

Retirement Effects of Social Security Reform

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A Note About this Summary in the Conference Volume.

Our presentation to the Fifth Annual Conference will report the results of two projects we have undertaken for the Michigan Retirement Research Center. The first is entitled “The Social Security Early Entitlement Age in a Structural Model of Retirement and Wealth”. The second project is entitled “Retirement Effects of Proposals by the President’s Commission to Strengthen Social Security”.

Because this presentation in the conference volume is limited to 20 pages, it includes summaries of the two papers rather than the full research papers. The first summary is taken from the *Issue in Brief* reporting the results of “The Social Security Early Entitlement Age in a Structural Model of Retirement and Wealth” on the MRRC website. The second highlights our findings from “Retirement Effects of Proposals by the President’s Commission to Strengthen Social Security”.

Complete copies of the two papers can be obtained at the following websites respectively:

<http://papers.nber.org/papers/w9183.pdf>, and <http://www.dartmouth.edu/~agustman/#D>.

The Social Security Early Entitlement Age in a Structural Model of Retirement and Wealth

Executive Summary

Thirty years ago, the most common retirement age was 65. Today it is 62, with 65 as a secondary peak. While there are several good reasons why we see a decrease in retirement at age 65, explaining the new peak at 62 is more difficult. Although the fact that eligible workers can begin claiming Social Security retirement benefits at age 62 is a large part of the explanation, there are strong incentives to continue working. Workers can only claim partial benefits at age 62 but many would receive substantially higher benefits if they delayed claiming for a few years. Despite better than actuarially fair increases for many from postponing benefit claiming at 62, many workers retire at 62.

The difficulty in understanding retirement at age 62 makes the analysis of some Social Security reforms very difficult. Increasing the early entitlement age is one reform proposed to address the impending Social Security funding crisis. A serious problem is that we do not know how retirement ages will change given this reform. An important concept that has been overlooked as a possible candidate for understanding the retirement spike at 62 is people's desire to have what they want now rather than later, called a time preference. Moreover, time preference is not evenly distributed throughout the population. Some people are savers and others are not. That is, some people have a high taste for saving and would save for their old age even at very low interest rates, while others would require a much higher return if they are to forego current spending and increase saving. In this paper, we demonstrate that to understand retirement behavior, and in particular the observed peak in retirement at 62, one must understand saving behavior. Contrary to the predictions of simple retirement models, many who retire at 62 instead of 65 have saved less than those who delay their retirement. Because we have no actual experience with changes to the early entitlement age, our analysis employs a policy experiment in which we explain the current peak with an econometric model, and then use that model to estimate what the effects might be of increasing the age at early entitlement from 62 to 64. We find that this change will shift about 3/5 of the bunching of retirement ages from 62 to 64.

How Do Time Preferences Work?

Typically time preference is thought to be the same for all workers. More realistically, it varies from person to person. Moreover, a large group of workers may have high time preference while another significant group may have low time preference. Allowing it to vary across individuals resolves some problems and makes our model more realistic. First, workers who have a high time preference and are considering retiring at 62 will understand that their benefits would be increased substantially if they delayed their retirement, but because of their “I want it now” attitude, they will devalue the increase in benefits from delaying retirement. This helps us understand why so many people collect benefits at the earliest opportunity. Second, they are not likely to have saved much, and will not be able to retire before age 62. And third, difference in time preferences allows us to explain the huge differences we find in wealth among households with similar lifetime incomes. Those with a high time preference are more likely to spend as they earn and to save very little for the future.

Data

The data used in this study come from the Health and Retirement Study (HRS), a nationally representative sample of households that contains at least one person born between 1931 and 1941. The study was started in 1992 and conducts interviews every two years. The last year for which data are available is 2000. Because of the differences between men and women and married and single in retirement patterns, the present analysis is focused on married men only.

A portion of these data are linked with Social Security earnings records which allows us to calculate potential streams of earnings and benefits that a worker would accrue by working to different ages in order to predict retirement. We also have information on how much workers have saved, or their assets, which allows us to calculate a variable for time preference on the assumption that those with a high time preference will have lower assets at an older age than those with a low time preference. We also account for age, year of birth (cohort), health status, the value of other pension benefits, and how pension benefits vary with age of retirement.

