

## Individual Equity and Social Adequacy

### A Principle-Based Study of Social Security Reform Proposals

MARCH 2021

#### Key Points

- This study measures Individual Equity and Social Adequacy of Social Security benefits for certain birth and retirement age cohorts under current law and certain reform proposals.
- Individual Equity was measured by the ratio of the expected value of future benefits at commencement over the accumulated value of payroll taxes. This ratio is 0.9 or less for 50% of the 1975 birth cohort under current law. Median Individual Equity ratios under the proposals range from 1.0 to 1.2.
- Social Adequacy was measured by comparing benefits to various benchmarks. For the same cohort, benefits are less than the Federal Poverty Guidelines for 10% of future retirees under current law. All benefits exceed the Federal Poverty Guidelines under the proposals.

#### Purpose of Issue Brief

This issue brief reports the results of a project done by the Social Security Committee of the American Academy of Actuaries. For further information regarding social adequacy and individual equity and the measurements used in the illustrations, please refer to the monograph. The study compares three proposals for reforming the program using two important principles underlying Social Security:

- **Individual Equity**—basing a covered worker's benefit on the accumulated value of the worker's contributions.
- **Social Adequacy**—basing a covered worker's benefit on their deemed financial need.

The committee only considered proposals that were developed during the past five years and which were designed to eliminate the program's deficit, as projected by the Social Security trustees over the 75-year projection period and beyond. The three proposals selected for this analysis were:

- The Bipartisan Policy Center Commission on Retirement Security and Personal Savings, October 2016.<sup>1</sup>
- Former U.S. Rep. Sam Johnson, (TX) (then-chair of the House Social Security Subcommittee), H. R. 6489, December 2016.<sup>2</sup>
- U.S. Rep. John Larson (CT), (current chair of House Social Security Subcommittee), and U.S. Sens. Richard Blumenthal (CT) and Chris Van Hollen (MD), January 2019.<sup>3</sup>



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1850 M Street NW, Suite 300

Washington, DC 20036

202-223-8196 | [www.actuary.org](http://www.actuary.org)

Craig Hanna, Director of Public Policy  
Linda K. Stone, Senior Pension Fellow

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<sup>1</sup> [Securing Our Financial Future: Report of the Commission on Retirement Security and Personal Savings](#); Bipartisan Policy Center; June 2016.

<sup>2</sup> [H.R.6489—Social Security Reform Act of 2016](#).

<sup>3</sup> [The Social Security 2100 Act](#).

## Measuring Individual Equity

Individual equity is measured for purposes of the illustrations by comparing the value at various benefit commencement ages of the discounted expected value of representative workers' retirement benefits to the accumulated value of their payroll taxes deemed to fund these benefits. The illustrations only include worker old-age retirement benefits and exclude spouse, survivor, and disability benefits.<sup>4</sup>

- The ratio described above provides a scale for comparing current law to the three proposals. A ratio greater than one means that the value of expected benefit payments to an individual exceeds the value of the accumulated payroll taxes paid by the individual and their employer.
- The Social Security benefit formula is structured so that workers with lower wages receive proportionately greater benefits relative to taxes paid on their behalf and will have a ratio greater than one.
- Conversely, workers with higher wages receive proportionately lesser benefits relative to taxes paid on their behalf and will have a ratio less than one.

Figure 1 illustrates this measurement of individual equity for Social Security under current law for a cohort of future Social Security beneficiaries born in 1975 and projected to retire at age 67 in 2042. The values in the graph are provided for the 10 deciles<sup>5</sup> of Average Indexed Monthly Earnings (AIMEs).<sup>6</sup> Table 1 shows the 10 deciles of annualized AIMEs for 2020 and is intended to help the reader relate the AIME percentiles to earnings amounts.

**Table 1**

AIME Percentile	2020 Annualized AIME
10%	\$12,373
20%	\$20,729
30%	\$29,933
40%	\$39,577
50%	\$49,782
60%	\$60,669
70%	\$72,906
80%	\$87,585
90%	\$107,146
100%	\$124,645

<sup>4</sup> Because this analysis only includes worker retirement benefits (not survivor and disability benefits), only 86.8% of employer and employee payroll taxes paid to the Old-Age and Survivors Insurance (OASI) Trust Fund that cover those benefits were included. Benefit amounts are prior to reduction for any income taxes payable under current law or the proposals. More details regarding this issue can be found in the monograph.

<sup>5</sup> Deciles are the 10 groupings of retirees in a given year sorted by AIME, from the 1<sup>st</sup> decile, which includes the 10% with the lowest AIMEs, up to the 10<sup>th</sup> decile, which includes the 10% with the highest AIMEs.

<sup>6</sup> At retirement, an individual's earnings are first limited to the taxable wage base for the year, then updated to reflect wage inflation (as of the year of attainment of age 60) and averaged over the highest 35 years. Dividing by 12 gives the monthly average referred to as "AIME."

