might normally receive a spousal benefit – claim benefits based on their own earnings record.

Life Expectancy Only. As we already saw, the strategy is only beneficial if the participant who reclaims at 70 lives long enough such that the value of the higher delayed retirement benefits, plus A´ (from Figure 1), exceeds the value of the benefits earned before age 70. Because we are unaware of every individual's subjective mortality at age 70, we assign probabilities of living to the break-even age based on each individual's gender, race, and educational attainment. We then multiply each person's potential gain by the probability that the individual will be alive at age 81 to determine the expected loss to the system.[11] Based on these probabilities and assuming that all individuals age 70 in 2006 had previously claimed Social Security benefits at age 62, the expected cost to the system would have been $11.0 billion (equivalent to area A´ in Figure 1). Total costs

[9] To present a static annual cost, PIA adjustments for individuals aged 70 in 2006 were calculated to coincide with future cohorts.

[10] Individuals in poor health who do not plan on living to the break-even age have the option of paying back their benefit before age 70. If an individual had previously planned on claiming at the FRA, he still gains from claiming at 62 and reclaiming at the FRA. The individual still gains the interest payments, making the strategy attractive to those who may not live into their 80s.

[11] For more details, please see the Appendix.

would actually be higher because delayed claiming would increase survivor benefits for couples. Moreover, many women are eligible to receive a spousal benefit based on their husband's earnings. Applying the "Free Loan" strategy to spousal benefits has the potential to further increase the cost to Social Security.[12]

Moderate Financial Constraints. Not everyone healthy enough to gain from the strategy will be able to implement it. Many individuals face considerable financial constraints. Since a retiree cannot use his Social Security benefit if it is being invested, he must have enough wealth to live on while employing this strategy. We therefore restrict the sample of potential participants in the strategy to include only individuals who have net worth of at least twice the amount that they would need to repay at age 70, less the earned interest.[13] The resulting estimated cost to the system would then be about $8.7 billion.

Strict Financial Constraints. The moderate financial constraint assumes that all of an individual's net worth will be available as a financial resource for implementing the strategy. In practice, one can see how assets such as real estate, vehicles, or businesses would not be liquid enough to be viable financial resources for utilizing this strategy. Thus, we further restricted the sample to include only individuals who are likely to possess *financial* assets twice the amount needed to repay at 70 minus earned interest. The total cost to the system then drops to $5.5 billion (see Figure 3).

There is a distinct possibility that financial institutions could worsen the situation for Social Security. An opportunity exists for lenders to loan money to those individuals who are financially ineligible for the strategy in exchange for a portion of their potential increase in benefits.

Tax Impact

Under the "Free Loan" strategy, any taxes paid on Social Security benefits affect gains to individuals and costs to the system. Individuals who are required to pay income tax on a portion of their benefits have less to invest while still being required to pay back

[12] Note that spousal benefits max out at age 66 since these benefits do not accrue delayed retirement credits.
[13] Because the earned interest can be directly used to pay back benefits, we assume that – in order to use this strategy – individuals need twice the amount that they will draw from their savings.

the before-tax benefits. The share of Social Security benefits subject to income tax depends on the household's "combined income" – its adjusted gross taxable income excluding Social Security benefits plus non-taxable interest plus half its Social Security benefits – and ranges from 0 to 85 percent of benefits.[14] The tax rate applied then depends on the household's other taxable income. Under the "Free Loan" strategy, in the year of repayment a household is entitled to either an income tax deduction or tax credit for the past taxes paid on benefits. Because of this provision, the effects of taxes on the cost estimate of the "Free Loan" strategy are limited to the interest Social Security is able to gain on tax revenue from benefits, which would have belonged to the claimant if benefits were not taxed.

In our HRS sample, we find that – for both singles and married couples – only the top third of the income distribution pay any taxes on their Social Security benefits. Among this group, the median single and married high-income household will pay approximately 2.2 percent and 14.9 percent of their benefits in taxes, respectively. The implicit assumption is that Social Security earns the same interest rate of 3 percent on their investments as individuals do. Accordingly, we estimate that the total cost of the "life expectancy only" scenario will decrease by approximately 3.3 percent, or $370 million, reducing its total cost modestly to $10.6 billion.[15]

Though taxes currently have only a minor impact on the cost estimate, the rising prevalence of 401(k)-type retirement accounts has the potential of increasing the level of taxable income in retirement, causing more individuals to pay tax on Social Security benefits.

[14] Social Security benefits are not subject to federal income tax if the household's "combined income" is less than $25,000, or $32,000 if married and filing jointly. Fifty percent of benefits are taxed if the household's "combined income" is between $25,000-$34,000 for singles or $32,000-$44,000 for married filing jointly. Above these ceilings, 85 percent of a household's benefits are taxed.

[15] Our results rest on the assumption that the use of the strategy does not change households' income patterns observed in the data. It could be possible for households to shield more of their Social Security benefits from taxation by changing their schedule of withdrawals from their retirement savings accounts, reducing the interest gain for Social Security. Such analysis is beyond the scope of this paper. For a detailed description of our calculation, see the Appendix.

Distributional Impact

The wealth and life expectancy required for the "Free Loan" strategy limit its use. In terms of life expectancy, roughly 60 percent of men and 70 percent of women at age 70 are expected to live long enough to break even on this strategy. Adjusting for moderate financial constraints will cause the percent of men and women who take advantage of the strategy to drop to 46 percent and 56 percent, respectively; strict financial constraints will lower the share to 30 percent for men and 32 percent for women.

Good health and financial assets are not randomly distributed in the population. As a result, most of the $5.5 billion of expected gains under strict financial constraints are very concentrated – they accrue to individuals in the top two quintiles of the wealth distribution (see Figure 4). Therefore, the "Free Loan" strategy creates more inequity between those who can afford their retirement and those who are at risk of not being financially prepared to retire.

Strategy 2: "Claim and Suspend"

The second strategy – "Claim and Suspend" – can potentially be used in two different ways – one by individuals and the other by couples. First, with the current financial crisis wreaking havoc on retirement savings, many retirees have had to reassess their financial situation and some have decided to re-enter the workforce. For these individuals, Social Security provides for higher benefits later in exchange for withholding benefits while they are employed. For those under the FRA, this adjustment is accomplished automatically through the annual retirement earnings test. For those over the FRA, the adjustment can be made through the voluntary option of "Claim and Suspend," which essentially stops their benefits after the benefits were initially claimed. The individual is then free to restart his benefits at a later date and earn delayed retirement credits in the interim.

Second, the "Claim and Suspend" strategy also enhances the claiming options of one-earner couples. As noted above, married individuals are entitled to a retired worker benefit based on their own earnings and/or spousal benefit. In order for a wife to start receiving a spousal benefit, however, her husband needs to have claimed his own retired

worker benefit. The "Claim and Suspend" strategy allows a husband who reaches the FRA to claim and immediately suspend benefits, allowing his wife to receive a spousal benefit based on his earnings record. The husband is then free to continue working and receive delayed retirement credits, which increases not only his monthly benefit but also his wife's survivor benefit. By using "Claim and Suspend" in this way, the couple can enhance the value of their lifetime benefits.

"Claim and Suspend" and Re-Entrants

Unlike past recessions, the labor force participation rate of older men has increased during this financial crisis (see Figure 5). This pattern suggests that some people are re-entering the labor force as they find their retirement resources to be inadequate. For those re-entering, as noted above, the annual retirement earnings test and the "Claim and Suspend" option allow workers to enhance future benefits by having benefits withheld while they work.

The Annual Retirement Earnings Test. Those under the FRA will find their Social Security benefits automatically reduced when they go back to work. In 2009, for each dollar of earnings in excess of $14,160, benefits are reduced by $1 for each $2 earned. Many economic studies have shown that this test discourages work because most beneficiaries are unaware that the reduction in benefits while working triggers an increase in benefits later.[16] In fact, benefits foregone while working are in effect rolled forward to increase people's Social Security benefits after they reach the FRA.[17]

An example might help. Assume that the person started to collect Social Security at age 62, but continued to work and only retired for good at 63. If that person earned so much that half his benefits were withheld, at the FRA his benefit would be raised to what it would have been if he had claimed at age 62 and a half (see Figure 6). On average, the

[16] Before the introduction of early retirement, the annual earnings test was effectively a tax in that benefits lost one year did not produce a gain in benefits in later years. Until recently, it partially retained the characteristics of a tax for employment after the FRA, as the increase in benefits was not actuarially fair.

