Evaluating Lump Sum Incentives for Delayed Social Security Claiming*

Olivia S. Mitchell and Raimond Maurer

October 2017

PRC WP2017
Pension Research Council Working Paper
Pension Research Council
The Wharton School, University of Pennsylvania
3620 Locust Walk, 3000 SH-DH
Philadelphia, PA 19104-6302
Tel.: 215.898.7620 Fax: 215.573.3418
Email: prc@wharton.upenn.edu
http://www.pensionresearchcouncil.org

*The authors acknowledge the excellent help and collaboration of Karen Smith and Melissa Favreault from the Urban Institute and appreciate comments provided by Sita Slavov. We are grateful for funding from the AARP to conduct the research, and we also benefited from computing assistance from Yong Yu from the Pension Research Council of the Wharton School at the University of Pennsylvania. All opinions and any errors are our own. All findings, interpretations, and conclusions of this paper represent the views of the author(s) and not those of the Wharton School or the Pension Research Council.

Evaluating Lump Sum Incentives for Delayed Social Security Claiming*

Olivia S. Mtichell and Raimond Maurer

Abstract

Using behavioral parameters suggested by our research and simulated by the DYNASIM team at the Urban Institute, we evaluate the potential impact of a Lump Sum reform for delayed Social Security claiming. We show that the Lump Sum delayed benefit plan does not dramatically change solvency outcomes for the Payable or the Scheduled benchmarks. Thus, the proposed reform does not solve the solvency problem facing Social Security nor does it worsen it materially. Second, the differences in projected poverty fractions are remarkably small and may even be overestimated. Third, other distributional analyses show income increases, but the changes are relatively small relative to both Scheduled and Payable benchmarks. Fourth, asset projections show that the lowest and middle-income groups accumulate substantially higher nest eggs under the Lump Sum delayed benefit plan. This is a positive result inasmuch as lower-paid individuals are more likely to value the additional assets in retirement. Accordingly, the Lump Sum reform we have outlined here has positive distributional consequences overall without costing the system more money.

Olivia S. Mitchell
Wharton School, University of Pennsylvania
3620 Locust Walk, 3000 SH-DH
Philadelphia, PA 19104
E-Mail: mitchelo@wharton.upenn.edu

Raimond Maurer
Finance Department, Goethe University
Theodor-W.-Adorno-Platz 3 (Uni-PF. H 23)
Frankfurt am Main, Germany
E-Mail: maurer@finance.uni-frankfurt.de

Evaluating Lump Sum Incentives for Delayed Social Security Claiming

Olivia S. Mitchell and Raimond Maurer

To better understand why so many Americans claim their Social Security benefits early and what might be done to incentivize longer worklives, we have developed a theoretical economic model of life cycle behavior that takes into account many realistic aspects of the labor market and benefit rules (Maurer et al. 2017a). We have also calibrated this model with a purpose-built empirical survey examining whether providing incentives to workers to delay claiming their Social Security benefits would be attractive (Maurer et al., 2017b). Our work to date has shown that many people, particularly those who indicated that they would claim *early* under the current set of Social Security rules, would *delay claiming* and *work longer* if they were offered an incentive to do so.

In the present project, we report on the potential distributional and solvency consequences of our proposed Social Security reform. To this end, we have provided behavioral estimates derived from our research to the Urban Institute, which in turn implemented them in its large microsimulation model called the Dynamic Simulation of Income Model (DYNASIM).[1] Specifically, we provided parameters that could be used to simulate potential outcomes under a Social Security reform giving workers a lump sum incentive to delay their claiming age and work longer. The Institute experts used this information to simulate possible distributional and solvency outcomes of such a reform. They also compared the outcomes with two benchmarks, namely "Scheduled" benefits and taxes, and "Payable" benefits and taxes. "Scheduled" refers to benefit formulas and tax revenues computed under current law formulas. We note that Scheduled benefits cannot actually be paid when the system runs short of money, anticipated to occur in about 2032,

[1] A detailed discussion of DYNASIM is available in Favreault et al. (2015) and a similar version used to evaluate Social Security reforms known as MINT is described in Smith et al. (2010).

unless some additional revenue sources are found. By contrast, the "Payable" benchmark refers to benefit amounts reduced to the levels that can be paid under current tax rules. Under the status quo, benefits paid to all current and future retirees will need to be reduced from about 2032 by about 25-30% (Social Security Trustees 2016).