Summary of Major Findings

- The majority of people value their future well-being sufficiently, so that they save enough for the future
- However, close to 30% of people seem to have an “earn-it-and-spend-it” mentality and have not saved any assets at all.
- Considering the effects of age on retirement decisions, we find that the value of leisure in retirement increases by almost 8% per year of age.
- Poor health has about the same effect on retirement as being four years older, but year of birth has almost no effect on retirement.

Using the above results and the current retirement age of 62, we run our policy experiment by simulating data to see how well our model predicts the observed retirement ages.

- Our simulation produces two spikes in retirement at ages 62 and 65, which are the main features of the current pattern.
- Other models cannot explain the peak in retirements at 62 and the peak at 65. They can only explain one or the other.
- Because our model more accurately replicates the current retirement patterns than others, and in particular the spikes in retirements at both ages 62 and 65, our next simulation results are more credible than others.

We run the simulation again, increasing the early retirement age to 64.

- We find a decrease in the retirement at age 62 by almost 5% (from 8.1 to 3%)
- We now observe a significant spike in retirement at age 64.
- People with pension plans and working spouses, who would have enough money to retire at 62, also delay their retirements to 64 .

Some people simply cannot afford to retire until Social Security benefits become available. In addition, people who face severe liquidity constraints would probably continue to work beyond age 64, because of future increases in the social security benefits (recall that the benefits increase as people postpone retirement). However, because we observe workers with other resources--who could afford to retire at 62-- shifting to 64, we attribute the changes in retirement ages to the differences in time preferences. People who value today's welfare relatively more than tomorrow's welfare likely retire when the Social Security benefits become available, because for them an increase in the future benefits from delaying retirement is not so important. After an increase in the early retirement age from age 62 to age 64, they simply choose to retire at age 64. Since people who value today's welfare relatively more tend to have low savings, it does make sense that these individuals now choose not to retire at age 62. The remaining peak we observe at age 62 is probably accounted for by effects of rules governing other pension plans.

Conclusion

Using the existing retirement models, we cannot explain the observed retirement peaks at both ages 62 and 65, and have greatest trouble explaining the retirement peak at 62. Without understanding this retirement pattern, we cannot credibly predict and discuss the effects of Social Security reform plans, for example, an increase in the early entitlement age. To solve this problem, we suggest analyzing retirement and saving together. Doing so, we have demonstrated that we can generate the retirement peaks at ages 62 and 65 in simulation. We also run simulations to study the effects of an increase in the early entitlement age to 64. In our experiment, when we change the early entitlement to 64, approximately 3/5 of the bunching at age 62 moves to age 64. This result indicates that the financial effects on the Social Security system of increasing the early entitlement age may be substantial.

Retirement Effects of Proposals by the President's Commission to Strengthen Social Security

Executive Summary

In December 2001, the President's Commission to Strengthen Social Security (CSSS) issued its final report. Rather than a single reform model to modify social security, the Commission explored three different reform models, all of which include the introduction of voluntary personal accounts. The first reform model, however, does nothing to address the long-term funding imbalances in the social security system. The second and third proposals do include elements to strengthen the system, and as a result these are the proposals that are being given the most consideration.

The reform models are required to include personal retirement accounts, and these must be voluntary. To make the personal accounts attractive to the entire range of covered workers, including those who are effectively receiving transfers under the current system, the Commission devised an offset system. For every dollar of payroll taxes diverted to the personal account, future traditional benefits will be reduced by a specified present value amount. To mitigate the solvency problem, traditional benefits are prescribed to grow more slowly than would be the case under the current formula.

In these proposals, the Commission also included several elements to increase the relative benefits paid to low-wage workers and their widows, and to reduce the relative benefits of higher income workers. In one reform model, the Commission also included reforms to try to induce individuals to retire later, since benefit reductions for early retirement aggravate the plight of low-wage earners and their families.

The Actuaries' Supplement appended to the Commission report traces the effects of the reform models on the financial health of the system and on the income levels of various groups of individuals who would be affected by the changes. However, several of the elements of these reform models can be expected to have non-trivial effects on retirement. These retirement

effects are not considered in the Actuaries' Supplement or, as far as we are aware, in any other analysis of the Commission proposals.