[17] In some instances, the annual earnings test causes individuals to be worse off than had they not claimed before the FRA. Consider an individual who claims benefits at 62 but continues working until age 63. If his salary is so high that his benefits are completely withheld, upon reaching the FRA he will be treated as if he claimed at 63. However, the recalculation will not take into account the fact that the individual did not receive a higher benefit for the time between when he stopped working and the FRA.

benefit a retiree receives is equal to the amount he would have received if the annual earnings test were never applied.

"Claim and Suspend." Those over the FRA who go back to work have a much more flexible option. As a result of the Senior Citizens' Freedom to Work Act of 2000, they are no longer subject to the annual earnings test but rather can voluntarily "Claim and Suspend." That is, they can either work and receive full benefits or voluntarily suspend payments. If they choose to suspend, they forfeit current benefits but earn delayed retirement credits for a permanent increase in their future monthly benefits (see Figure 7). This strategy can be very helpful to those who earn enough to support themselves, because it allows them to increase the amount of future monthly Social Security benefits.

Similarities and Differences. In essence, "Claim and Suspend" is a continuation of the annual earnings test. In both cases, the retiree forgoes benefits while working for an actuarially increased benefit in the future.[18] The two strategies differ in that one is mandatory and one is voluntary.[19] The notion is that the benefit at the FRA is the target amount; workers with earnings should be building towards this goal rather than receiving benefits when they do not really need them.

Once workers have achieved the target amount, they are free to receive the benefit whether they need it or not.[20] The important point is that Social Security has provisions for people to defer benefits if they go back to work so that they can have higher monthly benefits later. Before 2000, a retired individual re-entering the labor force after the FRA could effectively defer benefits through the temporary reduction caused by the annual earnings test. After the repeal of the annual earnings test in 2000 for individuals above the FRA, he would no longer have had this option without the addition of the "Claim and Suspend" provision.

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[18] In both cases, if the individual has a spouse, the survivor benefit is increased to the extent that it is based on the higher earner's actual benefit.

[19] They also differ in the timing of the increase. Under the annual earnings test, higher benefits are provided only once the worker attains the FRA. Under "claim and suspend," higher benefits are payable as soon as the worker re-claims.

[20] If the individual has a spouse, "Claim and Suspend" leaves the spousal benefit unaffected, but the annual earnings test will reduce spousal benefits that are based on the worker's earnings record.

"Claim and Suspend" and Couples

"Claim and Suspend" also enhances the claiming options for married couples and thereby increases their potential lifetime benefits. As noted, prior research has shown that couples maximize their expected lifetime benefits by having the wife claim early and the husband claim late (Munnell and Soto 2005). The intuition is that the wife will receive her relatively low spousal benefit and/or benefit based on her own earnings only over the relatively short expected lifetime of her husband rather than over the relatively long expected life of the average woman. Therefore, the wife – like any beneficiary with an expected short life – should claim early. The wife's survivor benefit, which she will receive once her husband dies, depends on her husband's actual benefit. To get as high a survivor benefit as possible, the husband should continue working as long as possible. Thus, in many cases, the optimal claiming ages for the husband and wife are 70 and 62, respectively.

For the typical couple in which the wife is three years younger than her husband, this optimal claiming strategy is reasonably feasible with "Claim and Suspend." The husband can claim his benefits at today's FRA of 66, allowing his wife age 63 to start collecting her spousal benefit. He can then suspend his benefit and increase the monthly amount by working to age 70. Without "Claim and Suspend," however, the typical couple cannot achieve this optimal strategy. The wife would have to wait until 67 before she could claim. Thus, the couple's options would be constrained.[21]

To understand the cost implications of the "Claim and Suspend" strategy, we use the 2006 HRS and focus on the joint claiming decisions married couples must make when the eldest member is 62.[22] The goal is to compare the lifetime benefits of couples when they can take advantage of "Claim and Suspend" to the lifetime benefits under the old rules when the wife could not claim until the husband retired.[23] As expected, only a small

[21] In addition, as we will see in the next section, "Claim and Suspend" can be used by couples in conjunction with the third strategy "Claim Now, Claim More Later".

[22] Because of the low number of couples reaching age 62, we augmented our sample size to get a more reliable estimation.

[23] Our calculations are based on the 1948 cohort life table. In order to find the expected lifetime benefits under the two scenarios, we use a 3 percent real discount rate and the socioeconomic survival rates from Brown, Liebman and Pollet (2002), which determine relative survival probabilities for 12 race-gender-education groups. If an individual did not fall into one of the 12 groups, they were assigned gender-specific cohort mortality.

portion (27 percent) of couples benefit from "Claim and Suspend." The beneficiaries are either single-earner couples or those in which the wife's earnings are very small relative to the husband's (see Figure 8). After all, wives with significant earnings could always claim in their own right and were never dependent on the claiming decision of their husbands.

The gain to these essentially one-earner couples from moving from a constrained optimizing claiming strategy to a virtually unconstrained strategy with "Claim and Suspend" is relatively small – roughly $0.5 billion per year.[24] Moreover, this estimate assumes that couples follow an optimal claiming strategy, and evidence suggests that many do not.

Strategy 3: Claim Now, Claim More Later

The final strategy – "Claim Now, Claim More Later" – is only available to married couples. As noted above, married individuals are entitled to a retired worker benefit based on their own earnings and/or a spousal benefit. If a married individual claims before the FRA, the Social Security Administration assumes that the individual is claiming both types of benefits, compares the worker and spousal benefits, and awards the highest (a provision known as "deemed filing"). Upon reaching the FRA, individuals can choose which benefit to receive. As a result, married individuals can claim a spousal benefit at 66 and switch to their own retired worker benefit at a later date. This approach allows a worker to begin claiming one type of benefit while still building up delayed retirement credits, which will result in a higher worker benefit later.

In the past, providing these benefit options for spouses was not as valuable, since those who postponed benefits beyond the FRA were giving up expected lifetime benefits. With the recent advent of an actuarially fair delayed retirement credit, lifetime benefits are roughly the same whether claimed at the FRA or at age 70. As a result, today the availability of benefit options has real value for couples and therefore inevitably increases the potential cost of the Social Security program.

[24] This estimate does not take the increases in payroll and income taxes into account. Both taxes could potentially lower the net cost incurred by "Claim and Suspend."

Determining Which Spouse Can Benefit

Married individuals can receive retired worker benefits based on their own earnings or, if they have no earnings, they receive 50 percent of their spouses' PIA. If they have some earnings, the spousal benefit is used to "top up" the worker benefit so that the total equals 50 percent of the spouse's. The amount can be lower if the individual chooses to receive either the retired worker benefit or the spouse's benefit before the FRA (see Table 1). However, spouses' benefits are not affected by the age at which the worker-beneficiary claims benefits.

Originally, we thought that "Claim Now, Claim More Later" would involve the wife receiving the spousal benefit in two-earner couples with roughly equal earnings. For example, consider a two-earner couple in which the husband is three years older than the wife (the typical age difference according to the HRS). Both husband and wife had originally planned to delay claiming until age 70 in order to receive the highest possible monthly benefit. But, instead, once the husband claims his benefits at age 70, the wife – now 67 and no longer subject to deeming – can file for just a spousal benefit. The wife then continues working and contributing to Social Security. At age 70, she files for her own retired worker benefit, which has now reached its maximum amount due to the delayed retirement credits, and stops receiving the spousal benefit. In this situation, the wife gains three years of spousal benefits that she would not have enjoyed under the conventional claiming approach.

But it turns out that those most likely to receive a spousal benefit while using "Claim Now, Claim More Later" are the husbands in two-earner couples. As noted above, previous research has found that married women will maximize the couple's expected lifetime benefits by claiming early. As a result, the way an optimizing couple would use "Claim Now, Claim More Later" is for the wife to claim at 62 and, once her husband reaches age 66, he would claim a spouse's benefit based on his wife's earnings. At age 70, he would claim the maximum amount of his own retired worker benefit due to the delayed retirement credits, and stop receiving the spousal benefit. Of course, if the woman is the higher earner, the story works in reverse.

