

Social Security Benefits and Price Indexing: Analysis of Selected Policy Options

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Under current law, Social Security benefits are *indexed* in two ways. For workers, the value of past earnings used to calculate initial benefits is linked to changes in average wages in the economy. This *wage indexing* is designed to ensure stable replacement rates for successive birth cohorts in that the percentage of pre-retirement earnings replaced by Social Security benefits remains constant. For retirees, benefits are tied to changes in average prices in the economy (i.e.,

cost-of-living adjustments, or COLAs). This *price indexing* is designed to maintain the purchasing power of retired workers' benefits. Typically, wage growth has outpaced price growth. Because initial benefits are wage-indexed, their purchasing power generally increases for successive birth cohorts. Thus, although the replacement rate remains constant across birth cohorts, some argue that successive birth cohorts experience higher standards of living.

Higher initial benefits due to wage indexing contribute to increasing program costs. These increased costs impact Social Security's solvency and its ability to pay scheduled benefits. Under the Social Security Board of Trustees' most recent, best estimate for the future experience, the program will be unable to pay the full amounts of scheduled benefits in about 11 years (2035). The continuing imbalance between Social Security revenues and costs is largely driven by increasing costs relative to stable (flat) revenues. Since 2021, the program has relied on asset reserves held in the trust funds to help pay scheduled benefits and can continue to do so through 2035, the projected year of combined trust fund depletion. Once asset reserves are depleted, continuing tax revenues are projected to cover about three-fourths of scheduled benefits.

Congress has continued its focus on Social Security's solvency and its ability to pay scheduled benefits. For example, in the 118th Congress, the House Ways and Means Subcommittee on Social Security, House Budget Committee, and Senate Budget Committee held hearings to address Social Security's financing. During these hearings, Members focused some of their questions on the program's rising costs. Congress has a wide range of policy options to address these issues. Options are commonly divided into those that would increase revenues and those that would decrease costs, but many proposals include options from both categories. To support policymakers' consideration of such proposals, this report analyzes a specific suite of policy options—four selected proposals in which price indexing could replace wage indexing—that would reduce costs by slowing the growth in benefits under current law. In past policy discussions, for example, some argued against the current-law system that indexes initial benefits to wage growth and in favor of indexing initial benefits to price growth.

Specifically, this report evaluates how selected shifts from wage indexing to price indexing in the Social Security benefit formula, effective in 2035, would impact workers of different earnings levels and different birth cohorts (1960, 1985, and 2010). Assuming wage growth continues to outpace price growth, each price-indexing option would present reductions in scheduled benefits relative to current law and, in most cases, would lead to a decrease in replacement rates. Initial benefits would still increase—in nominal terms—for successive birth cohorts *but* at a smaller projected rate than under current law. This analysis also shows that changes to the current-law benefit formula would affect workers of varying earnings levels and birth cohorts differently. Because of the benefit formula's progressivity, low-earning workers would generally face larger decreases in replacement rates from adopting price indexing options than other workers would.

The introduction of price indexing would reduce Social Security benefits relative to benefits scheduled under current law. Some of these reductions (e.g., indexing earnings histories to prices) would be smaller relative to others (e.g., indexing replacement factors to prices). However small the reductions may be, their cumulative effect could be substantial, as the benefit reductions and cost savings would compound over time. Also, some methods of price indexing may result in increasing benefit reductions over time even as the Social Security program's financial status would be improving.

SUMMARY

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Introduction

Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI), commonly referred to on a combined basis as OASDI or Social Security, are social insurance programs that protect insured workers and their family members against the loss of income due to old age, disability, or death. Most Social Security beneficiaries are retired or disabled workers whose monthly benefits depend on their past earnings, their age, and other factors. Benefits are also paid to workers' dependents and survivors based on the earnings of the insured workers.

In May 2023, there were approximately 66.7 million Social Security beneficiaries collecting an average monthly benefit of \$1,699.¹ In May 2024, there were approximately 67.8 million Social Security beneficiaries collecting an average monthly benefit of \$1,778.² The number of beneficiaries is expected to increase as more workers reach eligibility ages for Social Security benefits. Monthly benefits are expected to increase as well. Initial benefits for workers, if they retire, are largely based on past earnings indexed for wage growth in the economy. *Wage indexing* of initial benefits is intended to replace a percentage of a worker's pre-retirement earnings. Benefits for retirees and their dependents and survivors are adjusted automatically for changes in the cost of living. *Price indexing* is intended to maintain benefits' purchasing power over time. The combination of an increasing number of beneficiaries and increasing benefit amounts results in rising program costs, which, relative to program revenues, contribute to an ongoing and projected financial imbalance for the Social Security program.

The Social Security program's rising costs have received significant recent interest from lawmakers.³ For instance, in the 118th Congress, Members discussed the ability of the Social Security program to pay full scheduled benefits at hearings held by the House Ways and Means Subcommittee on Social Security (April 26, 2023, and June 4, 2024); House Budget Committee (June 13, 2024); and Senate Budget Committee (July 12, 2023). Social Security has a significant impact on beneficiaries, both young and old, in terms of income support and poverty reduction.⁴ However, under current law, Social Security's revenues are projected to be insufficient to pay full scheduled benefits after 2034.⁵ Because of the program's size (i.e., the number of current and

¹ Program data cited here and in the following sentence come from Social Security Administration (SSA), "Monthly Statistical Snapshots," available at https://www.ssa.gov/policy/docs/quickfacts/stat_snapshot/2024-05.html.

² Retired-worker and disabled-worker beneficiaries accounted for 85.9% of the beneficiary population. The largest single category of beneficiaries was retired workers (75.2%), with an average monthly benefit of \$1,917. The second-largest category was disabled workers (10.7%), with an average monthly benefit of \$1,538. Family members of retired, disabled, or deceased workers accounted for the remainder of the beneficiary population (14.2%).

³ Written testimonies, Member questions, and Questions for the Record (see https://www.cbo.gov/system/files/2024-07/60478-Social-Security.pdf) cite the program's ongoing and projected financial imbalance, including rising costs.

⁴ Research suggests that Social Security benefits accounted for most of the decline in poverty among the aged population from 1967 through 2000. For more information, see CRS Report R45791, *Poverty Among the Population Aged 65 and Older*.

⁵ The Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, 2024 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, May 6, 2024, https://www.ssa.gov/OACT/TR/2024/tr2024.pdf (hereinafter cited as 2024 Annual Report). Under current law, the OASI and DI trust funds are distinct entities and cannot borrow from each other when faced with a funding shortfall. The shifting of funds between the OASI and DI trust funds can be done only with authorization from Congress. In the past, Congress has authorized temporary interfund borrowing among the OASI, DI, and Medicare Hospital Insurance trust funds, as well as temporary payroll tax reallocations between OASI and DI, to deal with funding shortfalls. Because of such actions, the OASI and DI trust funds are discussed on a combined basis. Separately, the OASI fund is projected to have asset reserves until 2033, at which point continuing income to the fund would be sufficient to pay 79% of OASI scheduled benefits. The DI fund is projected to have asset reserves throughout (continued...)

future beneficiaries) and projected long-term financial imbalance, there has been congressional interest in making changes to the program to improve Social Security's finances and to ensure that scheduled benefits are paid in full.⁶ Congress has a wide range of policy options that can address the program's financial imbalance. These policy options either increase revenues or reduce costs. Some reform proposals include options from both categories.

The analysis presented in this report focuses on a specific group of policy options that would reduce costs. It evaluates how selected changes from wage indexing to price indexing in the Social Security benefit formula, effective in 2035, would impact workers of different earnings levels and different birth cohorts (1960, 1985, and 2010). In support of this analysis, this report first provides:

- a synthesis of changes to Social Security benefit indexing over time (see **Appendix** for more detailed information on this legislative history);
- background information on wage and price growth, including implications for the indexing of Social Security benefits;
- a discussion of rising program costs and Social Security's financial outlook; and
- an explanation of how Social Security benefits are computed under current law.