To simulate the retirement effects of the various elements of the Commission proposals, we use a structural dynamic model of retirement and savings that we have developed for previous work. This model posits lifetime expected utility that is constrained by an asset accumulation equation and an uncertain lifetime. Retirement preferences and time preferences are both allowed to be heterogeneous among workers. Workers are allowed to partially retire, usually in a different job at a lower wage rate. Social security enters as income in the asset accumulation equation in the years that benefits are received. The current utility value of the future benefits is, of course, heavily dependent on the worker's time preference rate. We apply the model to simulate the retirement effects of the Commission proposals on a sample of married men.

We find that some of the elements of the Commission's proposals would have large consequences for retirement, and others would have only minor consequences. The most powerful effect on retirement would come from keeping benefits roughly constant in real terms, which would imply sharply lower replacement rates as real earnings increase over time. At age 62, this effect could reduce retirement by 7 percentage points at the end of the 75 year projection period, relative to paying benefits according to the current formula. Indexing benefits to life expectancy would lower the effect to 4 percentage points, about the same as would occur if the system were allowed to continue and, after the trust fund is exhausted, pay benefits proportional to revenue. The other major reform element, at least in terms of its impact on retirement behavior, is the proposal to reduce early retirement benefits. This would reduce retirement from full-time jobs by about 3-4 percentage points in the years prior to the normal retirement age. The other elements of the proposals, including increasing benefits for low-wage workers, reducing benefits to high-wage workers, and increasing survivor benefits for workers below the median wage, would produce only very modest changes in retirement behavior, even among the groups affected.

The President's Commission Proposals

The most prominent element of the President's Commission to Strengthen Social Security proposals is probably the part with the smallest systematic labor supply implications. This is of course the proposal for personal accounts. The retirement effects of the personal accounts depend on the realizations of the returns to those accounts. They nevertheless will be minimal.¹

Accordingly, in this paper we consider the retirement effects of the remainder of the measures in the Commission's reform models. Table 1 summarizes these measures for the second and third of the Commission's reform models. As is evident from the table, the two reform models share some common features, but there are also some important differences. In addition, the third reform model contains a couple of features that are absent from the second reform model.

In terms of restoring the financial balance to social security, the first element listed in the table is by far the most important. In reform model 2, the percentages in the PIA formula would be adjusted downward every year so that the average benefit would remain roughly constant in real terms. In reform model 3, the adjustments would hold the growth in the average benefits to the growth in earnings less the growth in average life expectancy. In practical terms, this means that the average real benefits in reform model 3 would grow at about 0.5 percent per year, as

¹If the accounts earn about as much as expected, the retirement effects should be minimal. If the returns to the accounts substantially exceed expectations, individuals might want to retire earlier, while if the accounts perform poorly individuals might want to delay retirement. In this regard the retirement effects of the personal accounts are almost identical to the effects of holding risky assets in non-social security retirement accounts. We have examined this issue very recently in the context of the 1995-2002 stock market bubble (Gustman and Steinmeier, 2002d), where we found that the boom had the potential for increasing the average percentage of retired individuals by about three percentage points in the early to mid 60's age range, and the subsequent bust had essentially the opposite effect. Due to the contribution limits in the proposed personal accounts, the amounts in the personal accounts would be considerably smaller than the amounts considered in that paper, so that the impact of even a major swing in stock prices would probably cause no more than a percent or so change in the percentage of retired individuals.

opposed to a projected real earnings growth of 1 percent per year. In either case, the replacement rate of social security benefits to earnings would be gradually reduced below levels called for in the current formula, and the influences of social security on retirement would be gradually reduced. The effect should be about twice as great with reform model 2 as with reform model 3. In reform model 2, the size of traditional social security benefits, relative to wages, would be less than half as much at the end of the 75 year planning period as they are today.