Cost to the System

One can get a rough idea of the potential annual cost by considering how many participants are eligible to use this strategy and how much they will gain from it. In 2006, roughly 650,000 husbands had higher earnings' histories than their wives.[25] The typical wife's PIA is about $900, so the husband would have received 50 percent of $900 for 36 months for a total of $16,200. Multiplying the number of men eligible (650,000) times $16,200 yields a total cost of $10.5 billion. Doing the same exercise for the 10 percent of cases – roughly 80,000 – in which the wife has higher earnings than the husband yields an additional cost of $1.3 billion. Thus, a rough estimate of the annual cost incurred by households making their joint claiming decisions is about $11.8 billion.[26]

A more sophisticated approach to estimating the total cost to the program is to compare for each couple their optimal claiming ages and value of benefits under conventional claiming and under a scenario in which "Claim Now, Claim More Later" is added to their options. This approach allows for couples with different age differences and different ratios of husband's to wife's earnings.

The analysis uses the 2006 HRS and focuses on the joint claiming decision that married couples would make when the eldest member is 62 in order to maximize their expected lifetime benefits.[27] First, using life tables that vary by gender, race and education, we calculate the total expected benefits, including survivor benefits, paid to each household at each possible combination of claiming ages under conventional claiming strategies.[28] We identify the couple's combination of claiming ages that yields the highest expected benefits. Second, we expand the options available to the couple by adding the possibility of "Claim Now, Claim More Later." This expansion is accomplished by restricting first one member and then the other member of the couple from claiming benefits until he or she is 66, at which point he or she claims benefits based on the spouse's earnings record.

[25] We find that couples will not gain from this strategy if the lower earner's PIA is less than about 30 percent of the higher earner's PIA.
[26] Discounting the benefits back to age 62 would reduce the total to $10.2 billion.
[27] As with the prior estimates for "Claim and Suspend", because of the low number of couples reaching age 62, we augmented our sample size to get a more reliable estimation.
[28] Similarly to the calculation of the "Claim and Suspend" strategy, we use the 1948 cohort life tables and Brown, Liebman and Pollet (2002) survival probabilities. If an individual did not fall into one of the 12 gender-race-education groups, they were assigned gender-specific cohort mortality.

In order to claim benefits on the spouse's earnings record, the spouse also must have claimed benefits. The new provision that we discussed above– "Claim and Suspend" – however, allows individuals who want to continue working upon reaching the FRA to claim their benefits and then suspend payment so that their spouses may receive spousal benefits while their own worker benefits can increase with additional earnings and the delayed retirement credit. The ability to claim and suspend was assumed for both the base case and the expanded scenario.[29]

The next step in the analysis is simply to compare for each household the total amount of benefits paid under the conventional strategies and the total amount paid under the expanded options that include "Claim Now, Claim More Later." If the difference is negative, we assume the couple will not use the strategy and the cost to Social Security is zero. If the difference is positive, we assume the couple will use the strategy and impose a cost on Social Security. To get a total number for the population, HRS weights were applied to get the average for men and for women. The annual cost to Social Security is then calculated by multiplying those averages by the actual number of men and women aged 62 in the 2006 *Current Population Survey*.

The conventional strategy would have produced maximum benefits of $339.8 billion for married couples in 2006, while the expanded options would have produced maximum benefits of $349.5 billion. The potential annual cost to Social Security is thus $9.7 billion.[30] This figure is close to the "back of the envelope" estimate described above.[31]

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[29] The effect of "Claim and Suspend" when used in conjunction with the "Claim Now, Claim More Later" strategy is trivial. Under conventional claiming behavior, "Claim and Suspend" increases total lifetime benefits by about $0.5 billion. Because it is primarily used by couples with low PIA ratios, its use only marginally affects those who would normally use the "Claim Now, Claim More Later" strategy. While compared to conventional claiming behavior, the cost of "Claim Now, Claim More Later" is $10 billion, the addition of "Claim and Suspend" increases it by a mere 2 percent to $10.2 billion.

[30] We assume that, under the conventional strategy, couples claim benefits at the optimal ages that maximize their expected lifetime benefits. In reality, as noted above, they tend to claim early. If we use actual claiming behavior as the base case, rather than optimal behavior using conventional strategies, the potential cost would be about $23.3 billion rather than $9.7 billion.

[31] The expanded claiming options produce a shift in the optimal claiming age for the high earner from 69 to 70. Therefore, one would expect the optimization calculation to yield a higher value than the "back-of the-envelope," since the higher-earning spouse would be receiving spousal benefits for four years instead of the three years used in the example. One would expect improved survivor benefits would also make the optimization calculation higher than the "back-of the-envelope." This is not the case. Of the possible

Distributional Impact

The final issue is who gains from the availability of the option to claim spousal benefits and then claim their own. Some obvious criteria include: 1) the individuals must be married; 2) at least one member of the couple must be healthy enough to delay claiming until 66; and 3) both spouses must have an earnings history. The higher and the more equal the earnings records, the more to gain. Figure 9 shows that the potential benefits from "Claim Now, Claim More Later" are relatively evenly distributed, though they somewhat favor households in the top two quintiles of the wealth distribution. These higher-wealth households receive over 45 percent of the total benefits. Figure 10 shows that the more equal the earnings between spouses, the greater the relative gain.

Conclusion

The financial crisis has underscored the importance of Social Security as the backbone of the retirement income system. However, with the aging of the population, Social Security is facing shortfalls that will require modifications to the current system. Therefore, policymakers will be looking for ways to trim costs. In deciding how to accomplish this objective, they may want to carefully scrutinize the existing system to ensure that all of its provisions are consistent with the basic goals of the program. This paper has examined three little-used provisions that could potentially be used by households to increase their Social Security benefits and, thus, the costs to the system.

With respect to the "Free Loan" and "Claim Now, Claim More Later" strategies, it is not clear what public policy goal they address. Each could cost up to about $10 billion annually. And a significant share of the benefits would go to high-income households. Moreover, the potential costs could rise in the future because the number of people who could take advantage of each strategy will grow as the population ages. In addition, two other factors will tend to increase the number of potential beneficiaries of the "Free Loan" strategy: the rise in the FRA reduces benefits, which also reduces the amount that individuals would need to pay back if adopting this strategy; and the shift to

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reasons, the clearest is that the "back of the envelope" calculation does not take the "claim and suspend" provision into account.

401(k) plans means that future cohorts will have more liquid assets available to take advantage of this strategy.

In contrast, our analysis of the "Claim and Suspend" option leads to a different conclusion. This strategy has a clear policy rationale. The Senior Citizen's Freedom to Work Act, which authorized its use, was designed to help people work longer. "Claim and Suspend" does just that. Individuals reentering the workforce can use it to earn delayed retirement credits. And one-earner couples can use it to initiate a spousal benefit while the primary earner continues to earn delayed retirement credits. And the roughly $0.5 billion estimated cost to Social Security is relatively modest.