Current Social Security Policy and the Lump Sum Policy Alternative

Under the current Social Security rules, an eligible individual can claim retirement benefits as early as age 62 or defer them as late as age 70. His monthly benefit paid for life depends on his earnings history and his claiming age, with a reduction if he claims before his Full Retirement Age (FRA), or with an increment for deferring claiming after the FRA. For someone born in 1960 or later, for example, deferring the benefit from age 62 to his FRA of 67 would entitle him to an increase in monthly benefits of around 43 percent (see Table 1 below).[2] In particular, delaying claiming to age 70 implies a 77 percent increase in lifetime monthly benefits.

[2] When these rules were legislated (in the mid 1980s), the Social Security delayed retirement credit was intended to be actuarially fair. Hence, the benefit increment was consistent with average mortality tables at the time, as well as a 2.9% real assumed interest rate; our work assumes the same real interest rate. Current low interest rates imply that the delayed retirement credit is actually better than fair for most people at present, thus embodying additional incentives to defer retirement (see Shoven and Slavov, 2014). For additional information on the S*tatus Quo* benefit formula, see http://www.ssa.gov/retirement/retirement.htm.

Table 1: Delayed Claiming Boosts Monthly Social Security Benefits: Status Quo Scenario

Claiming Age	Monthly Benefit: (% of PIA)	Boost with 1 year delay (%)	Cumulative boost compared to age 62 (%)
62	70		
63	75	7.14	7.14
64	80	6.67	14.29
65	86.67	8.34	23.81
66	93.33	7.70	33.33
67	100	7.15	42.86
68	108	8	54.29
69	116	7.41	65.71
70	124	6.90	77.14

Notes: Full Retirement Age (FRA): 67; PIA = Primary Insurance Amount. Source: www.ssa.gov.

The Lump Sum policy we explored involves a policy innovation for Social Security which induces later claiming among some large fraction of the population. Rather than cutting benefits, however, our reform offers people an incentive to delay claiming their Social Security benefits. Specifically, someone who was willing to defer claiming beyond the early retirement age would receive – at his eventual claiming age – his age 62 monthly benefit for the remainder of his life plus a lump sum reflective of the additional benefit he would otherwise have gained by delaying claiming. In other words, retirees would still receive their age-62 (reduced) benefit at the delayed claiming age, but in addition would get from Social Security a substantial immediate payout at that age which will encourage them to claim later. Moreover, at least some older individuals would work longer, which would delay the date when they start withdrawing money from their savings, thus preserving more for later in retirement.

In view of peoples' preference for lump sums over annuities, we anticipate that this innovation would incentivize delayed claiming (Maurer et al. 2017a). The fact that people would still receive their age-62 benefit at the later claiming date helps protect people against running out of money. The additional lump sum payout could help them reduce mortgage and other debt, as well as focus them on the potential benefits from working longer (Brown et al. 2016).

The particular alternative considered in the simulation analysis allowed people to claim their early Social Security benefits at age 62 with the early retirement reduction factor applied as under current rules, or else to delay claiming by a year or more all the way up to age 70. At each later claiming age, the retiree would be entitled to his age-62 benefit from the later age, plus a lump sum. Assuming a monthly $1,500 benefit at age 62, the (roughly) actuarially neutral lump sums that would leave the system no better off from a solvency perspective are provided in Table 2.