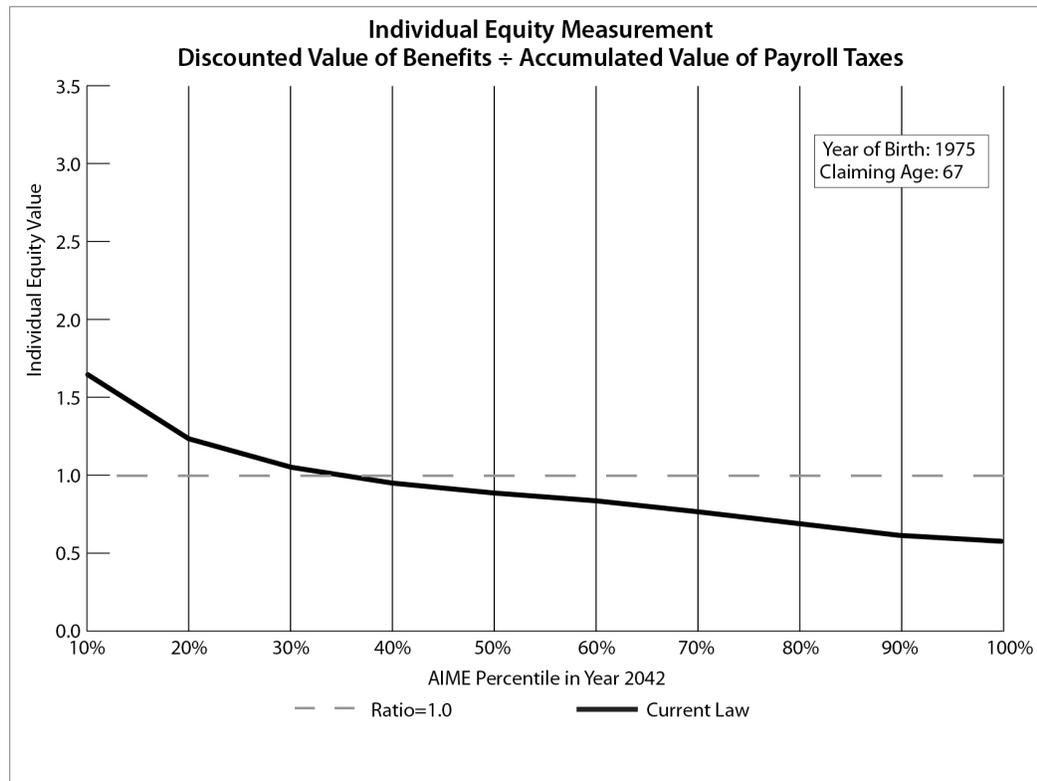
Members of the Social Security Committee, which drafted this issue brief, include Amy Kemp, MAAA, ASA, EA—*Chairperson*; Janet Barr, MAAA, ASA; Katie Brown, MAAA, FCA, EA; Gordon Enderle, MAAA, FSA; Margot Kaplan, MAAA, ASA, FCA; Eric Klieber, MAAA, FSA; Alexander Landsman, MAAA, FSA, EA; Leslie Lohmann, MAAA, FSA, FCA, FCIA, EA; Gerard Mingione, MAAA, FSA, EA; and Brian Murphy, MAAA, FSA, FCA, EA.

The committee extends special thanks to former committee members John Nylander, MAAA, FSA and Jeffery Rykhus, MAAA, FSA.

The assumptions used in the analysis are based on the intermediate cost assumptions shown in the 2020 Old-Age, Survivors and Disability Insurance (OASDI) Trustees Report.

*The graphs below include current law benefits reduced by 24% beginning in 2034, the year in which the Old-Age and Survivors Insurance (OASI) Trust Fund asset reserves are projected to be depleted. Because assumptions in the 2020 Trustees Report do not take into account any possible effects of the COVID 19 pandemic, neither does the study at this time.*

Figure 1



Some items to note from the above graph are as follows:

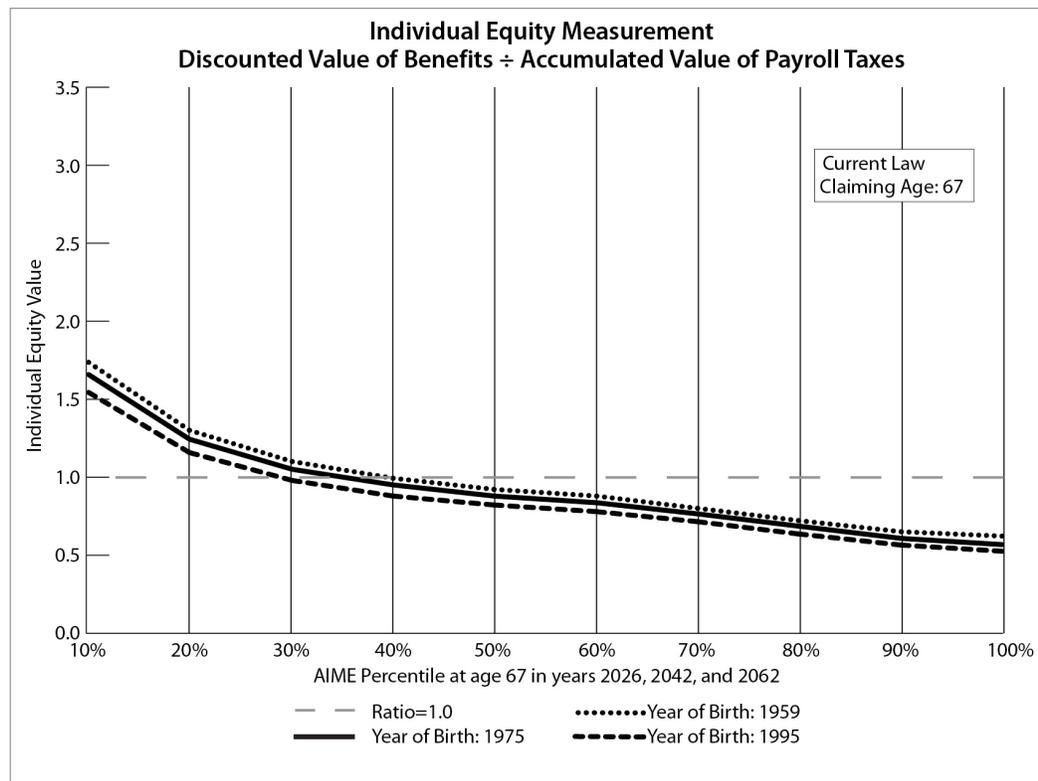
- The ratio is approximately 0.9 at the 50<sup>th</sup> percentile. This result means that the value of projected lifetime benefits exceeds 90% of accumulated payroll taxes for the lower-earning 50% of projected 2042 retirees.
- Comparing the ratios of 1.6 at the 10<sup>th</sup> percentile to 1.0 at the 35<sup>th</sup> percentile and 0.6 at the 100<sup>th</sup> percentile gives an indication of the degree to which higher-income workers are subsidizing the benefits of lower-income workers.
- The fact that under the study more than 50% of retirees in this cohort receive expected benefits that are less than their accumulated payroll taxes is a consequence of the 24% across-the-board cut in benefits beginning in 2034 under current law.

- Low-income beneficiaries have higher mortality rates than high-income beneficiaries. Using mortality tables that reflect this difference would lower the individual equity ratios for lower-income workers and increase the individual equity ratios for higher-income workers.

Individual equity ratios under current law will decrease as time passes because there is no provision to pay out more in benefits than taxes paid into the Social Security trust fund. So, to the extent that previous cohorts of retirees received more than they contributed, future cohorts will receive less.

- For a cohort of beneficiaries born in 1959 and retiring at age 67 in 2026, the benefits they receive prior to 2034 are fully paid, and the ratio remains above one up to the 40<sup>th</sup> percentile. For cohorts born in 1975 and 1995 and retiring at age 67 in 2042 and 2062, respectively, all retirement benefits are paid *after* 2034 at the reduced level, and the ratio remains above one only up to the 35<sup>th</sup> and 30<sup>th</sup> percentiles, respectively.
- Figure 2 below graphs individual equity ratios under current law for the 1959, 1975, and 1995 birth cohorts.