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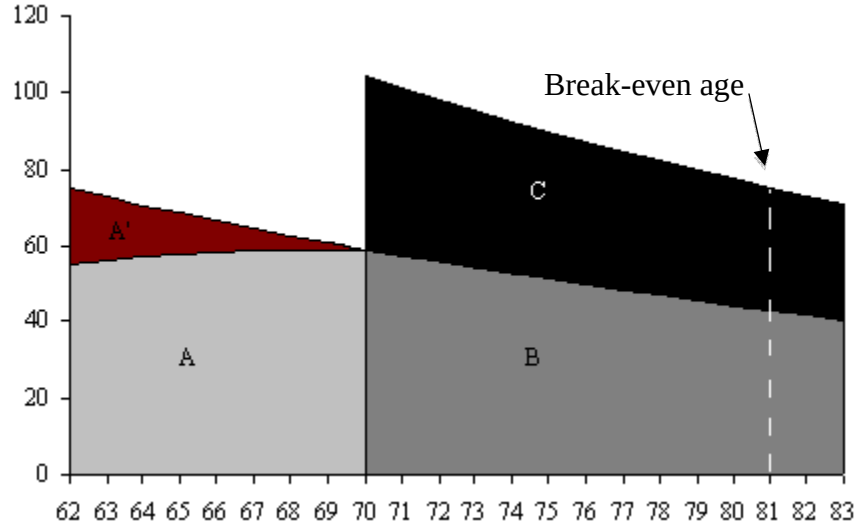
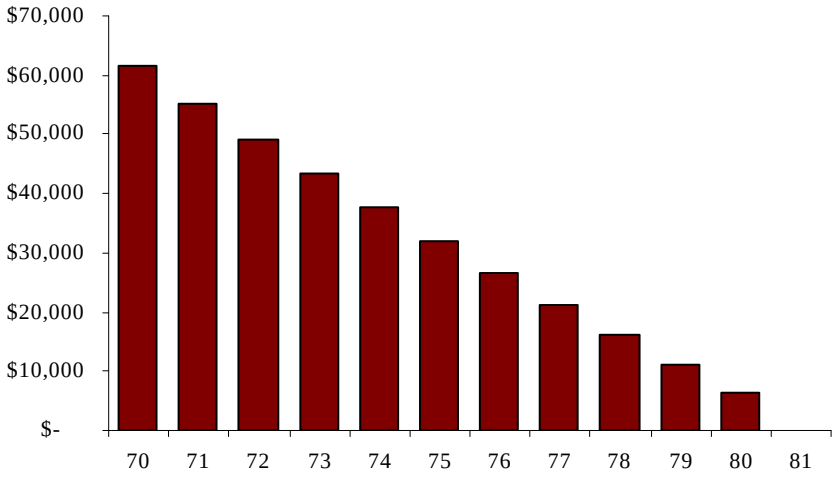
Figure 1. *Percent of PIA Received with the Borrow and Invest Strategy, by Age*



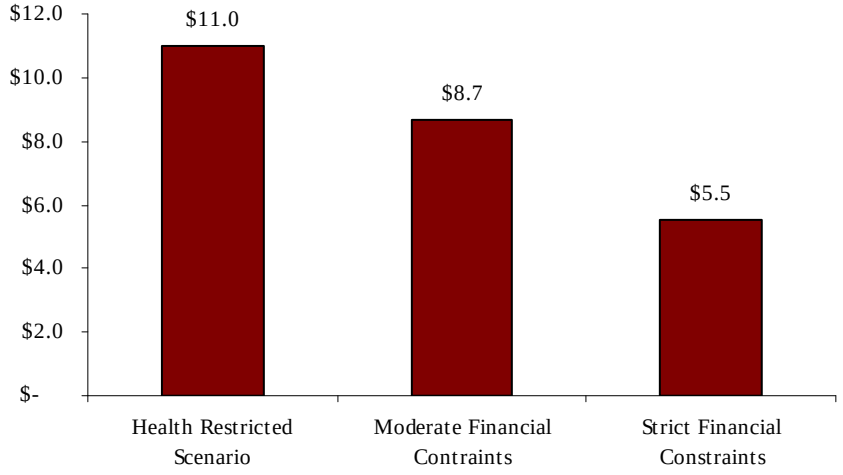
Source: Authors' illustration assuming a 3 percent discount rate.

Figure 2. *Loss Experienced by Employing "Free Loan from Social Security Strategy," by Age of Death*



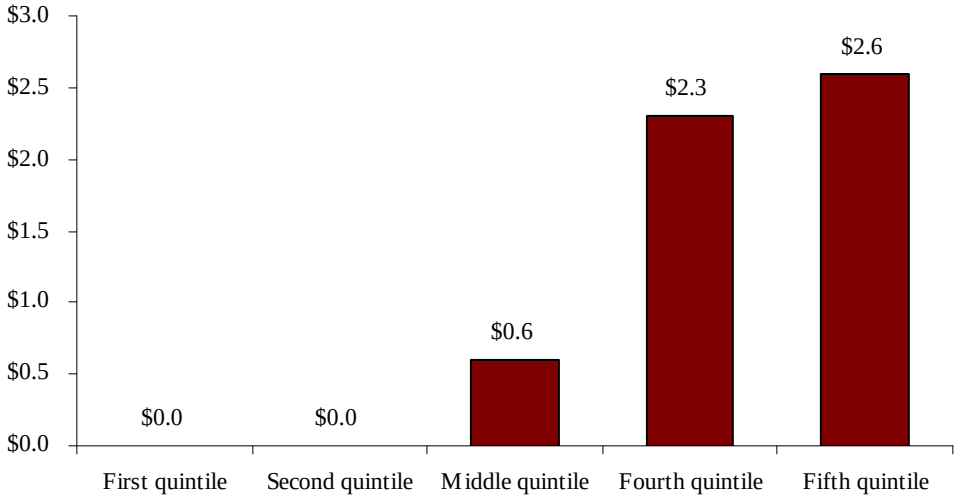
Sources: Authors' calculations from University of Michigan, *Health and Retirement Study* (HRS), 2006; and U.S. Bureau of Labor Statistics, *Current Population Survey* (CPS), 2006.

Figure 3. *Total Cost of "Free Loan" to Social Security, Billions of Dollars*



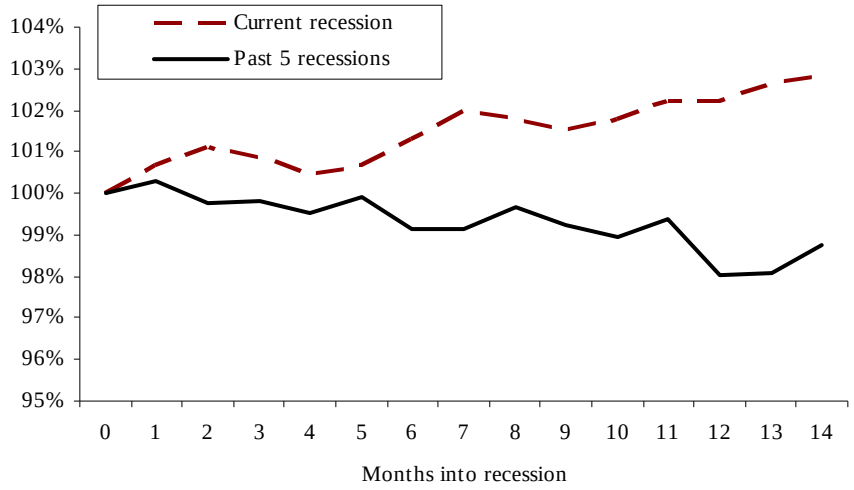
Sources: Authors' calculations from 2006 HRS and 2006 CPS.

Figure 4. *Potential Gain Under Strict Financial Constraints, by Wealth Quintile, Billions of Dollars*



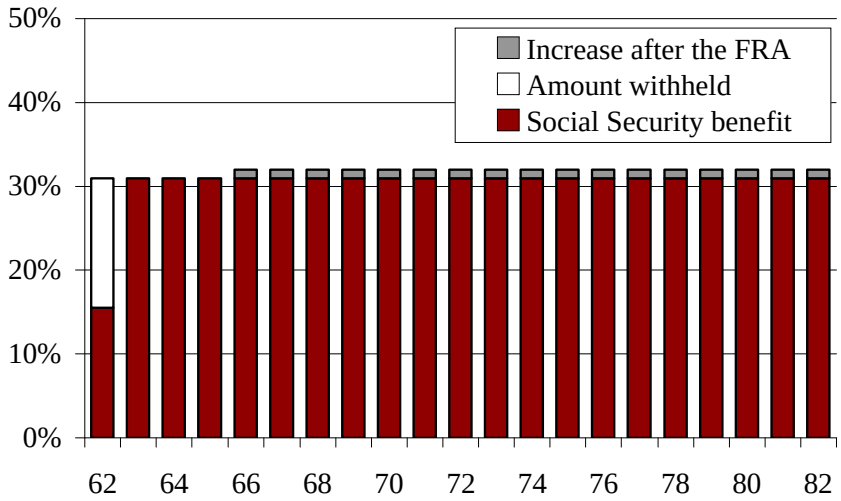
Source: Authors' calculations from 2006 HRS.