Both reform models also have provisions to maintain the benefits of long-term low-wage workers at or above the poverty level, although the details differ. Reform model 2 would boost the basic benefit of a 30 year minimum wage worker by about 40%, which is enough to provide benefits at roughly 120 percent of the poverty level. This boost would be proportionately reduced toward zero for workers with less than 20 years of experience and for workers with lifetime earnings exceeding the earnings of a 35 year worker with twice the minimum wage. Reform model 3 would give the 30 year minimum wage worker a smaller boost of 12 percent, but the boost would extend all the way up to the average wage level before it is phased out. It would also be phased out for individuals with less than 20 years of covered earnings, but additional years of earnings beyond 30 would result in an even higher boost, which contrasts with the case of reform model 2. Overall, one would expect that the boosts for low wage workers in reform model 2 would be greater, but would cover a smaller percent of the work force.

Reform model 3 contains a proposal to impose a larger reduction in benefits for retiring early and to raise benefits more when retirement is delayed, so as to improve incentives to work longer. It is the only part of any of the proposals whose primary purpose is explicitly to increase the age at which people retire. Under current law, when the normal retirement age increases to age 67, retirees at age 62 will receive 70 percent of full benefits, while delaying retirement past age 67 will increase benefits by 8 percent per year. Under the proposal, age 62 retirees would receive only 63 percent of full benefits, while delaying retirement past age 67 would increase

benefits by a whopping 10 percent per year of delay. Similar changes for spouse benefits would make the benefits payable at age 62 only 58 percent of full benefits as opposed to 65 percent under the current law.

A fourth element of the Commission proposals, which is essentially the same for both reform models, is to increase the surviving spouse benefit of low-wage couples to 75% of the benefit that would have been received if both spouses were still living. This provision applies if the surviving spouse benefit is less than the average benefit for retired workers. Currently the surviving spouse benefit is between 50% and 67% of the couple's combined benefit, so the change would raise the benefits of eligible surviving spouses by between 13 and 50 percent, which is a nontrivial magnitude. On the other hand, at the time retirement decisions are made, the applicability of surviving spouse benefits is probably a couple of decades away, and this extended length of time will tend to dull the effect of this provision on retirement.

The last element listed in the table, which again applies only to reform model 3, is a proposal to drop the percentage rate in the highest PIA bracket from 15 percent to 10 percent. The reduction in benefits for high wage workers is much less than the one third decline in this percentage would suggest. Even for individuals with relatively high average earnings, most of the social security benefit comes from the first two brackets of the PIA formula, which replace 90 percent and 32 percent of average earnings, respectively. The clear intent of this proposal is to generate some of the funds necessary to finance some of the additional subsidy given to low-wage workers, thus offsetting the negative effects of some of the other proposed changes on the bottom part of the distribution.

The reform models have some other elements related more to the financing issue rather than to the retirement issue. Notably, both reform models 2 and 3 call for the infusion of funds from the general treasury for at least some periods. It would be necessary to consider these elements if the purpose of the paper were to examine the relative effectiveness of the reform models to solve the solvency issue, but it is probably less critical to examine them in an analysis of the effects of these reform models on retirement. As a result, we will limit the analyses in this

paper to the proposals listed in Table 1, which are the main proposals that can be expected to have a significant impact on retirement.

The Retirement Model

The model used in this paper is a dynamic life cycle model with heterogeneous time and retirement preferences. As seen in Figure 1, the model reproduces current patterns of retirement behavior. By including heterogeneous time preferences and heterogeneous retirement preferences, the model is able to capture the peaks in retirement behavior at age 62 and age 65 without incorporating discontinuities in preferences which would make individuals want to retire preferentially at those ages. The model is also able to approximate the rest of the retirement distribution fairly accurately, and to include the non-trivial number of individuals who go through a phase of partial retirement as well. In short, the model contains the essential elements that permit it to analyze the effects on retirement of various potential changes which would alter individuals' incentives to retire, including potential changes in the social security system.

Simulations of the Commission's Proposals

One of the strongest changes in the proposals is to reduce the overall level of traditional benefits relative to the benefits provided under the current formula. The effects on retirement of benefit level changes in the Commission's Reform Models 2 and 3 are shown in Figure 4. In addition to the changes in the two proposals, we also simulate changes to the legislated formula which would occur anyway because in the long run, revenues are not sufficient to cover benefits under the current formula, which we call feasible benefits.