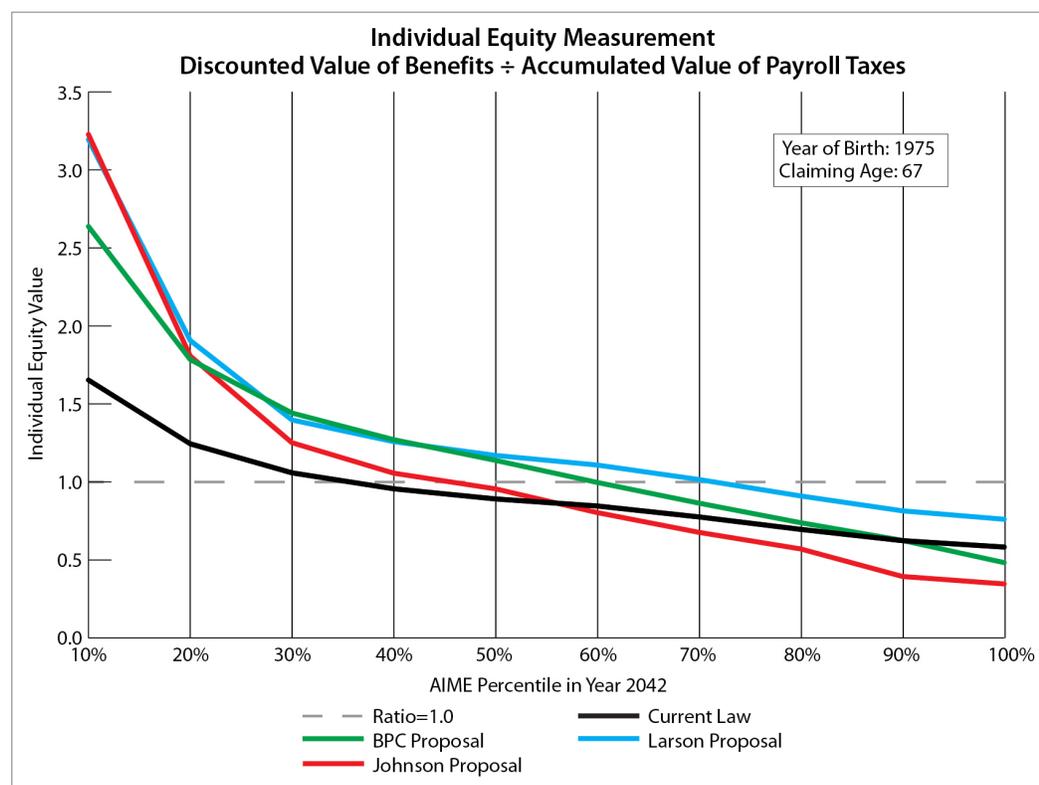
Figure 2



## Measuring Individual Equity for Three Reform Proposals

The committee intentionally selected proposals from stakeholders of different ideological perspectives for the project. All three proposals would fully fund their promised benefits over a 75-year valuation period and beyond, eliminating the need for the across-the-board reduction in benefits assumed in the current law illustrations. Each proposal would eliminate the trust fund deficit in a different way. The graph below compares the individual equity measurement for the three proposals to current law for a cohort of Social Security beneficiaries born in 1975 and retiring at age 67 in 2042. The vertical lines indicate deciles of AIMEs as in the previous graphs. A high-level summary of the provisions of each proposal can be found in an appendix to this issue brief.

Figure 3



## The Bipartisan Policy Center (BPC) Commission on Retirement Security and Personal Savings Proposal

This proposal addresses the deficit by a combination of reductions in benefits and increases in both payroll taxes and other types of income. The principal provisions that address the trust fund deficit are an increase in the payroll tax, an increase in the age at which full benefits are paid, and a change in the way the annual cost-of-living increases are calculated. There would also be benefit increases for lower- and middle-wage workers.

The green line in Figure 3 shows individual equity measurements for the Bipartisan Policy Center proposal. Some items to note are as follows:

- The ratio is above one at and below the 60<sup>th</sup> percentile, compared to the 35<sup>th</sup> percentile under current law.
- The ratios are higher than under current law up to the 90<sup>th</sup> percentile.
- Retirees have ratios around 2.7 at the lowest income levels.
- At the highest level of earnings, ratios are about 0.5.
- The higher payroll tax rate and increase in the taxable maximum would result in an increase in accumulated payroll taxes over current law of about 4% (significantly higher for those earning more than the taxable maximum under current law) for the cohort shown. Most of the increased taxes under the proposal would be paid by workers who retire after 2042 and continue paying taxes while the 2042 retirement cohort is receiving benefits.
- The age at which full benefits would be paid under the BPC proposal is age 67 and 7 months for individuals born in 1975, compared to age 67 for current law. This means that the BPC proposal benefits have been reduced for early retirement, but the current law benefits are not reduced.

## Former Rep. Johnson's Proposal

This proposal addresses the trust fund deficit without raising taxes by increasing the age at which full benefits are paid and reducing benefits for future medium to high-paid beneficiaries. The principal provisions that address the deficit are the increase in the age at which full benefits are paid, the reduction in benefits for the upper 55% of workers, and a change in the way the annual cost-of-living increases are calculated. The proposal also increases benefits for low-income beneficiaries. There are no provisions to increase payroll taxes, the taxable wage base, or other sources of income.

The red line in Figure 3 shows individual equity measurements for the Johnson proposal. Some items to note from the above graph are as follows:

- The ratio is above one at and below the 45<sup>th</sup> percentile, compared to being above one at and below the 35<sup>th</sup> percentile for current law.
- The ratios are higher than under current law below the 55<sup>th</sup> percentile.
- Retirees have ratios around 3.2 at the lowest income levels.
- At the highest level of earnings, ratios are about 0.3. The red line flattens out at the 90<sup>th</sup> percentile because we have assumed that these retirees will earn total income above the level which disqualifies them for COLAs under this proposal.
- The age at which full benefits would be paid under the Johnson proposal is age 69 for individuals born in 1975, compared to age 67 under current law. This means that the Johnson proposal benefits have been reduced for early retirement to a greater degree than under the BPC proposal.

## Proposal from Rep. Larson, Sens. Blumenthal and Van Hollen

This proposal addresses the trust fund deficit entirely with increases in payroll taxes and other types of income. The principal provisions that address the deficit are the increase in the payroll tax and a change in the maximum amount of wages subject to the payroll tax. There are no provisions to decrease benefits. There are modest benefit increases for most beneficiaries, and more significant increases for lower-income beneficiaries.