Figure 5. *Index of Labor Force Participation Rates for Men Aged 55 and Older, by Months into Recession*



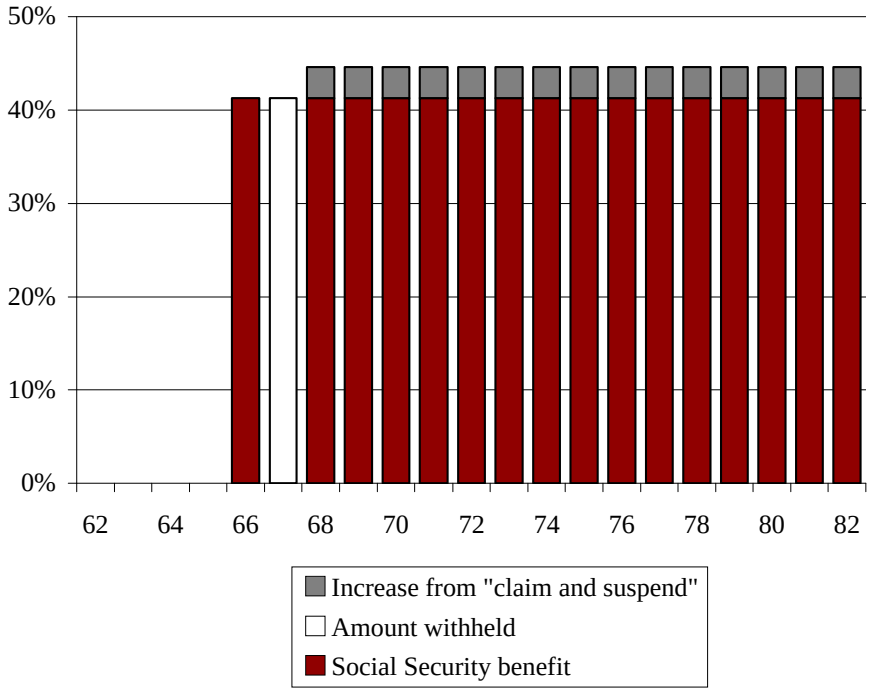
Source: Authors' calculations based on U.S. Bureau of Labor Statistics (2009).

Figure 6. *Impact of Annual Earnings Test on Average Replacement Rate Provided to Medium Earner, by Age*



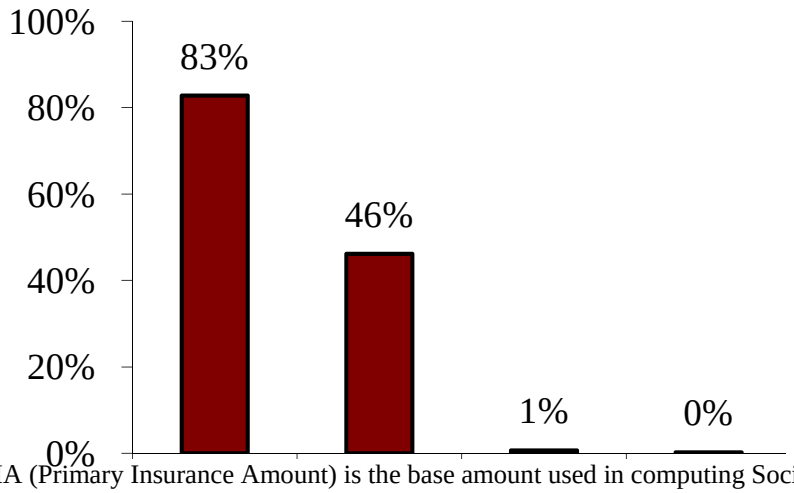
Source: Authors' calculations based on the 2008 Social Security Trustees Report; assumes an individual claims at age 62 and works until age 63 earning a salary that reduces his Social Security benefit by half.

Figure 7. *Impact of "Claim and Suspend" on Average Replacement Rate Provided to Medium Earner, by Age*



Source: Authors' calculations based on the 2008 Social Security Trustees Report; assumes an individual claims at age 66 and suspends benefits between the ages of 67 and 68.

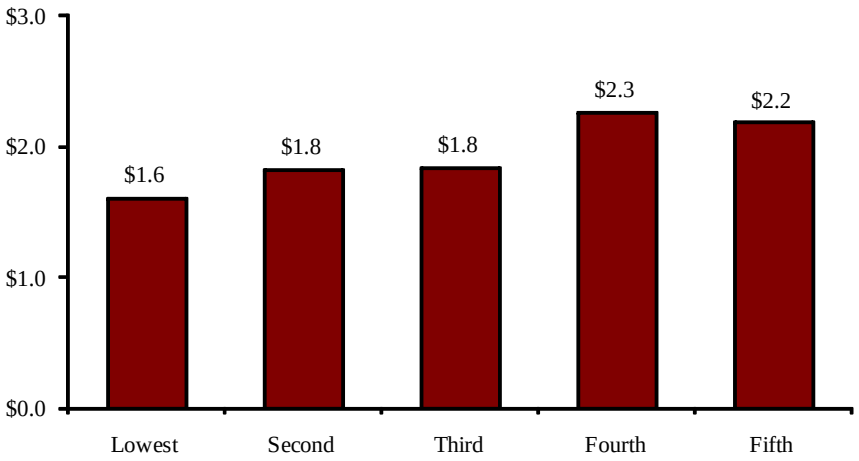
Figure 8. *Percent of Couples Following an Optimal Claiming Strategy Who Would "Claim and Suspend" by Ratio of Low to High Earner PIA**



*Note: The PIA (Primary Insurance Amount) is the base amount used in computing Social Security benefits; it is equivalent to the amount payable to a retired worker who begins receiving benefits at the Full Retirement Age.

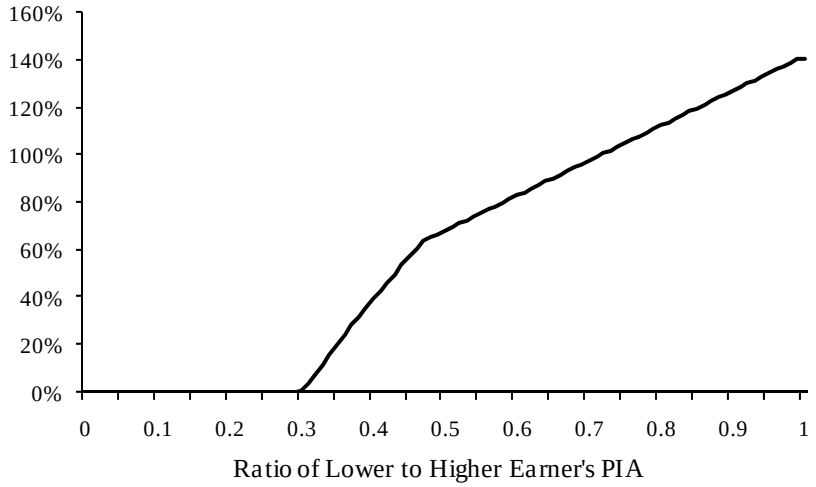
Sources: Authors' calculations based on 2006 HRS; and 2006 CPS.

Figure 9. *Potential Gain from "Claim Now, Claim More Later" Strategy by Wealth Quintiles, 2006 Dollars (Billions)*



Source: Authors' calculations based on 2006 HRS and 2006 CPS. The ability to "Claim and Suspend" is assumed for both the base and the expanded scenario.

Figure 10. *Potential Gain "Claim Now, Claim More Later" Strategy as a Percent of Higher Earner's PIA, by PIA Ratio*



Note: This calculation assumes: 1) a three-year age difference between the older, higher earner and his spouse; and 2) gender specific life expectancy. The ability to "Claim and Suspend" is assumed for both the base and the expanded scenario.
Source: Authors' calculations.

Table 1. *Spouse's Benefits as a Percent of the Worker's PIA*

Full Retirement Age	Claiming Own/Spouse's Benefit at				
	62	65	66	67	70
62 in 1999	37.5	50	50	50	50
62 in 2005-2016	35	45.8	50	50	50
62 in 2022	32.5	41.7	45.8	50	50

Source: Authors' calculations from the Social Security Retirement Planner, reviewed July 2005, available at http://www.ssa.gov/planners.