Table 2:
Illustrative Benefit Impact of Delayed Claiming: Status Quo vs. Two Lump Sum Scenarios

	(1) Status Quo	(2) Lump Sum			(3) Delayed Lump Sum		
Claiming Age	Monthly Benefit	Monthly Benefit	+	Lump Sum	Monthly Benefit	+	Lump Sum
62	1,500	1,500	+	0	1,500	+	0
63	1,607	1,500	+	20,208	1,607	+	0
64	1,714	1,500	+	39,382	1,714	+	0
65	1,857	1,500	+	63,887	1,857	+	0
66	2,000	1,500	+	86,963	2,000	+	0
67	2,143	1,500	+	108,589	2,143	+	0
68	2,314	1,500	+	133,427	2,143	+	28,090
69	2,486	1,500	+	156,480	2,143	+	54,428

Notes: Full Retirement Age (FRA): 67, Assumed Social Security Benefit at Age 62: $ 1,500. *Status Quo* refers to the current Social Security system (column 1). *Lump Sum* (column 2) holds the monthly benefits constant at all claiming ages; the lump sum amount payable at the claiming age in that row is the actuarial present value of the difference in monthly benefits between the *Status Quo* and those paid in the *Lump Sum* scenario. *Delayed Lump Sum* (column 3) increases monthly benefits to the FRA with no lump sum payment; thereafter monthly benefits are constant and the lump sum is the actuarial present value of the difference in monthly benefits between the *Status Quo* and the FRA benefit. Source: Maurer et al. (2017b).

In the Urban Institute simulations, the entire lump sum amounts were assumed to be deposited into nontaxable Roth accounts which, after retirement, were invested in 10-year Treasury bonds earning a 3% real return. After retirement, households were assumed to spend down their retirement assets (including the Roth accounts) using the DYNASIM approach to

spenddowns. The Roth investment earnings and withdrawals were excluded from taxable income, but were assessed for SSI eligibility. Any remaining lump sums at the first retiree's death would be made available to the surviving spouse, if any, on the death of the retiree.

The Lump Sum delayed benefit plan was simulated incorporating the delayed claiming patterns we reported using the survey evidence in Maurer et al. (2017b). Estimated changes in claiming changes and work behavior are illustrated in Table 3. Inasmuch as we found that similar changes in work and claiming patterns obtained when lump sum payments were reduced by 13%, the actual simulations implemented that version of the reform.

Table 3: Estimated Claiming Delays and Additional Work by Age

Status Quo Claiming Age Group	With Lump Sum	
	Mean Delay in Claiming Months	Mean Additional Work Months
62	17.7	10.2
63	10.9	5.3
64	6.1	3.5
65	7.1	3.5
66	5.3	3.1
67	0.9	-2
68	-0.6	-2.4
69	-7.3	-10.1
70	-10.5	-8.7
Total	4.6	1.5

Source: Maurer, Mitchell, Rogalla, and Schimetschek (2017b)

An Overview of the Simulation Results from the DYNASIM Model

In what follows, we report a variety of results taken from the Urban Institute report on its simulation exercise (Smith 2017a and b). Because DYNASIM is such a rich and complex model, specific questions about the program code and how the intergenerational results are generated

should be directed to the model's creators. Nonetheless, after reviewing the extensive spreadsheets provided and various different results, we concluded that the model is extremely rich, faithful to very detailed US tax and transfer rules, and a very powerful and detailed tool that provides a perspective on distributional and cross-generational outcomes of policy interest. Two caveats are worth noting: first, DYNASIM does not generate optimal life cycle profiles for the millions of observations it tracks; and second, it does not feed its micro results into an overall macro model which then solves endogenously for next period's interest rates, prices, and so forth. Accordingly, while the results are informative and realistically nuanced, they must be interpreted as partial equilibrium in spirit, and they are also not necessarily identical to what people behaving optimally would do.

To outline our presentation of results,[3] in what follows we first report how solvency estimates for the Social Security system compare under both the "Scheduled" and the "Payable" benchmarks, over both shorter term (25 years) and longer term (75 years) periods. Second, we provide some distributional outcomes comparing our reform to the benchmarks by age, education, sex, and marital status. We also report changes in the fraction with income below poverty, and changes in assets for people age 62+ by income quintile in different years. Last, we show how asset accumulation patterns compare under our Lump Sum delayed benefit reform versus the key benchmarks.