The blue line in Figure 3 shows individual equity measurements for the Larson proposal. Some items to note are as follows:

- The ratio is above one at or below the 70<sup>th</sup> percentile compared to being above one at or below the 35<sup>th</sup> percentile for current law.
- The ratios are higher than under current law at all income levels.
- Retirees have ratios around 3.2 at the lowest income levels.
- At the highest level of earnings, ratios are about 0.75.
- The higher payroll tax rate and increase in the taxable maximum would result in an increase in accumulated payroll taxes over current law of about 5% (significantly higher for those earning more than the taxable maximum under current law) for the cohort shown. As with the BPC proposal, most of the increased taxes will be paid by later retirees.
- The age at which full benefits would be paid for the Larson proposal is the same as current law, age 67, for an individual born in 1975.

## Measuring Social Adequacy

The next three sections of this issue brief discuss how social adequacy is measured and provide graphs that compare each proposal to current law based on the principle of social adequacy. Social adequacy is measured for purposes of the illustrations by comparing the Social Security benefit amount calculated at benefit commencement to three benchmarks of income adequacy (converted to monthly amounts) as follows:

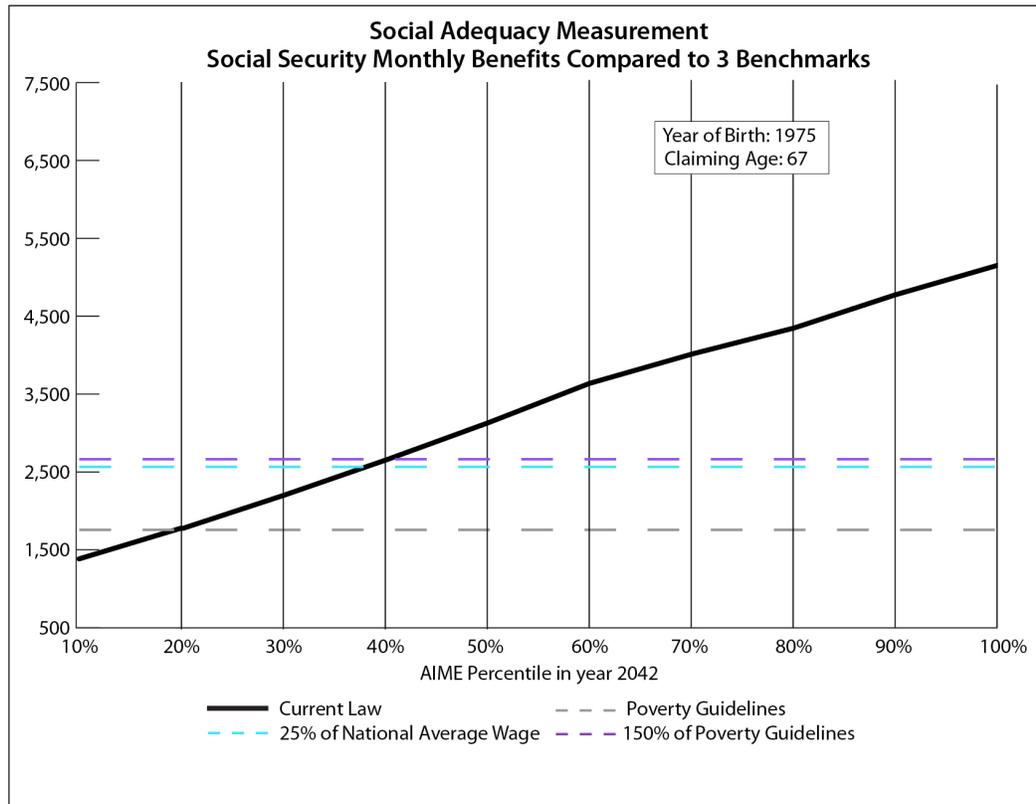
- The poverty guidelines for a one-person household for the 48 contiguous states and the District of Columbia, published by the U.S. Department of Health and Human Services,
- 150% of the poverty guidelines, and
- 25% of the national average wage (NAW) used for indexing earnings for Social Security.

One of the goals of Social Security is to provide beneficiaries with income in retirement to protect against financial hardship. In considering whether benefits are adequate, values above a given benchmark can only be considered adequate for purposes of that benchmark. The selected benchmarks provide an illustrative range. The poverty guidelines provide a low benchmark of benefit adequacy. To the extent that a higher

benchmark is the goal, values above either 150% of the poverty guidelines benchmark or above 25% of the NAW benchmark could be considered adequate. Wages have increased more rapidly than prices over time so that benefits above the benchmark based on 25% of national average wages would allow retirees to live closer to the standard of living of those still working. There is no generally recognized measure for benefit adequacy.

Figure 4 compares current law Social Security benefits at retirement to the three benchmarks discussed above for Social Security beneficiaries born in 1975 and projected to retire at age 67 in 2042. The vertical lines indicate deciles of AIMEs.