In general, changes that include more price indexing (instead of wage indexing) in the initial benefit calculation would decrease initial benefits, thereby resulting in increasing cost savings over time. This analysis also shows that changes to the current-law benefit formula would affect workers of various earnings levels and birth cohorts differently. This analysis finds that any switch to price indexing would result in lower monthly benefits than scheduled under current law. Additionally, in terms of decreases in benefit replacement rates—the level of pre-retirement income replaced by benefits—the effects of price indexing would be larger for relatively low-earners.

Following the analysis, this report also provides a discussion of selected policy considerations related to Social Security price-indexing proposals, including:

- the implications of projected wage and price growth for Social Security benefits,
- "notch effects" and transition periods related to the four proposals analyzed in this report,
- the effects on low earners of price-indexing options,
- growth rates of initial benefit amounts under current law and price indexing, and
- scheduled and payable Social Security benefits.

Changes to Social Security Benefit Indexing Over Time

This section provides a brief summary of how the Social Security benefit computation has changed over time, with an emphasis on how the computation has been changed through indexing. The Social Security Act, enacted in 1935, scheduled the first payments for retired workers to begin in 1942. Before the first payments began, Congress changed the computation formula. Changes to the computation formula continued through 1977, when Congress

the 75-year projection period (2024 Annual Report, p. 6). The 2024 intermediate assumptions reflect the trustees' understanding of the status of the Social Security trust funds at the start of 2024.

⁶ For example, in the 118th Congress, see the Social Security 2100 Act (H.R. 4583 and S. 2280) or the Social Security Expansion Act (H.R. 1046 and S. 393).

established the current-law benefit formula. A detailed history of these changes, and alternative proposals, is presented in the **Appendix**.

Under the Social Security Act as first enacted, the original benefit formula based a retired worker's benefits on total cumulative wages from covered employment. Consequently, this method favored workers with longer earnings histories. For instance, two workers with the same levels of annual earnings in each year would receive different benefit amounts if their total durations of covered work were different. Before payments began, Congress changed the benefit formula in 1939 to one that based a retired worker's benefit on average monthly wages.

Under the 1939 alterations, workers with the same average monthly wages received the same basic monthly benefit regardless of the respective durations of covered work. In use from 1940⁷ through 1977, this method employed replacement factors for specific brackets of average monthly earnings and produced a benefit amount that retired workers could expect for the rest of their lives. This bracket-based calculation required congressional action to make any change to benefit levels. Each time Congress wanted to increase benefits to better track economic growth in wages and prices, it had to add brackets of average monthly wages and/or increasing replacement factors. In addition to requiring frequent ad hoc legislation, benefit levels would become degraded during periods of higher-than-expected wage or price growth (i.e., relative to what Congress had most recently set in law).

The Social Security Amendments of 1972 indexed Social Security benefits for the first time. Among other provisions, the amendments provided for automatic cost-of-living adjustments (COLAs) to be applied to benefits when the Consumer Price Index (CPI)⁸ rose by more than 3.0%. Although a worker's earnings used in benefit calculation would remain unindexed, the amendments included a provision that automatically increased the number of average monthly wage brackets when COLAs were paid. Additionally, the amendments also required an increase in the *taxable maximum* of earnings subject to the Social Security tax if average wages increased.⁹ An increase in the taxable maximum amount would trigger increases in the replacement factors in the formula for calculating initial benefits for new beneficiaries to be increased by the same percentage as the increase in the CPI. Thus, incorporating more wage brackets *and* increasing the replacement factors in the formula for calculating initial for calculating initial benefits overcompensated workers (by twice factoring in inflation) and resulted in the *over-indexing* of benefits.¹⁰

In the mid-1970s, the projected solvency status of the program was faltering due to the overindexing created by the 1972 amendments and other factors.¹¹ Congress sought a new formula that automatically responded to changes in the national economy (i.e., an *indexed* benefit formula). Under the existing formula, an unindexed average of retired workers' earnings could

⁷ Under the original Social Security Act, payments were scheduled to begin in 1942. The Social Security Act Amendments of 1939 set benefits to begin in 1940.

⁸ The CPI is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. See Bureau of Labor Statistics, "Consumer Price Index," https://www.bls.gov/cpi/.

⁹ The Social Security payroll tax is applied to covered earnings up to an annual limit, or taxable maximum. This level of earnings is both the contribution base (i.e., amount of covered earnings subject to the Social Security payroll tax) and the benefit base (i.e., amount of covered earnings used to determine benefits). Earnings in excess of the taxable maximum are not subject to the Social Security payroll tax and are not factored into benefit calculations.

¹⁰ Since program changes in the 1970s, the term *over-indexing* has been used to describe other issues. For instance, in 1996 the Boskin Commission used the term to describe the CPI as "overstating the change in the true cost of living." (See the Boskin Commission Report at https://www.ssa.gov/history/reports/boskinrpt.html.)

¹¹ Other factors included high unemployment reducing payroll tax receipts, higher benefit expenditures because of high inflation triggering higher COLAs, and lower wage growth.

have little relationship to their standard of living prior to retirement.¹² Numerous congressional committees, advisory councils, and panels examined which indexing measure would be most appropriate. At the time, discussion focused on two options: price indexing and wage indexing.

Indexing by prices expresses each prior year's wage in terms of the quantity of goods and services it could now purchase.... Indexing by wages expresses each prior year's wage in terms of what that wage would be if the worker were employed in a similar job today.... Roughly speaking, price indexing replaced a standard of living that is measured in absolute terms, while wage indexing replaces a standard of living in relative terms.¹³

Price indexing would ensure that benefits would rise from one cohort to the next in line with price growth (i.e., in absolute terms).¹⁴ This would essentially keep benefits fixed at the level of purchasing power provided to beneficiaries at the time price indexing would have been enacted: "future retirees would be guaranteed to receive the same inflation-adjusted benefits as more recent retirees who had the same lifetime real wages."¹⁵ Price indexing would also result in decreasing replacement rates: Because wages generally grow faster than prices do, the percentage of pre-retirement earnings replaced by benefits would decrease over time.

Wage indexing presented a different outcome, one that would result in stable replacement rates. Thus, wage indexing would ensure that "the standard of living of retirees kept pace over time with the rising standard of living or workers."¹⁶ Because wage growth typically outpaces price growth, a wage-indexing approach would also result in increasing purchasing power of benefits over time. Ultimately, Congress chose the wage-indexing method.¹⁷

The current-law benefit formula was enacted as part of the Social Security Amendments of 1977. Under the amendments, Social Security benefits became indexed in two ways. First, initial benefits for workers, if they retire, would be largely based on changes in average wages in the economy. Wage indexing of initial benefits is intended to replace a constant percentage of a worker's pre-retirement earnings (e.g., career-average medium earners can expect the same replacement rate regardless of birth year). Thus, initial benefits generally grow at the same rate as wage growth in the economy. Second, benefits for beneficiaries are adjusted automatically for changes in the cost of living. Price indexing is intended to maintain a beneficiary's purchasing power over time. This new method de-coupled the effects of wage and price growth.

Wage and Price Growth: Relevance for Social Security Indexing

Historically, wage growth has outpaced price growth in most years. However, this was not always the case during the period from 1965 to 1982, commonly referred to as the "Great Inflation," when wage growth was sometimes overwhelmed by increases in consumer prices.¹⁸ Figure 1

¹² Lawrence H. Thompson, Paul N. Van de Water, and Jane L. Ross, *Wage Averaging Rules and the Distribution of Social Security Benefits*, Department of Health, Education, and Welfare, Office of Income Security Policy, March 25, 1976, p. 14, https://www.ssa.gov/policy/docs/research/wage_avg_rules.pdf.

¹³ Thompson Van de Water, and Ross, *Wage Averaging Rules*, pp. 14-16.

¹⁴ John F. Cogan and Daniel L. Heil, *Social Security Wage Indexing Revisited*, Hoover Institution, Economics Working Paper 23116, October 1, 2023, p. 11, https://www.hoover.org/research/social-security-wage-indexing-revisited.