Regarding System Solvency: Figure 1 indicates the projected actuarial balance in the Social Security system under our reform compared to both the Scheduled and Payable benchmarks. In all cases, the actuarial deficit is reported as a percent of payroll, as is conventional in the literature, and results for both the 25-year and 75-year horizon are reported. On the left side of the figure, we

[3]Our reporting of results uses the format provided in Smith (2017b).

see that the actuarial shortfall under our policy is roughly identical to the Payable benchmark over both the 25 and 75-year horizons. In other words, benefits must be reduced by about the same amount under the Status Quo and the Lump Sum delayed benefit plan, and the difference is negligible between the two in terms of solvency results. For the Scheduled benefit scenario represented on the right, the 25-year shortfall is a bit larger under our reform, 0.39% of payroll, while the Lump Sum delayed benefit plan shortfall is slightly smaller (by .06%) over the 75-year period. In our view, the similarities between the projections confirm the fact that the Lump Sum reform does not dramatically change solvency projections compared to the two conventional benchmarks.

Figure 1 here

Regarding Distributional Outcomes: Next, we compare a variety of distributional outcomes using the DYNASIM output for the Lump Sum reform as well as the two benchmarks. Figure 2 indicates the projected fraction of persons age 62+ with income below poverty in 2025, 2035, and 2045, under the Lump Sum scenario as well as the two benchmarks. Focusing first on Payable benefits (the two left-hand sets of bars), we show that the fraction poor in 2025 under the Lump Sum scenario is slightly higher, 0.03%, than projected under current law; the fraction is 0.04% higher in 2035; and identical in 2056. Turning to the Scheduled benefits benchmark, the fraction poor in 2025 is 0.03% higher in 2025 and 2035, and 0.02% in 2045. We believe that these differences are remarkably small and may be overestimated insofar as the Roth account payout rates assumed by the DYNASIM model are not the same as conventional annuity payout rates.[4]

Figure 2 here

[4] DYNASIM uses an annuity conversion that accounts for differential mortality by age, cohort, sex, race, and education, which differs from a market annuity calculation (personal communication from Karen Smith 3/10/17).

Additional information regarding our reform's impacts on income *vis a vis* the Payable and the Scheduled benchmarks by sex, age, marital status, and education is provided in Figure 3. Interestingly, the percentage income changes are positive though relatively small across all the figures. For instance, focusing on Payable benefits on the left side of Figure 3A, the income increases under our Lump Sum reform are quite similar by sex. In Figure 3B, the youngest group experiences a 2.5-3.2% income increase under the Payable scenario, while the oldest group would receive the smallest income boost, averaging 0-0.5%. Income increases by marital status (Figure 3C) average 1-2%. Income improvements by education (Figure 3C) are of the same order of magnitude, but it is worth noting that by 2045, the less-educated groups fare relatively better than the better-educated. Results by educational groups indicate income improvements of between 0.8-2.6% under the Payable scenario. While the direction of income changes is generally similar for the Scheduled benchmark, the size of the changes tends to be smaller.

Figure 3 here

Regarding Asset Levels: Inasmuch as the Lump Sum delayed benefit provides retirees with an asset they receive on claiming their benefits post-ERA, it is of interest to evaluate how much these assets are worth. Naturally having access to the Lump Sums is valuable, as this gives people an additional degree of freedom with which they can meet health or other shocks. Figure 4 summarizes results by for the lowest, middle, and highest income quintiles in 2025 and 2045. Once again, changes to Payable benefits appear on the left, and changes to Scheduled benefits on the right sides of the figures.

Figure 4 here

Irrespective of whether one focuses on the Scheduled or Payable simulations, the lowest paid group would have more 17% more assets ($25,552 versus $21,773) under the Lump Sum

reform versus the Status Quo. The middle-income group has more 7% assets ($10,600) under the Lump Sum versus the Status Quo. Finally, the highest income group has 1.3% less ($20,000) under the Lump Sum. Larger percentage and dollar changes are observed in the year 2045 simulation. In sum, since lower-paid individuals are more likely to value the additional assets, it can be concluded that the Lump Sum delayed benefit plan has positive distributional consequences overall.