Figure 4



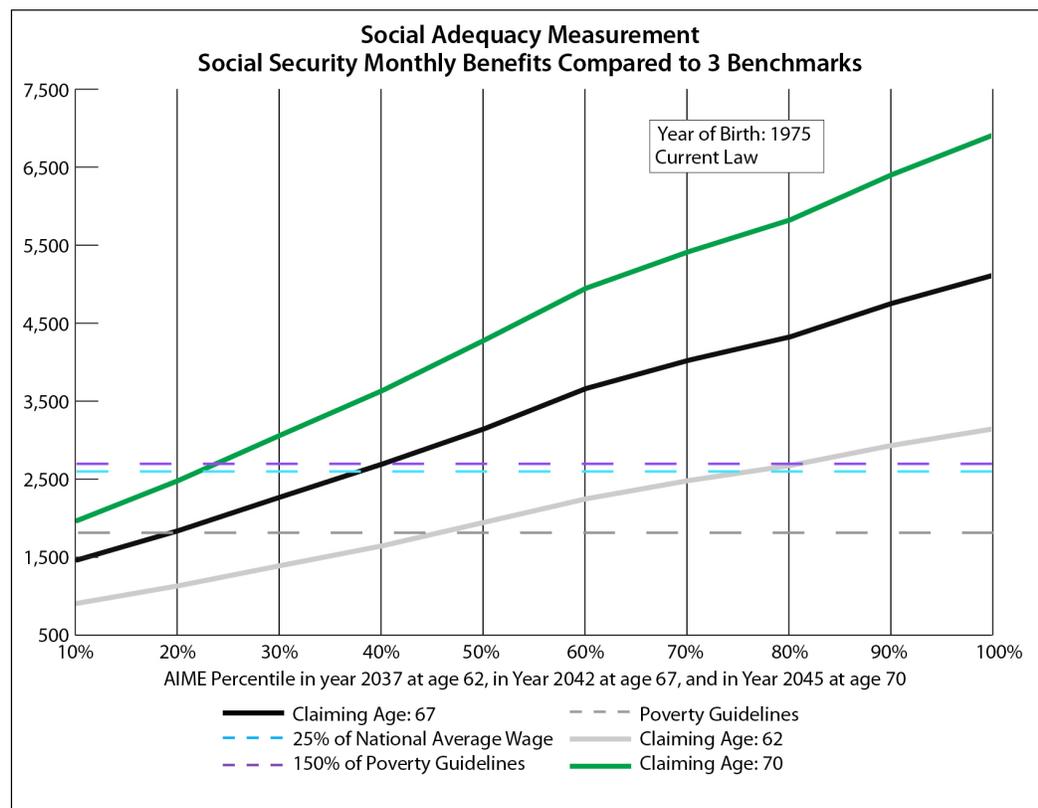
Some items to note from Figure 4 are as follows:

- Beneficiaries at about the 20<sup>th</sup> percentile and below have benefits that are less than the poverty guidelines. The individual equity ratio for the lowest-paid group was about 1.7, which may seem high until one considers that this value is still not adequate with respect to the poverty guidelines.
- Beneficiaries at the 40<sup>th</sup> percentile and above have benefits that exceed all three benchmarks.

## Measuring Social Adequacy at Early and Late Retirement Ages

Many lower-income beneficiaries retire at age 62, the earliest retirement age under Social Security for which benefits are payable. Social Security benefits beginning at age 62 are generally paid longer over beneficiaries' lifetimes but are reduced relative to a benefit beginning at the normal retirement age, the earliest retirement age at which unreduced benefits are paid. Higher-income beneficiaries are more likely to commence benefits at higher ages. Social Security benefits payable after age 67 under current law are increased 8% per year. Figure 5 shows the impact on the social adequacy measurement for current law of either retiring early at age 62 or delaying retirement to age 70.

Figure 5



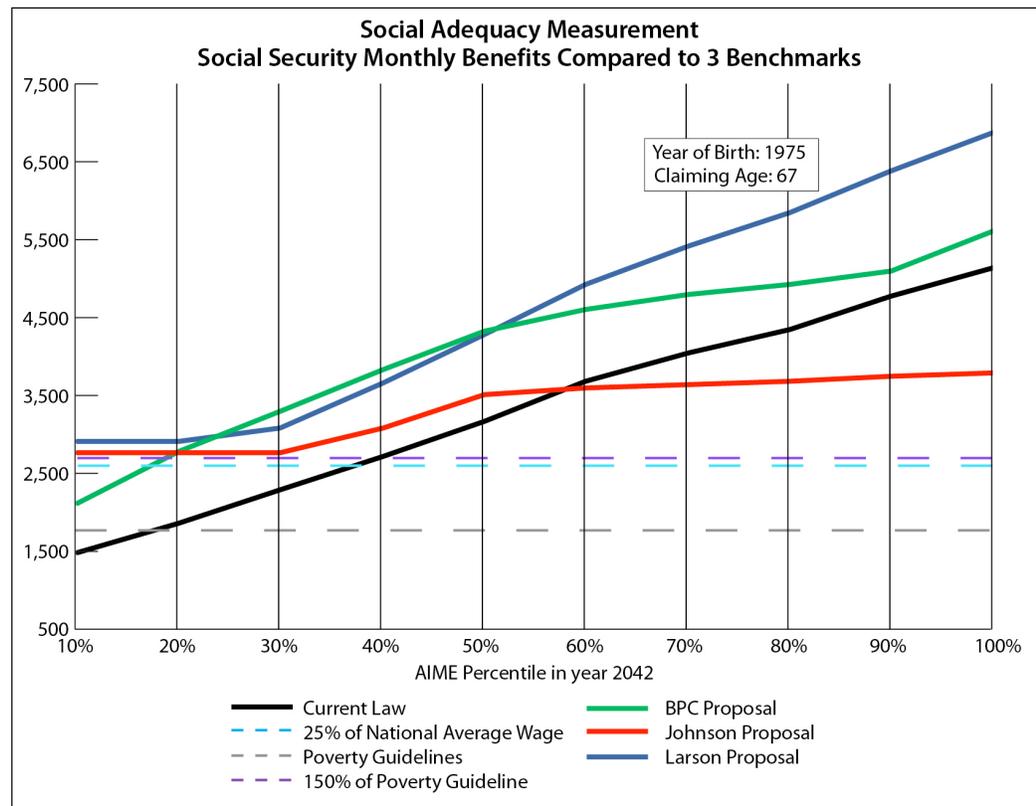
Some items to note from Figure 5 above are follows:

- Beneficiaries at the 45<sup>th</sup> percentile and below have benefits that are less than the poverty guidelines for those claiming benefits at age 62.
- Beneficiaries at the 80<sup>th</sup> percentile and above have benefits that exceed all three benchmarks for those claiming benefits at age 62.
- For those claiming benefits at age 70, benefits exceed the poverty guidelines for all income levels.
- For those claiming benefits at age 70, beneficiaries above the 25<sup>th</sup> percentile have benefits that exceed all three benchmarks.

## Measuring Social Adequacy for the Selected Reform Proposals

Figure 6 shows a social adequacy measurement for each proposal<sup>6</sup> versus current law for a cohort of Social Security beneficiaries born in 1975 and projected to retire at age 67. The vertical lines indicate deciles of Average Indexed Monthly Earnings (AIMEs).

Figure 6



## The Bipartisan Policy Center Commission on Retirement Security and Personal Savings Proposal

The green line in Figure 6 shows social adequacy for the BPC proposal. Some items to note are as follows:

- Benefits at every decile are greater than the poverty guidelines, compared to current law where beneficiaries at or below the 20<sup>th</sup> percentile are less than the poverty guidelines.
- Beneficiaries at the 20<sup>th</sup> percentile and above have benefits that exceed all three adequacy benchmarks. This compares to current law, where only beneficiaries at the 40<sup>th</sup> percentile and above have benefits that exceed all three poverty benchmarks.
- The BPC proposal would provide a minimum benefit for workers who have attained the age at which full retirement benefits are paid. It is greater than the proposed formula benefit for beneficiaries at or below the 30<sup>th</sup> percentile.

- Above the 50<sup>th</sup> percentile the slope of the green line is flatter than under current law, indicating the proposed formula replaces a smaller percentage of wages earned than under current law. The bend in the green line at the 90<sup>th</sup> decile reflects the provision in the BPC proposal that would raise the maximum wage subject to the payroll tax and includes a provision for an additional benefit based on those wages.

## Former Rep. Johnson's Proposal

The red line in Figure 6 shows social adequacy measurements for the Johnson proposal. Some items to note are as follows:

- All beneficiaries have benefits that exceed all three adequacy benchmarks under the proposal.
- The Johnson proposal would provide a fixed minimum benefit equal to 35% of the NAW that exceeds the proposed formula benefit for beneficiaries at or below the 30<sup>th</sup> percentile. The red line is flat where the minimum benefit is applicable.
- The bend at the 50<sup>th</sup> percentile under this proposal occurs because the proposed formula would replace only 5% of AIME above this level, compared to 27.5% of AIME just below this level.
- Above the 50<sup>th</sup> percentile, the slope of the red line is much flatter than under current law, indicating almost a flat benefit.
- The flat line below the 35<sup>th</sup> percentile and the almost-flat line above the 50<sup>th</sup> percentile mean that benefits are not closely related to wages (and taxes paid on those wages) in this proposal.
- Increasing benefits for low-wage earners combined with the absence of any tax increase means that while there would be greater social adequacy, there would be less individual equity at higher AIMEs.

## Proposal from Rep. Larson, and Sens. Blumenthal and Van Hollen

The blue line in Figure 6 shows social adequacy measurements for the Larson proposal. Some items to note are as follows:

- All beneficiaries would have adequate benefits with respect to all three adequacy benchmarks under this proposal.
- The minimum benefit under this proposal would be equal to 125% of the poverty guidelines for 2019, indexed in future years to NAW. It exceeds the proposed formula benefit for beneficiaries at or below the 20<sup>th</sup> percentile. It also grows to more than 150% of the poverty guidelines in 2042, because the rate of increase in the minimum benefit is more than the assumed rate of increase in the poverty guidelines (assumed price inflation is less than assumed wage inflation).