¹⁵ Cogan and Heil, Social Security Wage Indexing Revisited, p. 11.

¹⁶ Cogan and Heil, Social Security Wage Indexing Revisited, p. 10.

¹⁷ The **Appendix** provides more detail on the legislative history described in this section. It also includes more recent information on commissions, councils, and panels that continued the discussion on the indexing issue.

¹⁸ For more information on this period, including a discussion of causes, see CRS In Focus IF12177, *Back to the Future? Lessons from the "Great Inflation"*. For more history of the Great Inflation period, see Michael Bryan, "The Great Inflation," Federal Reserve History, https://www.federalreservehistory.org/essays/great-inflation.

displays the difference in the annual percent change in nominal wages to annual percent change in the CPI since 1960. Since the end of the Great Inflation, wage growth has generally outpaced price growth. The 41-year period since—1983¹⁹ through 2023—generally saw inflation settle to lower levels. Over this period, average nominal wages grew at an average of 3.87% per year, whereas the CPI grew at an average of 2.80% per year (an average annual difference of 1.07 percentage points).²⁰ Thus, wage growth has outpaced price growth *on average*. In choosing the wage-indexing method for the calculation of initial Social Security benefits, Congress adopted stable replacement rates and benefits that grew from one birth cohort to the next in line with economy-wide average earnings. This method also determined the rate at which the program's projected costs would grow.



Figure 1. Difference of Annual Percentage Change in Average Nominal Wages and Annual Percentage Change in Consumer Price Index, 1960-2023

Source: CRS using 2024 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, May 6, 2024, Table V.BI, https://www.ssa.gov/OACT/TR/ 2024/tr2024.pdf and supplemental single-year table at https://www.ssa.gov/OACT/TR/2024/IrIndex.html.

Notes: Average nominal wages are defined as total wages and salaries paid in covered employment during the year divided by the number of workers who worked in covered employment at any time during the year. The consumer price index in this figure is the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

Rising Program Costs and Social Security's Financial Outlook

Since 2021, Social Security has operated with annual deficits where total costs have exceeded total revenues (i.e., tax revenues *plus* interest income). The Social Security Board of Trustees' intermediate assumptions—their best estimate of future experience—project annual deficits for

¹⁹ In 1983, the annual percentage change in the CPI was 2.99%, the first time it was calculated below 3% since 1966. See supplementary single-year Table V.B1 at https://www.ssa.gov/OACT/TR/2024/lrIndex.html. Also, 1983 is commonly acknowledged as the last time major Social Security reform was passed (Social Security Amendments of 1983, P.L. 98-21).

²⁰ For reference, the Great Inflation experienced average annual nominal wage growth of 7.0% and average annual growth in the CPI of 6.55% (an average annual difference of 0.45 percentage points).

the remainder of the 75-year projection period.²¹ Thus, since 2021 the program has redeemed reserve assets held in the combined trust funds to help pay full scheduled payments. The trustees project that the combined trust funds will become depleted in 2035.²² Since 2011, Social Security benefits have been about 99% of program costs.²³ The method of indexing benefits contributes significantly to the growth rate in program costs. The resulting rise in program costs, relative to program revenues, is contributing to the program's financial imbalance.

Depletion of the trust fund reserves means that the assets held would no longer exist and could no longer augment continuing income in the payment of scheduled benefits. At the time of projected trust fund depletion, the program's costs are expected to exceed its projected income. Thus, in 2035, the program is projected to have insufficient income to support the payment of full scheduled costs (i.e., scheduled benefits). Under their intermediate assumptions, the trustees project that program income will be sufficient to cover about 83% of scheduled benefits in 2035. This percentage of payable benefits would fall to 73% by 2098.²⁴

The projected depletion of the trust fund assets reflects an imbalance between the program's revenues and costs. In aggregate nominal dollars, the program's revenues are projected to grow as an increasing number of covered workers and increasing average wages contribute to an increasing amount of earnings subject to the payroll tax. Additionally, as average wages and benefits are projected to increase, an increasing number of future beneficiaries are projected to become subject to the federal income taxation on a portion of their benefits.²⁵ However, the increasing number of future beneficiaries (due largely to the retirement of the baby boom generation) and their accompanying increasing benefits—as growth in benefits results from growth in wages (i.e., wage indexing)—are projected to result in higher program costs relative to revenues.

When expressed as a rate (percentage) of taxable payroll, the program's cost rates are projected to increase relative to the program's income (revenue) rate.²⁶ The historical and projected cost rates are influenced largely by the age distribution of the Social Security population and benefit levels. As the trustees state, "The cost rate is essentially the product of the number of beneficiaries and their average benefit, divided by the product of the number of covered workers and their average taxable earnings."²⁷ The growth in average benefits over time has resulted in increased costs and, among other factors, is contributing to an increase in projected costs.

Congress has demonstrated a long-standing interest in the imbalance between Social Security's revenues and costs. The program's need to provide an adequate level of benefits and balance the

²¹ For more information on sources of income and interest, see CRS In Focus IF12248, *Social Security: The Trust Funds and Interest Income*.

²² 2024 Annual Report, p. 3.

²³ This trend is projected to continue under the trustees' intermediate assumptions. See 2024 Annual Report, Table IV.A3, pp. 50-51, and supplemental tables at https://www.ssa.gov/OACT/ProgData/funds.html. Since 1983—the year of the last major reform to the program—benefits as a percentage of cost have ranged from 97% to 99%. Benefits have been 99% of costs since 2011.

²⁴ 2024 Annual Report, p. 14.

²⁵ The thresholds used to determine tax liability on Social Security benefits are fixed (i.e., not indexed). As average benefits increase, an increasing number of beneficiaries are expected to be affected by taxation of benefits. For more information, see CRS Report RL32552, *Social Security: Taxation of Benefits*.

²⁶ CRS Report R47650, *Social Security: Future Financial Status and Accuracy of Projections* provides an overview of taxable payroll, income rates, and cost rates.

²⁷ 2024 Annual Report, p. 66.

program's long-range revenues and costs were a focus of the Second Hsiao Panel in 1975,²⁸ the 1977 amendments,²⁹ the President's Commission to Strengthen Social Security in 2001,³⁰ and today.³¹ In each instance, policymakers focused on, among other things, the growth rate in benefits. In the 118th Congress, numerous hearings discussed the need to address the program's increasing costs and how they contributed to the financial imbalance.³² For instance, in a House Ways and Means Subcommittee on Social Security hearing, the growth in benefits under the current-law wage-indexed system was a focus of the chairman's questions.³³ Additional attention was paid to the "growth of inflation-adjusted Social Security benefits" in post-hearing questions.³⁴

Solvency Measures

Policy options that seek to improve the financial position of the Social Security program—to more closely align the program's costs with income—generally fall into two categories. *Revenue-increasing* measures improve the financial position by increasing money flowing *into* the program. For instance, eliminating the taxable maximum (i.e., the amount of earnings subject to the payroll tax) would subject more earnings to the payroll tax, thereby increasing revenues. *Cost-reducing* measures improve the financial position by decreasing the money flowing *out* of the program. For example, increasing the full retirement age would reduce costs as beneficiaries would, all things the same, collect benefits for a shorter duration or for the same duration at a lower level. The Social Security Amendments of 1983 (P.L. 98-21), commonly considered the last major reform to the Social Security program, extended the program's solvency by a combination of revenue-increasing and cost-reducing measures.³⁵

Social Security Benefit Formula Under Current Law

This section of the report provides a detailed framework for understanding how Social Security retired-worker benefits are computed under current law. The framework from this section, including tables and graphs, are then applied to selected price-indexing options to analyze their effects on benefits for workers of different earnings levels and ages. Thus, understanding current-law benefit computation will also present the plan of analysis for the selected price-indexing options.

The benefit computation process is the same for all workers. However, as highlighted throughout this report, a worker's earnings history and the indexing of certain factors creates differences in

²⁸ Congressional Research Service, *Report of the Consultant Panel on Social Security to the Congressional Research Service*, August 1976, p. iv, https://www.finance.senate.gov/imo/media/doc/report.pdf (hereinafter cited as Second Hsiao Panel).