Conclusions

The DYNASIM simulations of the Lump Sum reform for delayed Social Security claiming suggest several key conclusions. First, the similarities between the projections confirm that the Lump Sum delayed benefit reform does not dramatically change system solvency outcomes versus the Payable or Scheduled benchmarks. In other words, while the reform does not by any means rectify the solvency problem facing the system, it does not have a materially worse impact. Second, the differences in projected poverty fractions are remarkably small and may even be overestimated, since as the Roth account payout rates assumed by the DYNASIM model are not conventional annuity payout rates. Third, the other distributional analysis show income increases, but the changes are relatively small relative to the Payable benchmark. Changes are even smaller for the Scheduled benchmark. Fourth, the asset projections show that the lowest and middle-income groups accumulate higher nest eggs under the Lump Sum delayed benefit reform. This is a positive result inasmuch as lower-paid individuals are more likely to value the additional assets in retirement. Accordingly, the Lump Sum plan we have outlined here has positive distributional consequences overall without costing the system substantially more money.

References

Brown, J., A. Kapteyn, and O. S. Mitchell. (2016) "Framing and Claiming: How Information-Framing Affects Expected Social Security Claiming Behavior." *Journal of Risk and Insurance*, 83(1): 139-162.

Favreault, M. M., K. E. Smith, and R. W. Johnson. 2015. "The Dynamic Simulation of Income Model (DYNASIM): An Overview." Urban Institute Report, September

Maurer, R., O. S. Mitchell, R. Rogalla, and T. Schimetschek. (2017a). "Optimal Social Security Claiming Behavior Under Lump Sum Incentives: Theory and Evidence." NBER WP.

Maurer, R., O. S. Mitchell, R. Rogalla, and T. Schimetschek. (2017b). "Will They Take the Money and Work? An Empirical Analysis of People's Willingness to Delay Claiming Social Security Benefits for a Lump Sum." *Journal of Risk and Insurance*. Forthcoming.

Shoven, J. B. and S.N. Slavov. (2014). "Does it Pay to Delay Social Security?" *Journal of Pension Economics and Finance*, 13 (2): 121-144.

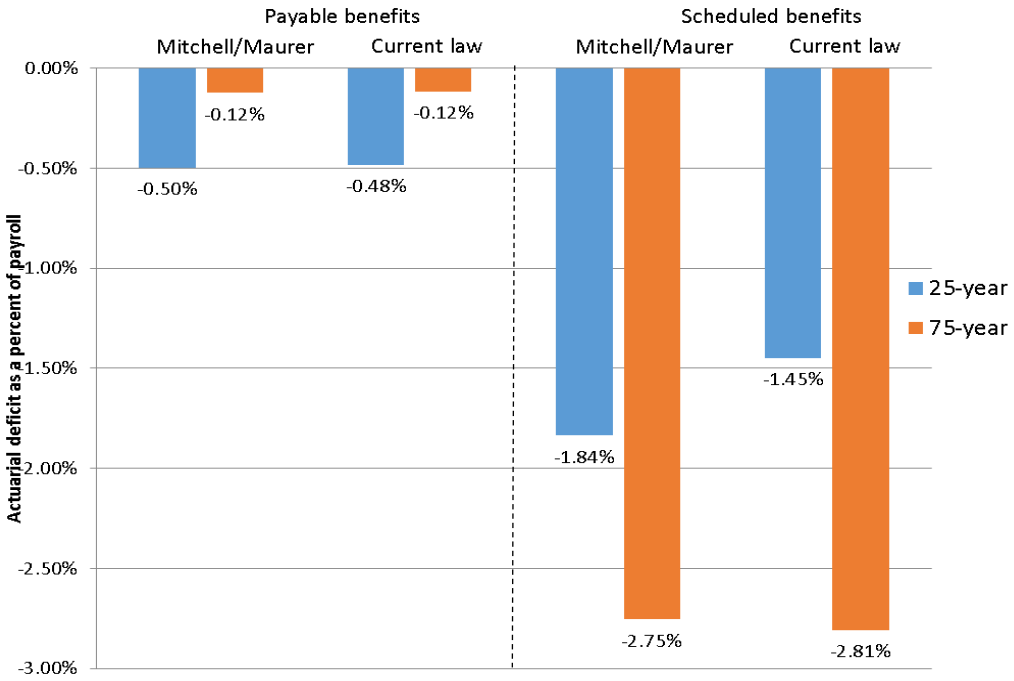
Smith, K. E. (2017a). "Selected Charts from the Dynamic Simulation of Income Model (DYNASIM) Describing Proposals from AARP's Policy Innovation Challenge." Urban Institute Report, April.