- Above the 30<sup>th</sup> percentile, the slope of the blue line is almost parallel with current law. This outcome is because the Larson formula is very similar to the current law formula and the increases in payroll tax under the proposal allow full benefits to be paid with no 24% reduction in benefits.

## Conclusion

The principles of individual equity and social adequacy help sustain public support for the system because they address the needs of both higher wage-earners and lower wage-earners. The system currently provides a trade-off between the principles of individual equity and social adequacy. The balance has changed as the system has evolved. There are no theoretically correct levels of individual equity and social adequacy in the U.S. Social Security system. The current mix is the product of many legislative compromises, which are incorporated into the current version of the Social Security Act.

Although policies which address Social Security should be considered in the context of other policies regarding retirement income that also impact individual equity and social adequacy, these issues are beyond the scope of this study.

A monograph that provides background and documentation for the study is available. The monograph contains three pages showing 18 graphs that provide a comprehensive view of the results of our study and side-by-side comparisons of social adequacy and individual equity for each of the scenarios shown.

While there are only three reform proposals analyzed for this project, the specific package of provisions within them are indicative of the types of proposals currently under discussion by public policy stakeholders. Changes to Social Security provisions can be varied and combined in a myriad of ways. Readers who want to explore other pathways toward reform are invited to play the American Academy of Actuaries’ [Social Security Game](#).

## Appendix: High-Level Summary of Analyzed Reform Proposals \*

Provision	BPC Proposal	Johnson Proposal	Larson Proposal
Social Security Primary Insurance Amount (PIA) Formula Bend Points or Percentages	Would change the benefit formula to replace a higher percentage of the first dollars of AIME and a smaller percentage of higher AIME values.	Would change the benefit formula to replace a higher percentage of the first dollars of AIME and a smaller percentage of higher AIME values.	Would change the benefit formula to replace a higher percentage of AIME at the low end, applicable to both current and future beneficiaries.
Application of Benefit Formula Annually**	Would eliminate the AIME calculation and calculate the benefit as the sum of each year’s benefit accrual updated for changes in the national average wage.	Would eliminate the AIME calculation and calculate the benefit as the sum of each year’s benefit accrual updated for changes in the national average wage.	No change.

Normal Retirement Age (NRA)	Would increase the NRA from the current age of 67 for those born in 1960 and later, to age 69 in increments of one month every two years.	Would increase the NRA from the current age of 67 to age 69 in increments of three months every year.	No change.
Cost-of-Living Adjustment (COLA)	Would adopt a different index for calculating COLAs on benefits, which is expected to lower annual benefit increases.	Would adopt a different index for calculating COLAs, which is expected to lower annual benefit increases. Would eliminate COLAs for certain high-income retirees.	Would adopt a different index for calculating COLAs, which is expected to raise annual benefit increases.
Minimum Benefit Formula	Would revise the minimum benefit for workers who have attained the NRA, the first age at which unreduced benefits are payable. The benefit would be an increase in the form of a flat dollar amount reduced \$0.70 for each dollar of the benefit derived from the regular formula.	Would revise the minimum benefit to equal 35% of NAW at age 60 for those with 35 or more years of covered work. For workers with between 10 and 35 years of coverage the 35% would be gradually reduced. Would provide a benefit increase effective 20 years after initial eligibility for certain low-income beneficiaries.	Would revise the minimum benefit to equal 125% of the annual poverty guidelines for a single person in 2019, reduced proportionately for those with less than 30 years of coverage (indexed in future years to the national average wage).
Income Taxes on Benefits **	Would increase income taxes on benefits for high-income beneficiaries.	Would reduce income taxes on benefits at first and then eliminates entirely.	Would raise the threshold at which income taxes are payable so that fewer beneficiaries pay income taxes on their benefits.
Spousal Benefits **	Would limit the spouse benefit to one-half the PIA for a hypothetical worker at the 75 <sup>th</sup> percentile.	Would limit the spouse benefit to one-half the PIA for a hypothetical worker whose earnings equal the national average wage in each year.	No change.
Maximum Wage Base for Taxes and Benefits	Provided for an increase in the maximum wage base in four steps over a four-year period so that covered earnings under Social Security include about 90% of all wages. For 2020, the taxable maximum wage would have been \$137,700.	No change.	Would apply the payroll tax to earnings above \$400,000. When the current law maximum wage base increases to \$400,000, then the payroll tax would be applied to all wages. Earnings above the current law maximum wage would be used to calculate an additional benefit.**
OASDI Payroll Tax Rates	Would gradually increase the payroll tax rate from a combined employer and employee rate of 12.4% to 13.4% in one-tenth of a percentage point increments per year.	No Change.	Would gradually increase the payroll tax rate from a combined employer and employee rate of 12.4% to 14.8% in one-tenth of a percentage point increments per year.

\* This table only includes provisions that had a significant impact in at least one of the analyzed reform proposals.

\*\*This provision was not modeled for purposes of the study. The monograph provides additional information on the limitations of the study.

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