Appendix

To calculate the cost of these strategies we use data from the *Health and Retirement Study* (HRS). The HRS is a nationally-representative data set that began in 1992 with about 12,650 individuals from about 7,600 households. This original survey interviewed people age 51-61 and their spouses (regardless of age), and the survey was re-administered in 1994, 1996, 1998, 2000, 2002, and 2004. In order to calculate an accurate cost to Social Security, we need to be able to determine the actual benefit that each individual or couple will gain from using the strategies. This will depend on the actual earnings histories and wealth accumulations of people approaching retirement. The HRS provides us with the necessary detailed earnings and wealth information, and is thus ideal for this study. Earnings histories are derived from the restricted data sets of the HRS Covered Earnings Records for the years 1951-2003. For some individuals in our sample, the HRS Covered Earnings Records are available only for the years 1951-1991. In those cases, after 1991, earnings are calculated from self-reported data in the HRS and capped at the maximum taxable level. The earnings history is then used to construct the Average Indexed Monthly Earnings (AIME) for each individual. Next, Primary Insurance Amounts (PIAs) and Social Security benefit levels are estimated using the AIME and the Social Security benefit formula.

For all calculations, we assume a real interest rate of 3 percent. Also, to make our cost estimates of the strategies approach a "steady-state" amount, we assume a Full Retirement Age of 66 and delayed retirement credits of 8 percent for each year benefits are postponed – the adjustments applied to individuals born between 1943 and 1954.

When calculating the benefit arising from a specific strategy, the underlying assumption is that individuals or couples compare the present discounted value (PDV) of benefits associated with different claiming ages and elect the strategy that elicits the highest PDV. This calculation requires not only a choice for a discount rate but also the individual's or couples' survival rates. Ideally we would like to have the subjective life expectancy and survival rates of each individual in our data set to determine which households are likely to embark on these strategies and what their expected gains would be. While the HRS reports an individual's assessment of his or her probability of living to a given age, this information does not easily translate to subjective life expectancy or

mortality rates. Instead we use relative mortality rates for 12 gender-race-education categories from Brown, Liebman, and Pollet (2002) and apply them to each member of the data set.

The calculation of each strategy is associated with additional specific assumptions which we list below.

I. Calculation of the Cost of the "Free Loan from Social Security"

The analysis is based on individuals age 70 in the 2006 HRS. For this particular strategy, we assume that individuals make claiming decisions independently of their spouses. Hence, we do not take into consideration the effect that an individual's claiming behavior could have on spousal and survivor benefits.

Having calculated the PIA of each individual we are able to find the amount of interest he could have earned by claiming initially at 62 and then reclaiming at 70. Although people younger than 70 could take advantage of the ability to reclaim (that is, a person could claim at 62 and then reclaim at 64), evaluating the extreme case of claiming at 62 and reclaiming at 70 provides a clear lower boundary on the number of households who could gain from the strategy. We showed that for the strategy to result in a net gain, the individual has to live until age 81.

The original break-even age is calculated by finding the time T at which

$$\sum_{t=62}^{T} \frac{Ben_{62}}{(1+d)^{t-62}} = \sum_{t=70}^{T} \frac{Ben_{70}}{(1+d)^{t-62}}$$

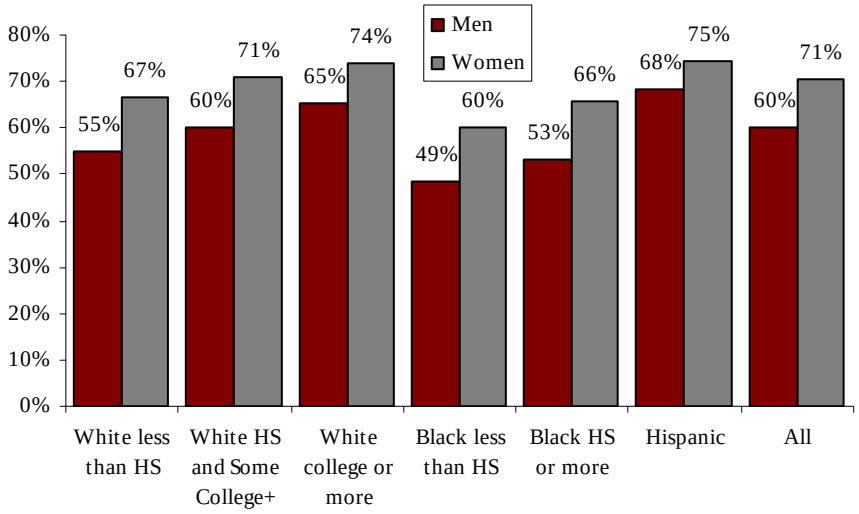
where Ben_{62} is the benefit level an individual receives beginning at age 62, Ben_{70} is the benefit level an individual receives beginning at age 70, and d is the discount rate. Because, under the "Free Loan" strategy, individuals are permitted to keep the interest they earn on their benefits, the new break-even age is calculated by finding the time T at which $\sum_{t=62}^{T} \frac{Ben_{62}}{(1+d)^{t-62}} = I + \sum_{t=70}^{T} \frac{Ben_{70}}{(1+d)^{t-62}}$

where I is the interest earned on benefits between the ages of 62 and 70.

According to the Social Security Cohort Life Tables, at age 70, 60 percent of men and 70 percent of women will live to 81. However, that gives us only an average

number. To better account for socio-economic factors that affect life expectancy and thus better identify which individuals will pursue the strategy, we use Brown, Liebman and Pollet's relative mortality tables mentioned above (see Figure A1).[32]

Figure A1. *Probability of Individuals Age 70 Living to Age 81, by Gender, Race, and Educational Attainment*



Source: Authors' calculations from Liebman, Brown, and Pollet (2002).

The potential gain to the entire 70 year-old cohort was found by multiplying each individual's potential gain by the probability that he or she would be alive at age 81. The HRS weights were then applied to calculate averages for the entire population age 70 in 2006. The total cost to Social Security is then found by multiplying those averages by the actual number of men and women aged 70 from the 2006 *Current Population Survey* (CPS).

The next step is to identify those individuals who have the required assets to exercise this strategy. This calculation requires a series of assumptions. First, in the case of couples, if benefit information for the spouse is not available, we assume that the head of house has access to all the household's assets. Second, if benefit information for the spouse is available, we assume that the couple will choose to exercise both the husband and the wife's strategy subject to their financial means. If the couple lacks the resources to pay back both benefits, the couple will choose to repay the higher benefit. If the

[32] If an individual did not fall into one of the 12 groups they were assigned gender specific cohort mortality.

couple cannot afford to repay the higher benefit, it will repay the lower benefit to the extent feasible.

With these assumptions, we impose two alternative financial constraints. Under the moderate constraint, we limit those eligible to individuals with total assets in excess of twice their age 62-70 benefits less earned interest. Under the more restrictive constraint, we define assets to include only *financial* wealth. Based on these restrictions, we calculate the percent of financially eligible men and women and their mean gain from the strategy.

II. Tax Implications of "Free Loan" Strategy

The analysis in Appendix I ignores the implication of taxes paid on Social Security benefits on the cost of the "Free Loan" strategy. When taken into account, taxes, though an important consideration, have only a minor impact on the cost estimate.

Under current law, there is an important difference between the taxation of Social Security income and all other sources of income. The taxation of Social Security benefits falls under one of three categories: a) nontaxable, b) up to 50% of benefits taxable, c) up to 85% taxable. Social Security benefits are not subject to federal income tax if the household's "combined income" (adjusted gross taxable income excluding Social Security benefits + non-taxable interest + ½ the household's Social Security benefits) is less than $25,000, or $32,000 if married and filing jointly; up to 85% of benefits are taxable if "combined income" is above $34,000 for singles and $44,000 for couples; and up to 50% of benefits are taxable if "combined income" falls between those brackets. In addition, individuals are entitled to a standard deduction of $5,450 for singles; $10,900 for married filing jointly.

For a given household, the amount of other taxable income will determine what portion of its' Social Security benefits will be taxable (anywhere between 0% and 85%) and what will be the applicable tax rate. The revenue generated from taxing benefits will be transferred back to Social Security. However, in the year of repayment, the household is entitled to either an income tax deduction or a tax credit for taxes paid on benefits that the household is now repaying. Because of this, the effect of taxes on the cost estimate is limited to the interest Social Security is able to gain on the tax revenue.