²⁹ P.L. 95-216.

³⁰ Executive Order 13210, "President's Commission to Strengthen Social Security," 3 C.F.R. §13210, https://www.govinfo.gov/app/details/CFR-2002-title3-vol1/CFR-2002-title3-vol1-eo13210.

³¹ Summary information on these aspects of Social Security's legislative history is available in the **Appendix**.

³² For example, see U.S. Congress, Senate Budget Committee, *Protecting Social Security for All: Making the Wealthy Pay Their Fair Share*, 118th Cong., 1st sess., July 12, 2023; U.S. Congress, House Budget Committee, *Examining the Need for a Fiscal Commission Reviewing H.R. 710, H.R. 5779, and S. 3262*, 118th Cong., 2nd sess., January 18, 2024; and U.S. Congress, House Budget Committee, *Examining the Need for a Fiscal Commission Reviewing H.R. 710, H.R. 5779, and S. 3262*, 118th Cong., 2nd sess., June 13, 2024.

³³ U.S. Congress, House Ways and Means Committee, Subcommittee on Social Security, *The Social Security Trust Funds in 2024 and Beyond*, 118th Cong., 2nd sess., June 4, 2024, https://waysandmeans.house.gov/event/social-security-subcommittee-hearing-on-the-social-security-trust-funds-in-2024-and-beyond/.

³⁴ Phillip Swagel, *Answers to Questions for the Record Following a Hearing on Social Security's Finances*, Congressional Budget Office, July 10, 2024, https://www.cbo.gov/publication/60508.

³⁵ For more information on the Social Security Amendments of 1983 see CRS Report R47040, Social Security: Trust Fund Status in the Early 1980s and Today and the 1980s Greenspan Commission.

benefit amounts for workers of different earnings levels and birth cohorts (i.e., ages).³⁶ The computation process involves three main steps:

- 1. A summarized and wage-indexed measure of lifetime Social Security–covered earnings is computed. That measure is called the *average indexed monthly earnings* (AIME).
- 2. A progressive benefit formula is applied to the AIME to compute the *primary insurance amount* (PIA). The PIA is the basic monthly benefit before any adjustments.
- 3. The PIA may be adjusted. The two most common adjustments are for age at which benefits are claimed and COLAs.³⁷

Hypothetical Earners

This report examines the effects of selected changes in the benefit formula on a set of five hypothetical earners across birth cohorts. As defined by SSA, the categories of hypothetical earners have career earnings that range from *very low earnings* to *maximum earnings*. Hypothetical earners are used to illustrate how the benefit formula works and how changes to the benefit formula could affect workers of different earnings levels across three different birth cohorts: 1960, 1985, and 2010. These cohorts were selected to highlight how the effective date of policy options would affect workers of different ages. The 1960 birth cohort will reach full retirement age (FRA)—the age at which Social Security benefits can be collected without an adjustment for early retirement—in 2027 (at 67 years old).³⁸ The 1985 birth cohort will reach FRA in 2052. Thus, they could be considered to have worked about half of their expected time in the labor force as of 2035, when the hypothetical policy changes would take effect. The 2010 birth cohort, age 14 in 2024, has not yet entered the labor force and is the furthest from benefit collection. This cohort would work almost all of their expected years in the labor force under the hypothetical policy changes analyzed in this report.

The career earnings profiles for hypothetical earners are calculated using an age-specific, scaled factor developed by SSA's Office of the Chief Actuary (OCACT). The scaled factor conveys, for each age, individuals' average earnings as a share of SSA's Average Wage Index (AWI) in the year that the individual was that age.³⁹ This results in four hypothetical worker profiles reflecting career-average estimated earnings of 25% (*very low* hypothetical earners), 45% (*low* hypothetical earners), 100% (*medium* hypothetical earners), and 160% (*high* hypothetical earners) of the AWI. A fifth category of hypothetical earner (*maximum* hypothetical earner) is assumed to earn at least the taxable maximum (i.e., the maximum amount of earnings subject to the payroll tax) in each

³⁶ "Because different benefit formulas are applicable to cohorts of different years, there are not necessarily smooth junctions in the benefit structure between those with only slightly different dates of attainment of age 62 (or death or disability) but in different calendar years" (Robert J. Myers, "Basic Principles and Present Provisions of the OASDI System" in *Social Security*, 4th ed. [Philadelphia: University of Pennsylvania, 1993], p. 81,

https://pensionresearchcouncil.wharton.upenn.edu/wp-content/uploads/2019/05/Chapter-2-reduced-size.pdf).

³⁷ As discussed in a subsequent section "Step 3: Applying Adjustments," retired-worker benefits can be affected by other adjustments. Although not an adjustment, income tax may be owed on a portion of Social Security benefits.

³⁸ The FRA for individuals born in 1960 and later is 67 years old.

³⁹ OCACT, Scaled Factors for Hypothetical Earnings Examples Under the 2024 Trustees Report Assumptions, May 2024, Table 1, https://www.ssa.gov/OACT/NOTES/ran3/an2024-3.pdf.

year from age 21 to 64. Based on these SSA methods, hypothetical workers are assumed to have long and consistent earnings histories at their respective levels.⁴⁰

Hypothetical Earners and Scaled Wages

OCACT uses hypothetical earnings patterns to evaluate the program under current law and to illustrate how program changes may affect beneficiaries. OCACT publishes scaled factors for very low, low, medium, and high earners as a percentage of SSA's AWI. Throughout this report, examples of benefit calculations are shown for very low, low, medium, and high lifetime hypothetical earners as well as *maximum earners*. A maximum earner is a worker who has earnings at or above the contribution and benefit base (i.e., taxable maximum) during all years of earnings history. CRS Report R46658, *Social Security: Benefit Calculation* provides more background on hypothetical earners. The report's appendix—"Hypothetical Workers, Wages, and Indexed Wages"—provides distributional information (i.e., how actual workers are distributed relative to the hypothetical earners).

Step 1: Computing the Average Indexed Monthly Earnings (AIME)

Computing a worker's AIME is the first step in determining Social Security benefits. A worker's Social Security benefit is based on his or her earnings during covered employment, and the AIME is a computed measure that reflects a worker's past earnings.

Under current law, the Social Security payroll tax is applied to covered earnings up to an annual limit, or taxable maximum. The taxable maximum is indexed to national average wage growth for years in which a COLA is payable.⁴¹ Consequently, it generally increases year to year. In 2024, the taxable maximum is \$168,600 (increasing from \$160,200 in 2023). This level of earnings is both the contribution base (i.e., amount of covered earnings subject to the Social Security payroll tax) and the benefit base (i.e., amount of covered earnings used to determine benefits). Earnings in excess of the taxable maximum are not subject to the Social Security payroll tax and are not factored into benefit calculations. Only earnings from years of covered employment are included in the benefit calculation. Earnings that were not covered (i.e., not subject to the Social Security payroll tax) are not included in the calculation.

The computation process for the AIME first indexes a worker's past earnings to account for growth in overall economy-wide earnings. This is done by increasing each year of a worker's taxable earnings after 1950 by the growth in average wages in the economy, as measured by the AWI, from the year of work until two years prior to eligibility for benefits, which for retired workers is age 60. (Workers are first eligible for retirement benefits at age 62.) Earnings paid for work done after age 60 are not indexed.

The impact of wage indexing varies with time because wage growth varies year to year. This means that, although wage index factors are applied to all birth cohorts, the outcome of wage indexing across birth cohorts is likely to be different. For instance, the national average wage grew from \$32,155 in 2000 to \$41,674 in 2010. So if a 50-year-old worker earned \$20,000 in 2000 and turned 60 in 2010, the *indexed* wage for 2000 would be $$20,000 \times ($41,674/$32,155)$,

⁴⁰ This assumption does not always reflect reality. One study shows that in a sample of workers born between 1926 and 1960, the average worker had 5.7 years of zero earnings within their highest 35 years of earnings. The distribution of zero earnings in this sample was highly skewed (i.e., 60% of workers had no years of zero earnings, while 7% had more than 25 years of zero earnings). Women were estimated to have more years of no earnings compared to men, and years of no earnings were negatively correlated to earnings level (i.e., workers with lower earnings were estimated to experience a larger number of years of no earnings than were workers with higher earnings). See Chad Newcomb, *Distribution of Zero-Earning Years by Gender, Birth Cohort, and Level of Lifetime Earnings*, SSA, November 2000, https://www.ssa.gov/policy/docs/rsnotes/rsn2000-02.html.