Smith, K. E. (2017b). "Summary of Mitchell and Maurer Option." Urban Institute Report, April.

Smith, K.E., M. M. Favreault, B. A. Butrica, and P. Issa. (2010). "Modeling Income in the Near Term: Version 6." The Urban Institute, December.

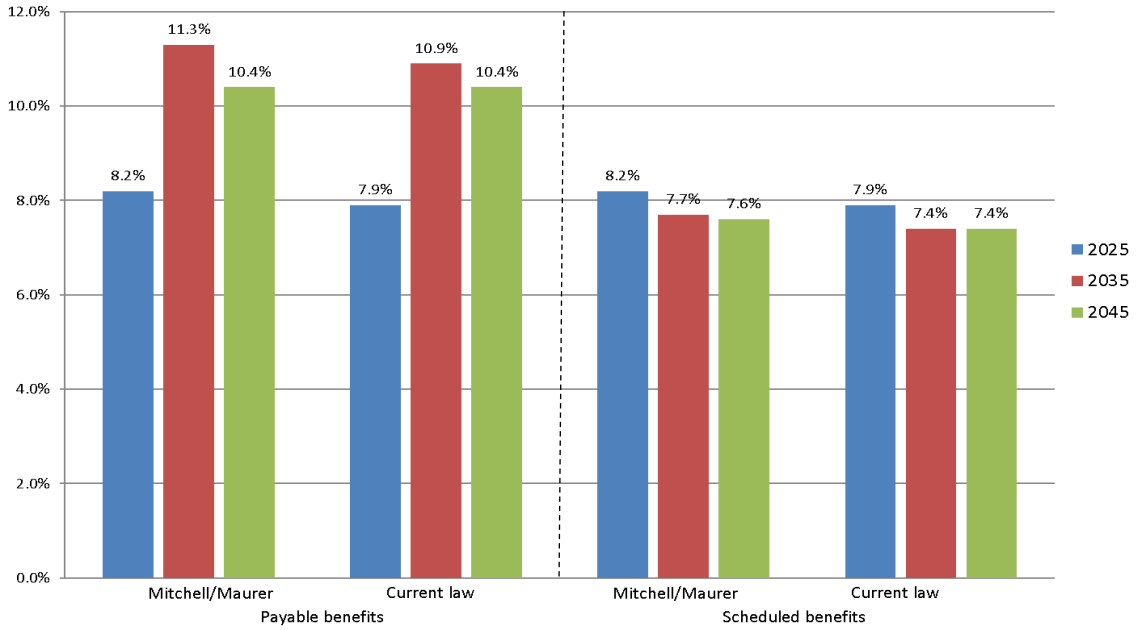
Social Security Trustees (2016). *The 2016 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds*. https://www.ssa.gov/oact/tr/2016/index.html

Figure 1. Projected Actuarial Balance Over Two Time Horizons



Note: Derived from data supplied in Smith (2017b).