Feasible benefits would hardly be affected in 2025, since under current projections the system would still be solvent and able to pay benefits under the current formula. Between 2025 and 2050, however, the trust fund would be exhausted, and only about three-quarters percent of the current benefits could be paid. By 2075, the percentage of benefits that could be paid is expected to drop further to about two-thirds. The reductions in benefits make retirement less attractive, particularly for individuals with high time preference rates. The effective reduction in compensation at age 62 from reducing benefits to balance the finances of the social security

system is decreased for these individuals, reducing the incentives to retire. By 2075 the effect of benefit level changes on the percent retired amounts to a little over 4 percentage points at age 62, which means the full-time work by 62 year-olds would increase almost 10 percent relative to what it would otherwise be.

Next we consider the effect of holding the overall level of benefits constant in real terms, which is the proposal in the Commission's reform model 2. Note that although benefits are constant in real terms, they are a shrinking fraction of real wages. As a result, by 2075 the replacement rate of social security benefits would be less than half of the current levels. The retirement effect would grow steadily over time until, by 2075, it would reduce retirement from full-time jobs by around 7 percentage points, which amounts to an increase in full-time workers of around 15 percent compared to current law, or about 2.5% compared to the feasible alternative. Next we consider the retirement effects of indexing benefits to life expectancy, which is projected to allow real benefits to grow by about half the rate that would occur under the current formula. This is the proposal in the Commission's reform model 3. Not surprisingly, the effects are roughly half of the effects of the proposal to hold real benefits constant. Perhaps more surprisingly, the effects are roughly comparable to allowing social security to run its course and, when the trust fund runs out, to pay benefits proportional to the revenues of the system year-by-year.

Following that, we consider the proposal to increase the penalties for early retirement and increase the financial rewards for continued work past the normal retirement age. These proposals are part of the Commission's reform model 3 but are not part of reform model 2, and they were included explicitly to provide incentives for individuals to work longer, which presumably helps the financial situation of the trust fund. As seen in Figure 5, we find substantial effects for these changes, particularly for the 65 year olds. The changes are measured as percentage points of the number of individuals at the given age. The percentage changes in those working full-time is considerably larger than the percentage point changes. For instance, the 3.4 percentage point increase in full-time work for 65 year olds in 2075 represents a 15

percent increase in the number of 65 year olds working full-time in that year. The changes are in the desired direction and not inconsequential. The change for the current cohorts at age 65 is the largest in magnitude, probably because 65 was the normal retirement age for those cohorts, and delayed retirement credits averaging around 6 percent would be replaced with a credit of 10 percent. A similar situation obtains for the current cohorts at age 67. Future cohorts would just have reached the normal retirement age at 67, so the effects at that age for those cohorts would be much reduced.

Just focusing on future cohorts, however, the effects at age 62 and 65 are still considerable. Between three and four percentage points of the entire cohort would be added to the full-time employment rolls at these two ages, and at the ages in between as well.

Other of the Commission's proposals are found to have smaller effects on retirement outcomes. Consider the proposals to benefit low earners. Both reform models focus on longer-term workers and do not propose any changes for workers with less than 20 years of coverage. The changes for workers with between 20 and 30 years of coverage are phased in. The provision would boost benefits by 40 percent for minimum wage workers with 30 years of coverage under reform model 2, and by 12 percent under reform model 3. For workers with more than 30 years experience and/or less than the minimum wage, the percentage could be higher than 12 percent in reform model 3, but not above 40 percent in reform model 2. In these calculations, the minimum wage is presumed to grow at roughly the same rate as overall wages.

We find the effects of either of these provisions on overall full-time work effort to be considerably lower than for either of the other two changes that have been considered. The proposals would increase retirement, presumably because they would make retirement more affordable for low wage workers, and the higher benefits would also increase the penalty for continued work for those with high time preference rates. Nevertheless, neither of these proposals would change retirement at age 62 by more than half a percentage point of the cohort size, considerably less than the several percentage point change for the previous proposals. The

effect of the proposal in reform model 2 is somewhat greater than that for reform model 3, reflective of the fact that the benefit increases are larger in reform model 2.