⁴¹ For more information on COLAs, see CRS Report 94-803, Social Security: Cost-of-Living Adjustments.

or $$25,921.^{42}$ In this case the index factor was 1.2960 (i.e., \$41,674/\$32,155). Alternatively, consider a 49-year-old worker who also earned \$20,000 in 2000 but turned 60 in 2011. The national average wage was \$42,980 in 2011. The indexed wage for the worker's earnings in 2000 would be $$20,000 \times ($42,980/$32,155)$, or \$26,733. In this case the index factor was 1.3367 (i.e., \$42,980/\$32,155). Thus, workers with identical earnings history in the same year (i.e., 2010) but born in different years can yield different wage-indexed earnings. Assuming positive wage growth over time, the younger worker will have higher wage-indexed earnings.

Figure 2 shows the index factors for the three select birth cohorts: 1960, 1985, and 2010. The index factors for the 1960 birth cohort are known, whereas the index factors for the 1985 and 2010 birth cohorts are based on both historical data and the trustees' projections using their intermediate assumptions (i.e., their best estimate) for growth in the AWI. As **Figure 2** illustrates, index factors vary by birth cohort but display a generally similar trend across ages. For instance, indexing past earnings from a worker's earliest earnings (i.e., from his or her 20s) generally requires a higher index factor than a worker's more recent earnings (i.e., from his or her 50s). Consequently, index factors are highest for periods further in the past than for periods closer to the age 60. As discussed, earnings histories are wage indexed to age 60. Naturally, this results in lower indexed factors applied to earnings closer to age 60 than for those in earlier years.



Figure 2. Index Factors for Select Birth Cohorts

Index Factors Calculated Using the Social Security Administration's Average Wage Index (AWI)



Notes: For the 1960 birth cohort, working ages 21-61 correspond to earnings from 1981 through 2021. For the 1985 birth cohort, working ages 21-61 correspond to earnings from 2006 through 2046. For the 2010 birth cohort, working ages 21-61 correspond to earnings from 2031 through 2071.

⁴² For a list of historical AWI amounts, see SSA, "National Average Wage Index," https://www.ssa.gov/OACT/COLA/AWI.html.

After a worker's past earnings have been wage indexed, the AIME is calculated by summing the highest 35 years of those indexed earnings and dividing by 420 (i.e., the number of months in 35 years).⁴³ This step makes the AIME a monthly measure. **Table 1** shows the results of AIME computation for the selected birth cohorts—1960, 1985, and 2010—by hypothetical earnings levels.⁴⁴

Table 1 reveals an important characteristic: Indexed earnings and AIMEs generally increase from one birth cohort to the next. Because of the indexation process (i.e., indexing past earnings using the AWI) and generally increasing average wages, the AIMEs from one birth cohort to the next generally increase. For instance, a very low earner in the 1960 birth cohort is calculated to have an AIME of \$1,155, whereas a very low earner in the 1985 birth cohort is projected to have an AIME of \$3,174. Maximum earners are assumed to have earned at the taxable maximum in each year. Thus, for the 1960 birth cohort, the AIME of \$11,430 represents the maximum AIME possible for a worker of that cohort.

Table 1. Total Wage Indexed Earnings and Average Indexed Monthly Earnings (AIME) by Birth Cohort and Hypothetical Earnings Levels

Birth Cohort	Hypothetical Earnings Level	Total Earnings from Highest 35 Years of Wage-Indexed Earnings	AIME
	Very Low Earner	\$485,264.72	\$1,155.00
	Low Earner	873,300.46	2,079.00
1960	Medium Earner	1,940,669.47	4,620.00
	High Earner	3,104,938.64	7,392.00
	Maximum Earner	4,801,018.60	11,430.00
	Very Low Earner	1,333,198.52	3,174.00
	Low Earner	2,399,269.78	5,712.00
1985	Medium Earner	5,331,722.84	12,694.00
	High Earner	8,530,390.33	20,310.00
	Maximum Earner	13,239,197.00	31,521.00
	Very Low Earner	3,189,451.00	7,593.00
	Low Earner	5,739,845.47	13,666.00
2010	Medium Earner	12,755,241.23	30,369.00
	High Earner	20,407,509.91	48,589.00
	Maximum Earner	31,604,696.46	75,249.00

Source: CRS.

Notes: Wage-indexed earnings are rounded to the nearest cent, and AIMEs are rounded down to the nearest dollar (see 20 C.F.R. §404.211).

⁴³ If the person worked fewer than 35 years in employment subject to Social Security payroll taxes, the computation includes some years of zero earnings. Additionally, some workers may continue to work after their AIMEs—and initial benefit amounts—have been calculated. In such instances, benefit amounts are recomputed, and more recent earnings would be included in the benefit computation process using nominal values.

⁴⁴ Under current law, annual earnings until age 60 are wage-indexed using the AWI, whereas earnings for later years are kept at nominal values.

Step 2: Computing the Primary Insurance Amount (PIA)

The next step in determining benefit amounts is to calculate the PIA. The PIA computation process is the same for all workers. However, because the bend points used in the process are wage indexed, this process results in a benefit calculation that is specific for each birth cohort (see Figure 3).

This step starts by sectioning the AIME into three brackets (or segments) of earnings using two dollar amounts known as *bend points*. In 2022, the two bend points were \$1,024 and \$6,172.⁴⁵ These bend points were applied to those who first became eligible for benefits in 2022 (i.e., the 1960 birth cohort). Bend points are indexed to the AWI, so they generally increase each year.⁴⁶ Thus, similar to wage-index factors, no two birth cohorts are likely to have the same bend points. So workers with identical AIMEs—but born in different years—can have different PIAs.

Computation of Bend Points and Replacement Factors

The formula for determining bend points is set by law.⁴⁷ For any year after 1979, the formula states that the bend points are equal to the base—which was set for the bend points in 1979 (i.e., \$180 and \$1,085)—multiplied by the ratio of (1) the AWI for the year that is two years prior to the year for which the worker turns 62 to (2) the AWI for 1977. The result is then rounded to the nearest dollar. For instance, the first bend point, \$1,024, for a worker born in 1960 (i.e., turning 62 in 2022) is calculated by multiplying the first bend point in 1979 (\$180) by the ratio of the 2020 AWI to the 1977 AWI (i.e., \$55,628.60 to \$9,779.44). The result, \$1,023.90, is rounded to the nearest dollar: \$1,024.

Replacement factors, however, are fixed under current law.⁴⁸ Factors applied to one birth cohort's AIMEs are the same as those applied to successive birth cohorts.

Once the AIME is divided into three segments using the two bend points, each segment is multiplied by a fixed replacement factor: 90%, 32%, and 15%. The three products are summed to determine a worker's PIA. Examples of this process for the 1960 birth cohort are shown for hypothetical earners in **Table 2**.

⁴⁵ The bend points used in the PIA formula are rounded to the nearest dollar (42 U.S.C. §415(a)(1)(B)(iii)).

⁴⁶ Bend points are indexed to the AWI and can decrease when the AWI decreases (42 U.S.C. §415(a)(1)(B)).

⁴⁷ 42 U.S.C. §415(a)(1)(B).

⁴⁸ 42 U.S.C. §415(a).