We analyze the tax effects separately for single and married households by income terciles. The calculations are based on individuals between the ages of 65 and 70 in the 2006 HRS. To find the amount transferred to Social Security, we calculated the median taxable income and median Social Security income for each tercile (see Table A.1). We then determined the amount each group owes Social Security in taxes by finding the difference between the household's tax liability with Social Security benefits included and the households' tax liability without Social Security. We find out that while doing the strategy, only the top tercile of both single and married households will be expected to pay tax on their Social Security benefits. Table A.2 shows in detail how the taxable portion of Social Security is determined. We see that for singles, 14% of their benefits will be taxable, compared to 85% (the maximum allowed) of the benefits of married households. Next, using 2008 tax rates and including the standard deduction, we determined that the median single and married household in the top income tercile will owe Social Security approximately 2.2 percent and 14.9 percent of their benefits in taxes, respectively. Among the 70 year olds in the 2006 Census, roughly 38 percent are singles, compared to 62 percent married. Overall, the decrease to our cost estimate of the "Free Loan" strategy is roughly 3.3 percent, or $370 million.

Table A.1. *Median Income for Singles and Married Couples, by Income Tercile*

	Singles		
	Lowest tercile	Second tercile	Highest tercile
Other income	$ 156	$ 3,252	$ 22,304
Social Security income	$ 7,200	$ 12,000	$ 12,720
	Married Couples		
	Lowest tercile	Second tercile	Highest tercile
Other income	$ 4,368	$ 18,412	$ 61,052
Social Security income	$ 18,000	$ 21,600	$ 23,448

Source: Authors Calculations from HRS (2006).

Table A.2. *Schedule of Taxes for Top Tercile Median Earner*

	Single	Married Couple
Pension income	$ 22,304	$ 61,052
Social Security benefit	$ 12,720	$ 23,448
1. Adjusted gross income	$ 35,024	$ 84,500
2. Tax exempt income	$ -	$ -
3. Modified adjusted gross income	$ 22,304	$ 61,052
4. Half of Social Security benefit	$ 6,360	$ 11,724
5. Provisional Income (.3 + .4)	$ 28,664	$ 72,776
6. First threshold	$ 25,000	$ 32,000
7. Excess above first threshold (5. - 6.)	$ 3,664	$ 40,776
8. Second threshold	$ 9,000	$ 12,000
9. Excess above second threshold (7. - 8.)	$ -	$ 28,776
10. Half of the smaller of 7. and 8.	$ 1,832	$ 6,000
11. Smaller of 10. or 1/2 benefit	$ 1,832	$ 6,000
12. 85% of line 9.	$ -	$ 24,460
13. Add lines 11. and 12.	$ 1,832	$ 30,460
14. 85% of total Social Security benefits	$ 10,812	$ 19,931
15. Taxable Social Security benefits (Smaller of 13. and 14.)	$ 1,832	$ 19,931
16. Percent of benefits that are taxable	14%	85%

Source: Authors Calculations from HRS (2006)

III. Calculation of the Cost of "Claim and Suspend" Strategy

The analysis of this strategy, assumes that couples make cooperative claiming decisions. In other words, the couple decides jointly when each member to claim benefits so as to maximize the total discounted present value of the household's Social Security benefits. The analysis is based on 1,006 couples with the eldest member of being between the ages of 62 and 70 in the 2006 HRS.

The first step is to determine each couple's claiming ages and subsequent lifetime benefits that maximize the expected present value of benefits (EPVB) under conventional claiming methods – without the use of the "Claim and Suspend" strategy. Imagine a couple in which the eldest spouse has just turned 62. Because 62 is the earliest age at which this spouse can claim benefits, and because his/her decision will affect the total Social Security benefits available to the household, the couple has to take the time to

decide jointly on their claiming strategy. Our goal is to find what combination of claiming ages they will choose (assuming the couple will choose the strategy that maximizes household's EPVB). For a given combination of claiming ages, EPVB is found by discounting the stream of benefits that the couple will receive from now till end of life at a real interest rate of 3 percent and applying the appropriate survival probabilities of the husband and wife in accordance with the Brown, Liebman and Pollet's gender-race-education categories. Expected survivor benefits – also a function of claiming ages – have been taken into account as well.

For a couple in which the wife is the same age or younger than her husband (i.e. the age difference between husband and wife is positive), the present discounted value of total household's benefits associated with husband claiming at age *i* and wife claiming at age *j* can be found by equation (1).

$$\begin{aligned} EPVB_{ij} = \sum_{t=62}^{120} \beta^{t-62} \Big(& \big(\max\big(B_{h,t}^{i}, Sp_{h,t}^{i} * I(t > j + \Delta^{age})\big) * I(t \geq i) \\ & + \max\big(B_{w,t}^{j}, Sp_{w,t}^{j} * I(t > i)\big) * I(t \geq j + \Delta^{age})\big) * \Pi_{h}^{t} * \Pi_{w}^{t-\Delta^{age}} \\ & + \max(B_{h,t}^{i} * I(t \geq i), Surv_{h,t}^{ij}) * \Pi_{h}^{t} * (1 - \Pi_{w}^{t-\Delta^{age}}) \\ & + \max(B_{w,t}^{j} * I(t \geq j + \Delta^{age}), Surv_{w,t}^{ij}) * (1 - \Pi_{h}^{t}) * \Pi_{w}^{t-\Delta^{age}} \Big) \end{aligned} \quad (1)$$

where $\beta = \frac{1}{1+0.03}$ is the rate of time preference; Π_{h}^{t} and Π_{w}^{t} are the annual survival probabilities of husband and wife; Δ^{age} is age difference between husband and wife; *I(.)* is an indicator variable that takes a value of 1 when the condition inside the brackets is satisfied, 0 otherwise. $B_{h,t}^{i}$ is the husband's benefit at age t based on his own earnings record if he claimed at age *i* and $Sp_{h,t}^{i}$ is spousal benefit he is entitled to at age t based on his wife's earnings record, if he claimed at age *i*. $B_{w,t}^{j}$ and $Sp_{w,t}^{j}$ are the own and spousal benefits of the wife, if she claimed at age *j*. If an individual is eligible for both personal and spousal benefits, he or she will receive the larger of the two. $Surv_{h,t}^{ij}$ and $Surv_{w,t}^{ij}$ are the survivor benefits that the husband and the wife would be entitled to should their spouse die. The survivor benefit depends both on the age that the surviving spouse starts receiving it and on the claiming age of the deceased. Our assumption is that

the surviving spouse claims the survivor benefit immediately following the death of his/her spouse. If, in addition, the surviving spouse has claimed his/her own worker benefit, she/he is entitled to the higher of the two.

We then identify the couple's combination of claiming ages i^* and j^* that yield the highest expected lifetime benefits, and assume it to be their claiming strategy under conventional behavior.

$$i^*, j^* = \underset{\substack{i\in[62,70],\\ j\in[62,70]}}{\arg\max}\, EPVB_{ij} \qquad (2)$$

EPVB* denotes the EPVB of benefits that will result from using the optimal claiming ages i^* and j^*.

$$EPVB^* = EPVB_{i^* j^*} \qquad (3)$$

The second step is to determine each couple's claiming ages and subsequent lifetime benefits that maximize EPVB when using the "claim and suspend" strategy.

Voluntary suspension of benefits is permitted after reaching the FRA and allows auxiliaries to continue receiving benefits. To introduce this strategy, we allow one member of the couple to suspend benefits after he reaches the FRA and to start accruing delayed retirement credits until he reclaims. At the same time, the spouse is allowed to continue receiving spousal benefits if she has claimed.

When the husband is the member who is allowed to suspend his benefits, the present discounted value of total expected benefits paid to the household, $EPVB^H_{ii^s i^r j}$, will be

$$\begin{aligned} EPVB^H_{ii^s i^r j} = \sum_{t=62}^{120} \beta^{t-62} \Big(& \Big(B^i_{h,t} * I(t \ge i) * I(t < i^s) + B^{i+i^r-i^s}_{h,t} * I(t \ge i^r) \\ & + \max\Big(B^j_{w,t}, Sp^j_{w,t} * I(t \ge i)\Big) * I(t > j + \Delta^{age})\Big) * \Pi^t_h * \Pi^{t-\Delta^{age}}_w \\ & + \max(B^i_{h,t} * I(t \ge i) * I(t < i^s) + B^{i+i^r-i^s}_{h,t} * I(t \ge i^r), Surv^{ii^s i^r j}_{h,t}) * \Pi^t_h * (1 - \Pi^{t-\Delta^{age}}_w) \\ & + \max(B^j_{w,t} * I(t \ge j + \Delta^{age}), Surv^{ii^s i^r j}_{w,t}) * (1 - \Pi^t_h) * \Pi^{t-\Delta^{age}}_w \Big) \end{aligned} \qquad (4)$$

where $i \in \{62,70\}$ stands for the age at which the husband claims initially, $i^s \in \{66,69\}$ is for the age at which the husband suspends benefits and $i^r \in \{i^s + 1,70\}$ is the age at which the husband reclaims his benefit.