Looking at the effects of the low wage provisions on the group of respondents who would be affected by the provisions, the retirement effects are considerably larger for reform model 2, reaching an increase of almost 3 percentage points in the number of such individuals retired from full-time work. A primary reason for the larger increase in the effect among the affected workers in reform model 2 is that the percentage of affected workers is considerably less under reform model 2 than under reform model 3. The increased benefits for low wage workers under reform model 2 phase out at twice the minimum wage, and only about 16.5 percent of the sample is under this limit in the HRS. The increased benefits under reform model 3 phase out at the average earnings amount, which means that a considerably larger percentage (35.4 percent) of the sample is affected. The smaller percentage under reform model 2 means that the dilution of the effect in the overall sample averages is greater than for reform model 3.

We find very weak retirement effects of the proposal to increase the survivor benefit to 75 percent of the amount that the couple would have received had both spouses survived. This benefit increase is limited to the average primary insurance amount of all worker beneficiaries in the previous year, reduced appropriately if the worker started taking any benefits before the normal retirement age. Possibly because its effects are not felt until around 20 years after retirement, the changes in the retirement probabilities are much smaller for this element of the proposals than they have been for the previous elements. For the overall population, the increases in retirement from full-time work at age 63 would be less than 0.3 percent for the current generation, and around 0.1 percent for the generations approaching retirement around 2025 and afterward. Since around a third of the respondents are eligible for this benefit, the increases for those affected are roughly three times as large. The larger effect for the current generation relative to future generations appears connected to the fact that the future generations will be subject to a later normal retirement age than was the case for the original HRS

generation. In any case, retirement effect of increasing survivor benefits appears to be quite modest, especially when compared to the other changes being considered.

Finally, we examined the effects of lowering the top bracket in the PIA formula to 10 percent from its current level of 15 percent. The effects of this proposal are again fairly modest, although the effects in this case are roughly the same regardless of which generation is considered. For all generations, the proposal would increase retirement from full-time work at age 62 by about a quarter of a percentage point. Since not quite two-fifths of the sample would be affected by this change, the effects on the part of the sample affected by the change are about two and a half times the effect on the entire sample.

The relatively small size of changing the upper range of the PIA formula probably results from the relatively small size of the benefit changes which would occur as a consequence. In 2000, the upper bend of the PIA formula occurred at \$1,332. Looking at men who started claiming benefits in that year, approximately 38 percent of them had PIA's above this amount.² The median PIA of those whose AIME was over the upper bend point appears to be between \$1,450 and \$1,500 per month. Reducing the percentage applicable above the upper bend point from 15 percent to 10 percent would lower benefits by around \$50, or about 3 percent. Thus, benefits calculated for earnings above the upper bend point constitute only a small fraction of total benefits even for individuals above the upper bend point. As a result, it is not surprising that this change would have only a relatively small effect on retirement.

Conclusions

Changes in social security are very nearly a certainty, given the approaching retirement of the baby boom. The proposals of the President's Commission to Strengthen Social Security are a prominent example of the potential changes that can be considered. The effects of these proposals on the benefits of various groups and on the financial solvency of the system have been carefully examined by the actuarial office of the system, but the potential retirement effects

² *Annual Statistical Supplement, 2001*, Table 6.B4. This figure approximately agrees with the percentage calculated from the HRS.

of these proposals have been less well examined. The analysis presented in this paper suggests that these effects may be substantial. Over the next 75 years, the trend toward less work and earlier retirement, which has recently been interrupted, should continue as rising incomes induce individuals to take a larger percentage of their potential wages as leisure. A couple of the Commission's proposals contain features which would work the other way, and would provide individuals with incentives to delay their retirement substantially. Most important are the effects of lower benefits and of enhanced incentives to postpone retirement. The overall effect could be enough to more than offset the trend toward earlier retirement that would otherwise occur.