		PIAs for Hypothetical Workers				
		Very Low Earner	Low Earner	Medium Earner	High Earner	Maximum Earner
Replacement Factors	Three Brackets of Average Indexed Monthly Earnings (AIME) in 2022	AIME of \$1,155.00	AIME of \$2,079.00	AIME of \$4,620.00	AIME of \$7,392.00	AIME of \$11,430.00
90%	AIME up to \$1,024, plus	\$921.60	\$921.60	\$921.60	\$921.60	\$921.60
32%	AIME over \$1,024 and through \$6,172, plus	41.92	337.60	1,151.68	1,647.36	1,647.36
15%	AIME over \$6,172	0.00	0.00	0.00	183.00	788.70
Total: \	Worker's PIA	963.50	1,259.20	2,073.20	2,751.90	3,357.60
Repla e (PIA as Pe	cement Rate rcentage of AIME)	83.4%	60.6%	44.9%	37.2%	29.4%

Table 2. Computation of Primary Insurance Amounts (PIAs) for HypotheticalWorkers Born in 1960, by Earnings Levels

Source: CRS.

Notes: The bend points shown in the table apply to workers who first become eligible in 2022. Under current law, the PIA is rounded down to the nearest dime (42 U.S.C. 115(a)(1)(A)).

Because PIAs are computed using bend points that are determined when a worker achieves age 62, combined with bend points indexed to changes in the AWI—which is typically positive—this generally leads to increasing benefit formula lines from one generation to the next.⁴⁹

The application of the benefit formula to the AIME, as demonstrated in **Table 2**, can also be demonstrated graphically. **Figure 3** displays the benefit formula lines for the selected birth cohorts by plotting the AIME relative to the PIA. Each line has two points of inflection—the bend points—and a terminus. For instance, the benefit formula line for the 1960 birth cohort has an inflection point at \$1,024 (the first bend point) and another at \$6,172 (the second bend point). The terminus—at \$11,430—corresponds to the AIME for a maximum earner in that birth cohort. A maximum earner is assumed to have earned at the taxable maximum in each year, so his or her resulting PIA represents the maximum that a worker in that birth cohort could receive. In terms of the benefit calculation, a hypothetical maximum earner and a hypothetical worker who had earned twice the taxable maximum in each year would have equal covered earnings, AIMEs, and PIAs.

In contrast, **Figure 3** also shows the benefit formula lines for younger birth cohorts (1985 and 2010), both of which are relatively higher than the benefit formula line for the 1960 birth cohort. For instance, under the intermediate projections for wage growth, the bend points for the 2010 birth cohort's benefit formula line are \$6,739 and \$40,619. That cohort's benefit formula line concludes with a projected maximum AIME of \$75,249 and a corresponding maximum PIA of \$22,101.20.

⁴⁹ Over its history, the AWI has increased in all but one year (2009) at an average rate of 4.5%.



Figure 3. Social Security Benefit Formula Lines for Selected Birth Cohorts

Source: CRS.

Notes: Benefit formula lines for the 1985 and 2010 birth cohorts are calculated under the Social Security Board of Trustees' intermediate assumptions—their best estimate—from the 2024 Annual Report (see Table V.C1 at https://www.ssa.gov/OACT/TR/2024/V_C_prog.html#1047210 and supplemental single-year Table VI.G6 at https://www.ssa.gov/OACT/TR/2024/Ir6g6.html).

Replacement Rates

Table 3 displays the resulting PIA amounts—by earnings level and birth cohort—when the respective benefit formula is applied to AIME. **Table 3** also displays the replacement rates as measured by the ratio of PIA to AIME. In this way, the replacement rate measures the percentage of career-averaged indexed earnings (i.e., AIME) that is replaced by the basic benefit amount (i.e., PIA). In general, replacement rates by earnings levels are almost identical across birth cohorts—a feature of the wage-indexed benefit computation process. For example, a low earner in the 2010 birth cohort can expect a similar or identical replacement rate as a low earner in the 1960 birth cohort.

Birth Cohort	Hypothetical Earnings Level	AIME	ΡΙΑ	Replacement Rate
	Very Low Earner	\$1,155.00	\$963.50	83.4%
	Low Earner	2,079.00	1,259.20	60.6%
1960	Medium Earner	4,620.00	2,072.30	44.9%
	High Earner	7,392.00	2,751.90	37.2%
	Maximum Earner	11,430.00	3,357.60	29.4%
	Very Low Earner	3,174.00	2,649.50	83.5%
	Low Earner	5,712.00	3,461.70	60.6%
1985	Medium Earner	12,694.00	5,695.90	44.9%
	High Earner	20,310.00	7,566.70	37.3%
	Maximum Earner	31,521.00	9,248.40	29.3%
	Very Low Earner	7,593.00	6,338.30	83.5%
	Low Earner	13,666.00	8,281.70	60.6%
2010	Medium Earner	30,369.00	I 3,626.70	44.9%
	High Earner	48,589.00	18,102.20	37.3%
	Maximum Earner	75,249.00	22,101.20	29.4%

Table 3. Average Indexed Monthl	y Earnings (AIMEs), Primary Insurance Amounts
(PIAs), and Replacement Rates b	y Birth Cohort and Hypothetical Earnings Levels

Source: CRS.

Notes: Replacement rate is measured as a worker's PIA divided by the worker's AIME.

Step 3: Applying Adjustments

Adjustments may be made based on the age at which a beneficiary chooses to begin receiving benefits.⁵⁰ For retired workers who claim benefits at the FRA, the monthly benefit equals the PIA adjusted by any applicable COLAs. Retired workers who claim earlier than the FRA receive monthly benefits lower than the PIA (i.e., an actuarial reduction⁵¹). The earliest eligibility age—the age at which a retired worker can first claim benefits—is 62. The actuarial reduction equals five-ninths of 1% for each month (6²/₃% per year) for the first three years of early claiming and five-twelfths of 1% for each month (5% per year) beyond 36 months. Conversely, those who claim later than the FRA receive benefits higher than the PIA. The permanent increase in monthly benefits that applies to those who claim after the FRA is called the delayed retirement credit. For

⁵⁰ The FRA for workers born in 1960 or later is 67. For more information, see Table 3 in CRS Report R46658, *Social Security: Benefit Calculation*.

⁵¹ The permanent reduction in benefits resulting from actuarial reductions takes into account the longer expected period of benefit receipt. A worker claiming benefits at age 62—the earliest eligibility age—would receive a lower benefit but over a longer period of time on average. Although life expectancy has generally increased during Social Security's history, gains in life expectancy have not been equally distributed across sex, race, educational attainment, and income level. For example, on disparities in life expectancy by income level, see CRS Report R44846, *The Growing Gap in Life Expectancy by Income: Recent Evidence and Implications for the Social Security Retirement Age*.

people born in 1943 and later, that credit is 8% for each year of delayed claiming after the FRA up to age $70.^{52}$

A COLA is also applied to the benefit beginning in the second year of eligibility, which for retired workers is age 63. The COLA applies even if a worker has not yet begun to receive benefits. The COLA usually equals the growth in the CPI-W from the third quarter of one calendar year to the third quarter of the next calendar year.⁵³ The COLA becomes effective in December of the current year and is payable in January of the following year.

In certain situations, other adjustments may apply. For example, the *windfall elimination provision* may reduce benefits for worker beneficiaries with pensions from uncovered Social Security employment.⁵⁴ The *government pension offset* may reduce spousal benefits for spouses with government pensions from uncovered Social Security employment.⁵⁵ The *retirement earnings test* may result in a temporary withholding of benefits for early claimants (younger than FRA) with earnings above a certain level.⁵⁶

Characteristics of the Social Security Benefit Formula

The Social Security benefit calculation process is the same for all workers. The process begins with the computation of a worker's AIME and is followed by the computation of the worker's PIA. The PIA is a worker's basic benefit before adjustments are applied, such as COLAs or adjustments for age. The benefit calculation process exhibits three characteristics:

- 1. **Individual equity.** Benefit amounts are correlated with covered earnings and the taxes paid by workers. The more a worker has earned and paid in payroll taxes, the higher the worker's benefit (see **Figure 4**).
- 2. **Progressivity.** Workers with relatively lower career-average earnings experience relatively higher replacement rates. A lifetime *very low* earner will have a higher replacement rate than a lifetime *maximum* earner will (see **Figure 5**).
- 3. **Stable replacement rates.** Since the 1980s, the level of pre-retirement earnings that is replaced by Social Security benefits has been relatively stable from one birth cohort to the next (see **Figure 5**).