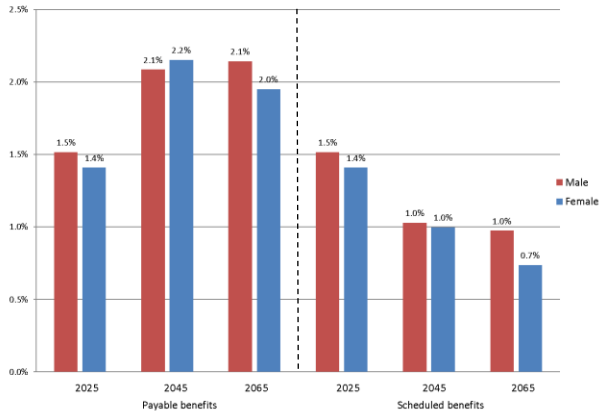
Figure 2. Percent Age 62+ With Income Below Poverty: 2025, 2035, 2045



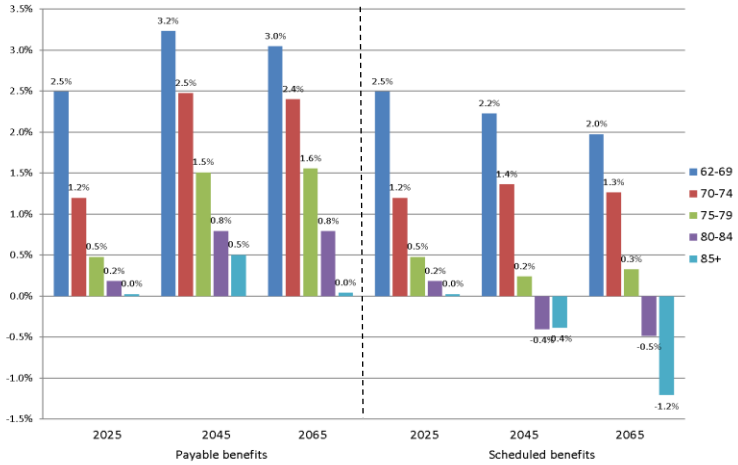
Note: Derived from data supplied in Smith (2017b).

Figure 3. Percentage Change in Average Per Capita Cash Income of Mitchell/Maurer Lump Sum Delayed Benefit Reform for People Age 62+ by Selected Socio-demographic Characteristics: 2025, 2035, 2045 (Current Law Payable on left and Current Law Scheduled on right)

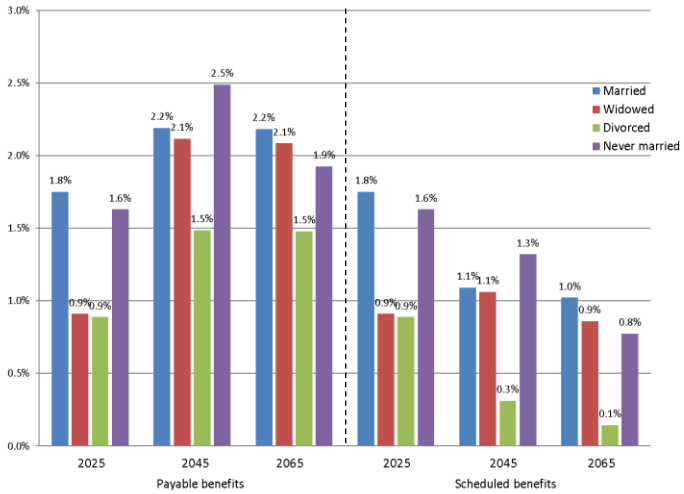
A. By sex:



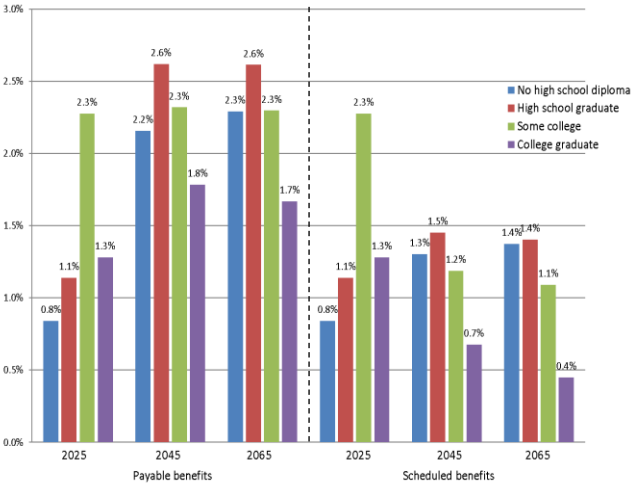
B. By age:



C. By marital status:

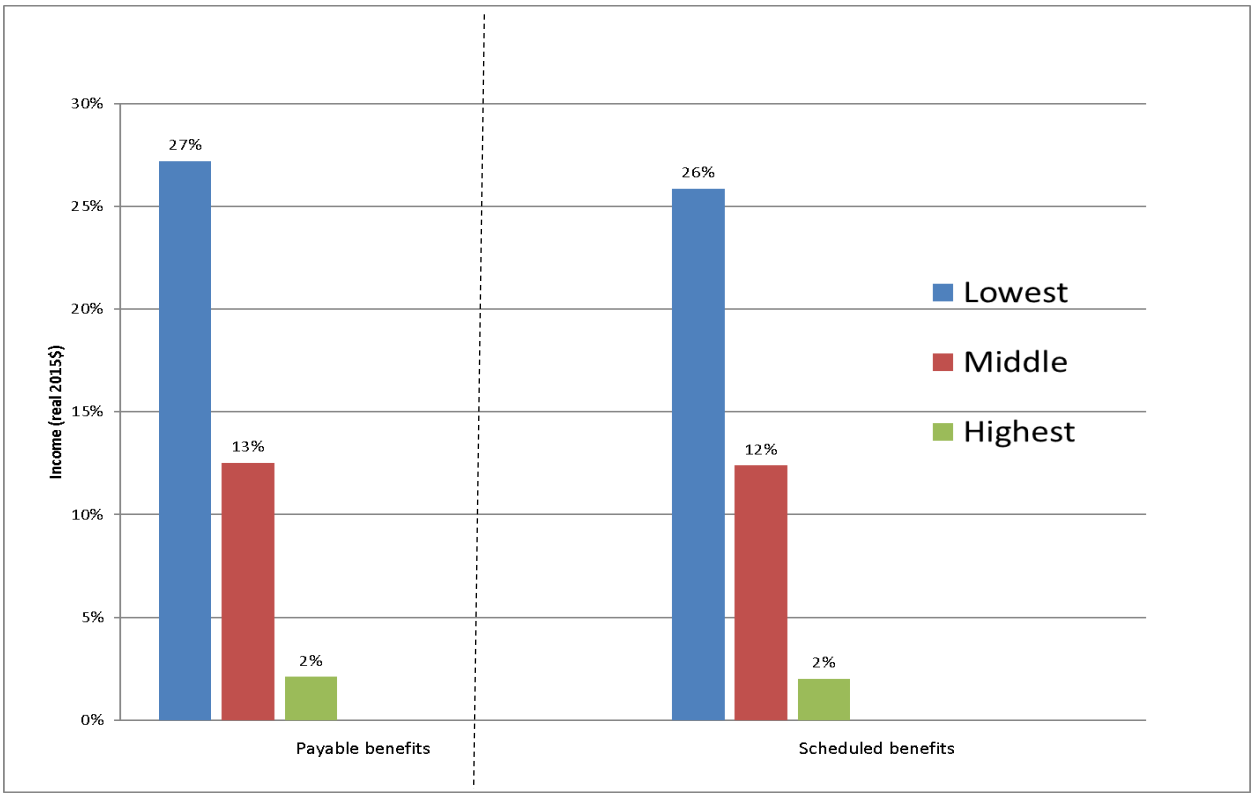


D. By education:



Note: Derived from data supplied in Smith (2017b).

Figure 4. % Change in Average Assets of People Age 62+ by Income Quintile: 2065
Payable (on left) and Scheduled (on right)



Note: Derived from data supplied in Smith (2017b).