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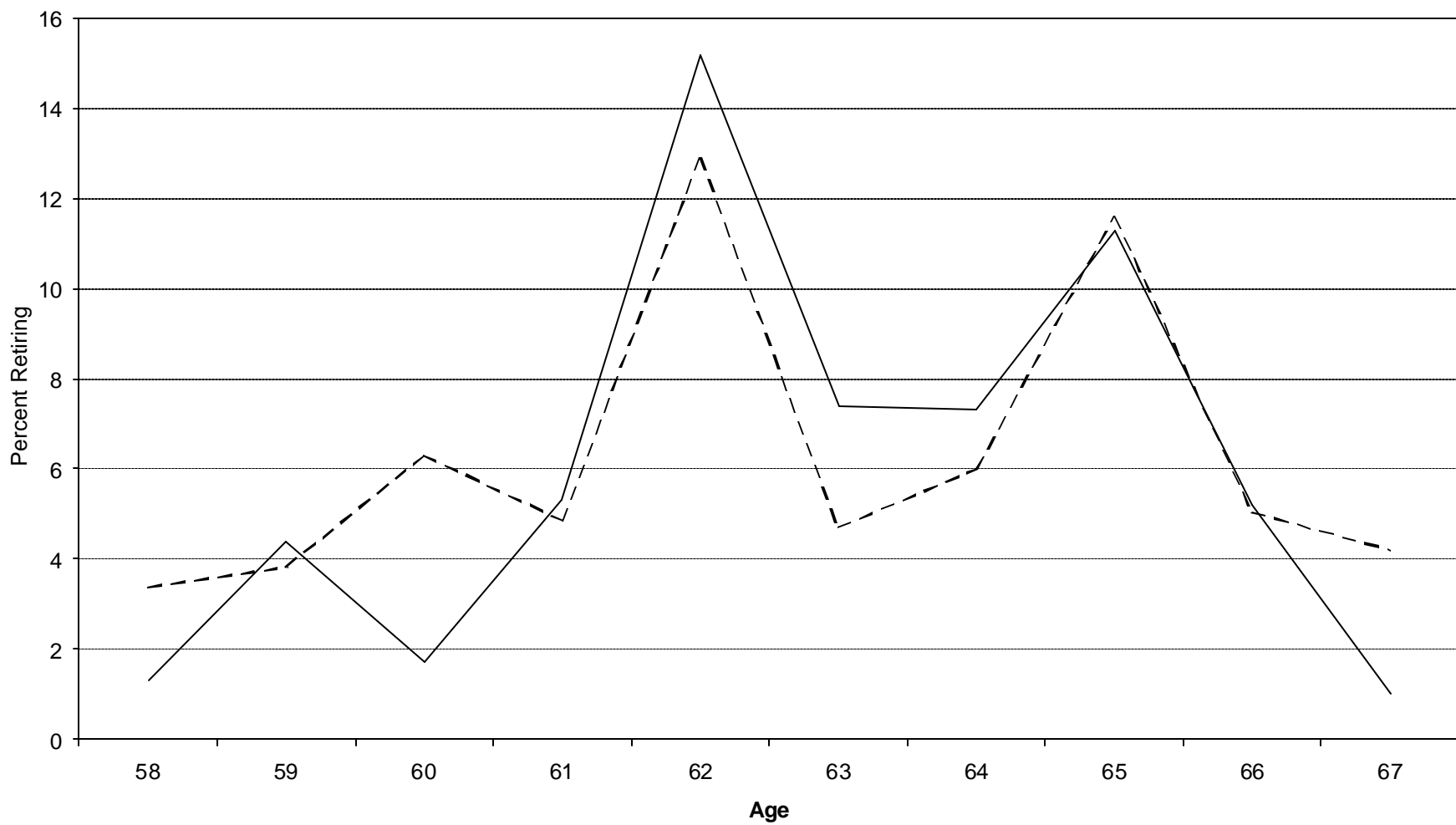
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Table 1
Elements of the Commission Reform Models

Reform Model 2	Reform Model 3
Traditional benefits held constant in real terms	Traditional benefits indexed to changes in life expectancy
Minimum benefit for 30 year minimum wage worker increased to 120% of poverty level	Minimum benefit for 30 year minimum wage worker increased to 100% of poverty level
	Increased penalties for early retirement and increased rewards for delayed retirement
Increase survivor benefit to 75% of couple benefit	Increase survivor benefit to 75% of couple benefit
	Decrease marginal benefit for highest AIME bracket from 15% to 10%.