⁵² Similar to actuarial reductions, the permanent increase in benefits from delayed retirement credits takes into account the shorter expected period of benefit receipt. A worker claiming benefits at age 70 would receive a higher benefit, but over a shorter period of time, on average, than would a worker claiming at an earlier age.

⁵³ For more background on COLAs, see CRS Report 94-803, Social Security: Cost-of-Living Adjustments.

⁵⁴ For more information on the windfall elimination provision, see CRS Report 98-35, *Social Security: The Windfall Elimination Provision (WEP)*.

⁵⁵ For background on the government pension offset, see CRS Report RL32453, *Social Security: The Government Pension Offset (GPO)*.

⁵⁶ For more details on the retirement earnings test, see CRS Report R41242, *Social Security Retirement Earnings Test: How Earnings Affect Benefits.*



Figure 4. Scheduled Primary Insurance Amounts (PIAs) by Earnings Levels and Birth Cohorts, 1960-2010

In 2024 Dollars (Under Intermediate Assumptions)

Source: CRS.

Notes: Dollar amounts are adjusted to 2024 dollars using the CPI indexing series in Table VI.G6 of the 2024 *Annual Report.*

Figure 5. Scheduled Replacement Rates by Earnings Levels and Birth Cohorts, 1960-2010

Under Intermediate Assumptions



Source: CRS.

Notes: Replacement rates are calculated as the PIA divided by the AIME.

The Effects of Selected Price Indexing Options on Social Security Benefits

Changing any component of the current-law benefit computation process (i.e., that is wage indexed) to a slower-growing index (e.g., the CPI, which is a price index) would result in lower benefit amounts. For this reason, policymakers could use price indexing for the indexation of earnings, bend points, or replacement factors to slow the growth of benefits.⁵⁷ This section of the report demonstrates how changing selected parameters of the benefit computation from wage indexing to price indexing in 2035 (the year of projected asset reserve depletion) would affect workers of different earnings levels and birth cohorts.

The analysis that follows focuses on three measures to highlight how changes to the current-law benefit formula, effective in 2035, would affect workers of different earnings levels and different birth cohorts (1960, 1985, and 2010):

- AIME: A change to the current-law indexing method that results in lower AIMEs would lead to similar but smaller percentage decreases in PIAs. This *could* result in lower replacement rates than scheduled under current law.
- PIA: A change to the current-law benefit formula lines (see **Figure 3**), whether to bend points or replacement factors, that results in *flatter* lines would result in lower PIAs than scheduled under current law. This *would* result in a lower replacement rate than scheduled under current law.
- Replacement rate: If a beneficiary's PIA decreases by more than his or her AIME, the result is a lower replacement rate than scheduled under current law.⁵⁸

The Effects of Price Indexing Earnings Histories

The first Social Security policy option analyzed would index workers' earnings history to prices rather than wages, as under current law. As discussed in "Step 1: Computing the Average Indexed Monthly Earnings," indexing earning history has the effect of bringing a worker's past earnings up to near current dollar values. Under current law, this was shown in **Figure 2** as a series of index factors for the 1960, 1985, and 2010 birth cohorts.

Should growth in wages continue to outpace growth in prices, as projected, a switch to price indexing earnings histories would decrease the index factors used to calculate a worker's AIME. **Figure 6** demonstrates how such a change would affect the index factors for the selected birth cohorts with the change enacted in 2035. In comparison to **Figure 2**, the index factors for the 1960 birth cohort remain unchanged as workers for that birth cohort would not be affected by a change enacted in 2035.

The workers in the 1985 and 2010 birth cohorts, however, would be affected. This is reflected in the lower index factors in **Figure 6**. Index factors for these younger cohorts are lower than what is projected under current law, reflecting the lower growth in historical and projected price levels

⁵⁷ This report's analysis does not consider the effects of price indexing on other Social Security program elements. Other elements that use wage indexing under current law (e.g., the contribution and benefit base) would not be changed under the policy changes analyzed here.

⁵⁸ There are many methods that can be used to measure replacement rates. No single method is correct. For instance, the method used in this analysis (i.e., PIA/AIME) excludes the effects of possible spousal benefits. See Andrew G. Biggs and Glenn R. Springstead, "Alternate Measures of Replacement Rates for Social Security Benefits," *Social Security Bulletin*, vol. 68, no. 2 (2008), https://www.ssa.gov/policy/docs/ssb/v68n2/v68n2p1.html.

relative to historical and projected growth in wages. This effect is more pronounced for the early career earnings in younger generations that would be affected by such a hypothetical policy change. For instance, the price index factor that would be applied to a hypothetical worker in the 2010 birth cohort is much lower, relative to the wage index factor, for earnings during ages 26-31 than for earnings during ages 51-56.⁵⁹

Figure 6. Index Factors for Selected Birth Cohorts Under Current Law and a Change to Price Indexing Earnings Effective in 2035



Solid Lines Are for Index Factors Using Wage Indexing (Current Law); Dashed Lines Are for Index Factors Using Price Indexing (Proposal)

Source: CRS using the Social Security Board of Trustees' intermediate assumptions—their best estimate—from the 2024 Annual Report (see supplemental single-year Table VI.G6 at https://www.ssa.gov/OACT/TR/2024/ lr6g6.html).

Table 4 highlights how a change to the price indexing of earnings histories effective in 2035 would affect the benefit calculation measures for some workers. A policy change (i.e., switching from wage-indexing earnings history to price-indexing earnings history) necessarily has a start date, and this results in some workers being unaffected (those born in 1960), some being partially affected (those born in 1985) and some being fully affected (those born in 2010). Consequently, the measures shown for this birth cohort are the same as those under current law (**Table 3**).

Table 4 shows how the 1985 birth cohort would be partially affected by a change to the price indexing of earnings history. For instance, when the lower price-based index factors are used to

⁵⁹ This shift may affect which years of a worker's earnings are used to compute his or her AIME. As discussed in "Step 1: Computing the Average Indexed Monthly Earnings," a worker's highest 35 years of *indexed* earnings are used to compute the AIME. Thus, although a change to price indexing a worker's past earnings will not change how many years (i.e., 35) are used in the AIME computation, it may change *which* years are used in the AIME computation.

index a hypothetical medium earner's career earnings, it results in a decrease of 1.9% in the worker's AIME. In fact, this experience—a decreased AIME—is the same for the hypothetical very low, low, and high earners.

When the 1985 birth cohort's progressive, current-law benefit formula (**Figure 3**) is applied to hypothetical workers' respective AIMEs, it also results in a lower PIA than under current law. That is, the effects of a lower AIME are carried through the benefit formula, resulting in a lower PIA. For instance, the medium worker's PIA is estimated to be about 1.3% less than under current law. Because the benefit formula is progressive—replacing only some of the worker's AIME— the decrease in the medium worker's PIA (1.3%) is less than the decrease in the medium worker's AIME (1.9%). The medium worker's replacement rate (measured as the ratio of PIA to AIME) increased by 0.2 percentage points under this policy change. Thus, it may appear as though such a policy change would be advantageous to this type of worker. However, the analysis in **Table 4** shows that this increase in replacement rate results from a worker's earnings—and therefore AIME—decreasing more than the worker's PIA.