If the wife is the member of the household who is allowed to suspend her benefits, the total expected benefits paid to the household $EPVB^W_{ijj^s j^r}$ will be

$$EPVB^W_{ijj^s j^r} = \sum_{t=62}^{120} \beta^{t-62} \Big(\Big(\max\Big(B^i_{h,t}, Sp^i_{h,t} * I(t \geq j + \Delta^{age})\Big) * I(t \geq i) + B^j_{w,t} * I(t \geq j + \Delta^{age}) * I(t < j^s + \Delta^{age}) + B^{j+j^r-j^s}_{w,t} * I(t \geq j^r + \Delta^{age}) \Big) * \Pi^t_h * \Pi^{t-\Delta^{age}}_w + \max(B^i_{h,t} * I(t \geq i), Surv^{ijj^s j^r}_{h,t}) * \Pi^t_h * (1 - \Pi^{t-\Delta^{age}}_w) + \max(B^j_{w,t} * I(t \geq j + \Delta^{age}) * I(t < j^s + \Delta^{age}) + B^{j+j^r-j^s}_{w,t} * I(t \geq j^r + \Delta^{age}), Surv^{ijj^r j^s}_{w,t}) * (1 - \Pi^t_h) * \Pi^{t-\Delta^{age}}_w \Big) \quad (5)$$

where $j \in \{62,70\}$ stands for the age at which the wife initially claims benefits, $j^s \in \{66,69\}$ is the age at which the wife suspends benefits and $j^r \in \{j^s + 1,70\}$ is the age at which the wife reclaims her benefit.

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We assume the couple will use whichever of these two strategies yields the higher present discounted value of benefits. The maximum expected present value of benefits (EPVB**) that can be achieved by using this strategy is given by equation 6).

$$EPVB** = \max\left(\max_{\substack{i \in [66,70], \\ i^s \in [66,69], \\ i^r \in [i^s+1,70] \\ j \in [62,70]}} (EPVB^H_{ii^s i^r j}), \max_{\substack{i \in [62,70], \\ j \in [62,70], \\ j^s \in [66,69] \\ j^r \in [j^s+1,70]}} (EPVB^W_{ijj^s j^r}) \right) \quad (6)$$

The third step involves for each couple subtracting the present discounted value of lifetime benefits under the conventional claiming strategy EPVB*, from the present discounted value of lifetime benefits under the "Claim and Suspend" strategy, EPVB**. If the difference is negative, we assume the couple will not use the strategy and there will be a zero net cost to Social Security. If the difference is positive, we assume the couple will use the strategy and the gain over the conventional claiming behavior is the cost to Social Security due to that couple's claiming behavior.

Finally, the HRS weights were applied to calculate average gains made by couples when using this strategy. The total cost to Social Security is then found by multiplying those averages by the actual number of couples where the eldest member is aged 62 from the 2006 CPS.

IV. Calculation of the Cost of the "Claim Now, Claim More Later"

The analysis is based on the same 1,006 couples from the HRS in which the eldest member is between the age of 62 and 70 in 2006. The analysis proceeds in three steps. The first step is to determine each couple's maximum lifetime benefits under conventional claiming methods, or under "Claim and Suspend," depending on which one is used as a baseline scenario (see (3) and (6) respectively).

The second step is to determine each couple's claiming ages and subsequent lifetime benefits that maximize EPVB when using the "Claim Now, Claim More Later" strategy. To introduce this strategy, we restrict one member of the couple from claiming benefits until he or she reaches age 66 and assume during each year that the individual delays claiming after age 66, he or she will receive a spousal benefit based on the spouse's earnings record. Because this is a joint decision, we allow for the possibility that either the individual age 62 or his spouse will be the one receiving spousal benefits while earning delayed retirement credits. When the husband uses this strategy, the total expected benefits paid to the household, $EPVB_{ij}^{H}$, will be

$$\begin{aligned} EPVB_{ij}^{H} = \sum_{t=62}^{120} \beta^{t-62} \Big(\big(& Sp_{h,t}^{66} * I(t > j + \Delta^{age}) * I(t \geq 66) * I(t < i) + B_{h,t}^{i} * I(t \geq i) \\ & + \max\left(B_{w,t}^{j}, Sp_{w,t}^{j} * I(t \geq i)\right) * I(t \geq j + \Delta^{age}) \big) * \Pi_{h}^{t} * \Pi_{w}^{t-\Delta^{age}} \\ & + \max(B_{h,t}^{i} * I(t \geq i), Surv_{h,t}^{ij}) * \Pi_{h}^{t} * (1 - \Pi_{w}^{t-\Delta^{age}}) \\ & + \max(B_{w,t}^{j} * I(t \geq j + \Delta^{age}), Surv_{w,t}^{ij}) * (1 - \Pi_{h}^{t}) * \Pi_{w}^{t-\Delta^{age}} \Big) \end{aligned} \qquad (7)$$

If the wife uses this strategy, the total expected benefits paid to the household $EPVB_{ij}^{W}$ will be

$$EPVB_{ij}^{W} = \sum_{t=62}^{120} \beta^{t-62} \Big(\Big(\max\Big(B_{h,t}^{i}, Sp_{h,t}^{i} * I(t \geq j + \Delta^{age})\Big) * I(t \geq i) + Sp_{w,t}^{66} * I(t \geq i) * I(t \geq 66 + \Delta^{age}) * I(t < j + \Delta^{age}) + B_{w,t}^{j} * I(t \geq j + \Delta^{age}) \Big) * \Pi_{h}^{t} * \Pi_{w}^{t-\Delta^{ag}} + \max(B_{h,t}^{i} * I(t \geq i), Surv_{h,t}^{ij}) * \Pi_{h}^{t} * (1 - \Pi_{w}^{t-\Delta^{age}}) + \max(B_{w,t}^{j} * I(t \geq j + \Delta^{age}), Surv_{w,t}^{ij}) * (1 - \Pi_{h}^{t}) * \Pi_{w}^{t-\Delta^{age}} \Big) \quad (8)$$

$EPVB^{***}$ - the highest expected lifetime benefits under the "Claim Now, Claim More Later" strategy is found by equation (9)

$$EPVB^{***} = \max\left(\max_{\substack{i \in [66,70], \\ j \in [62,70]}} (EPVB_{ij}^{H}), \max_{\substack{i \in [62,70], \\ j \in [66,70]}} (EPVB_{ij}^{W}) \right) \quad (9)$$

As in the "Claim and Suspend" strategy, the third step involves for each couple subtracting the present discounted value of lifetime benefits under the baseline scenario, from the present discounted value of lifetime benefits under the "Claim Now, Claim More Later" strategy with $EPVB^{***}$. If the difference is negative, we assume that the couple will not use the strategy and there will be a zero net cost Social Security. If the difference is positive, we assume the couple will use the strategy and the gain over the baseline claiming is the cost incurred by Social Security due to that couple's claiming behavior.

Finally, the HRS weights were applied to calculate average gains made by couples when using this strategy. The total cost to Social Security is then found by multiplying those averages by the actual number of couples in which the eldest member is aged 62 from the 2006 CPS.

Note that the $9.7 billion figure reported as the resulting annual cost to Social Security from allowing "Claim Now, Claim More Later" assumes that "Claim and Suspend" is allowed both under conventional claiming and under "Claim Now, Claim More Later." For simplicity, we have not specifically listed the household's objective function when both "Claim Now, Claim More Later" and "Claim and Suspend" are

allowed- it is a combination of equations 4), 5) , 7) and 8) from above. The baseline scenario was defined as conventional claiming with “Claim and Suspend” allowed- or equation 6).

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