Figure 1
Retirements From Full-Time Work



— Retirements From FT Work: Actual - - - Simulated

Figure 4
Effects of Adjustments in Benefit Levels On Percent Retired From Full-Time Work at Age 62

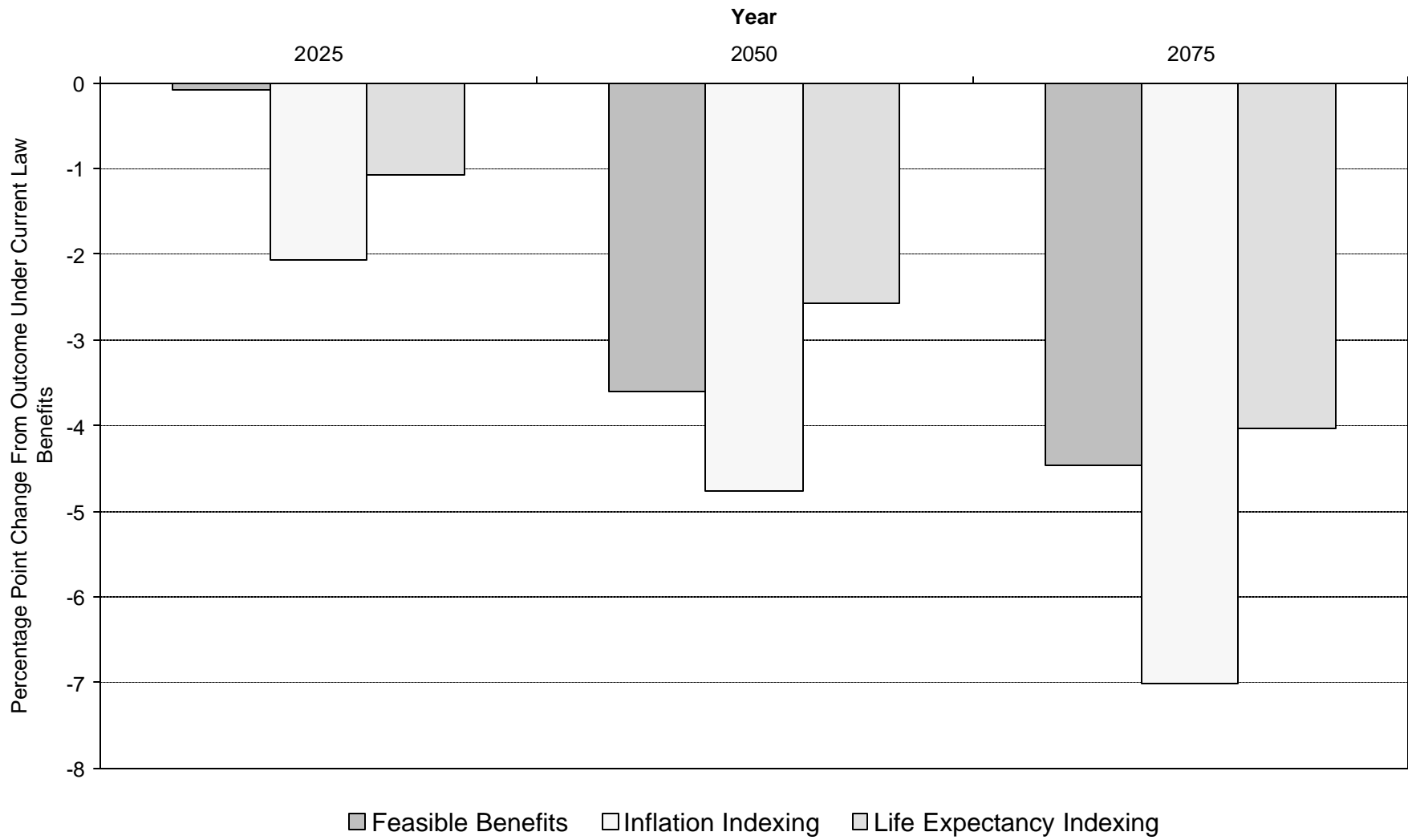


Figure 5
Effects of Changes in Actuarial Adjustments on Percent Retired from Full-Time Work