In contrast, the hypothetical maximum earner in the 1985 birth cohort is estimated to have a benefit amount that decreased—but less than those for other earnings categories. This results from a combination of two factors: (1) the relatively high estimated index factors for that birth cohort's earlier years and (2) the benefit formula using only a worker's highest 35 years of indexed wages. As with the very low, low, medium, and high-earning workers, this typically results in indexed wages from a worker's earliest earnings being dropped from the calculation (i.e., hypothetical workers are shown to have earned less in their earlier years of paid labor). However, a maximum earner is always assumed to have earned at the taxable maximum and, after indexing, may result in mid-career index earnings being dropped.⁶⁰

Table 4 also shows how the 2010 birth cohort would be affected by a change to the price indexing of earnings histories. For instance, when the lower, price-based index factors are used, it results in a decrease in AIMEs of 15.4% for very low, low, medium and high earners and a decrease in AIMEs of 12.7% for maximum earners. When the 2010 birth cohort's progressive, current-law benefit formula (**Figure 3**) is applied to hypothetical workers' respective AIMEs, it also results in a lower PIA than under current law. For instance, the medium worker's PIA is estimated to be 11.0% less than under current law. Likewise, the medium worker's replacement rate increased by 2.3 percentage points under this policy change.

Table 4 shows how the 1985 birth cohort would be partially affected by a policy change effective in 2035 and how the 2010 birth cohort would be fully affected by a policy change effective in 2035. In each case, because of the progressive nature of calculating a worker's PIA, some workers are affected differently. That is, workers of a birth cohort would experience similar changes to their AIMEs but not to their PIAs or replacement rates. For instance, **Table 4** shows that for the 1985 and 2010 birth cohorts, the very low earners would experience the largest percentage point increase in replacement rates, whereas the maximum earners would experience the smallest percentage point increase. Once again, this increase in replacement rates reflects a larger decrease in the ratio's denominator (AIME) than in the numerator (PIA).

⁶⁰ See footnote 59. In this scenario, the maximum earner, under intermediate assumptions, would have earned the same amount—in nominal dollars—as a maximum earner under the current law scenario (i.e., **Table 1**). However, the lower index factors would result in a hypothetical lower AIME and PIA, although the same benefit formula (i.e., **Figure 3**) would be applied.

			-	
Birth Cohort	Hypothetical Earnings Level	Change in AIME	Change in PIA	Change in Replacement Rate
	Very Low Earner	0.0%	0.0%	0.0 рр
	Low Earner	0.0%	0.0%	0.0 рр
1960	Medium Earner	0.0%	0.0%	0.0 рр
	High Earner	0.0%	0.0%	0.0 рр
	Maximum Earner	0.0%	0.0%	0.0 рр
	Very Low Earner	-1.9%	-0.7%	1.0 рр
	Low Earner	-1.9%	-1.0%	0.6 рр
1985	Medium Earner	-1.9%	-1.3%	0.2 рр
	High Earner	-1.9%	-0.8%	0.4 рр
	Maximum Earner	-0.8%	-0.4%	0.1 рр
	Very Low Earner	-15.4%	-8.7%	6.5 рр
	Low Earner	-15.4%	-8.1%	5.2 рр
2010	Medium Earner	-15.4%	-11.0%	2.3 рр
	High Earner	-15.4%	-6.2%	4.0 рр
	Maximum Earner	-12.7%	-6.5%	2.1 рр

Table 4. Price-Indexed Earnings: Change in Average Indexed Monthly Earnings (AIMEs), Primary Insurance Amounts (PIAs), and Replacement Rates by Birth Cohort and Hypothetical Earnings Levels Effective in 2035

Source: CRS.

Notes: CRS calculations based on hypothetical earner profiles developed by OCACT. Calculations assume scheduled benefits paid under the 2024 intermediate assumptions and current law. Replacement rate is measured as a worker's PIA divided by the worker's AIME.

The above results are broadly similar to Congressional Budget Office (CBO) estimates from 2015, which find that, because a change to the price indexing of earnings histories would reduce benefits, this would result in lower initial benefits than those calculated under current law (i.e., because prices grow more slowly than wages).⁶¹ In analysis using a different measure for earnings (i.e., lifetime household earnings by quintile), the CBO analysis found that the mean initial benefit would decrease by a higher percentage for retired workers in the lowest and middle quintiles of household earnings relative to retired workers in the highest quintile of household earnings. Additionally, this effect would be more pronounced for younger birth cohorts.⁶² In

⁶¹ CBO, *Social Security Policy Options, 2015*, December 2015, p. 42, https://www.cbo.gov/publication/51011. This source reflects the most recent CBO analysis of this issue.

⁶² CBO, Social Security Policy Options, Table 3, Option 12, pp. 30-35.

CBO's analysis,⁶³ a change to the price indexing of benefits effective in 2023 improved the *actuarial balance* by 10%.⁶⁴

Past analysis concluded that a transition to the price indexing of earnings would represent a "oneshot cut" in benefits.⁶⁵ Under this proposal, all earnings would eventually be indexed by prices. Once this were to occur, average benefits would be in line with the growth in wages and the rate at which the bend points would continue to be adjusted. This feature is highlighted in **Figure 7** and **Figure 8**, which shows PIAs and replacement rates under current law and a change to priceindexed earnings for all birth cohorts from 1960 through 2010. The dashed lines, representing the policy change, show PIAs growing at a slower trajectory but replacement rates transitioning to a higher level. Thus, unlike the next proposals discussed in this report, this policy change would not result in increasing savings over time.

Figure 7. Price-Indexed Earnings: Scheduled and Proposed Primary Insurance Amounts by Earnings Levels and Birth Cohorts, 1960-2010



In 2024 dollars (Under Intermediate Assumptions)

Source: CRS.

⁶³ In CBO's analysis, earnings from 2022 and earlier were indexed using growth in wages, while earnings in 2023 and later were indexed using growth in prices. Thus, some birth cohorts' AIMEs were computed using a combination of wage-indexed earnings *and* price-indexed earnings. Thus, under CBO's analysis, the reduction in benefits (i.e., cost savings) would grow over time until all beneficiaries' earnings histories would be price indexed before stabilizing. CBO, *Social Security Policy Options*, pp. 49-50.

⁶⁴ The actuarial balance is the sum of the differences between the projected income and projected cost over the projection period, expressed as a percentage of taxable payroll. This measure represents the change in income or cost that would be required to achieve program balance over the 75-year projection period and to achieve a trust fund reserve equal to one year's projected cost by the end of the period. In the *2024 Annual Report*, the actuarial balance is estimated to be -3.54% of taxable payroll. (Most recently, CBO estimates the actuarial balance as -5.1% of taxable payroll.)

⁶⁵ Alicia H. Munnell and Mauricio Soto, "What Does Price Indexing Mean for Social Security Benefits?," Just the Facts on Retirement Issues, vol. 14 (January 2005), p. 3, https://crr.bc.edu/wp-content/uploads/2005/01/jtf_14.pdf.

Notes: Dollar amounts are adjusted to 2024 dollars using the CPI indexing series in Table VI.G6 of the 2024 *Annual Report.*

Figure 8. Price-Indexed Earnings: Scheduled and Proposed Replacement Rates by Earnings Levels and Birth Cohorts, 1960-2010



Under Intermediate Assumptions

Source: CRS.

Notes: Replacement rates are calculated as the primary insurance amount (PIA) divided by average indexed monthly earnings (AIME).

The Effects of Price Indexing Bend Points

A second change to current law that would introduce more price indexing to the Social Security benefit computation would be to price index the computation of bend points. As discussed in "Step 2: Computing the Primary Insurance Amount (PIA)," bend points are adjusted each year using the growth in economy-wide earnings (measured using SSA's AWI). Birth-cohort-specific bend points—as part of the benefit formula—are applied to a worker's AIME to determine his or her PIA. As economy-wide wages typically increase year to year, so too do the bend points. Generally, increasing bend points result in increasing benefit formulas lines and, as a result, generally increasing benefit amounts. Under current law and the trustees' intermediate projections, this was shown in **Figure 3** as a series of increasing benefit formula lines for the 1960, 1985, and 2010 birth cohorts.

Wage growth is projected to outpace price growth. Should this projection come about, a change to price indexing bend points would decrease a worker's PIA. **Figure 9** demonstrates how such a change, effective in 2035, would affect the birth-cohort-specific benefit formula lines for the selected birth cohorts. In comparison to **Figure 3**, the benefit formula line for the 1960 birth cohort would be unaffected by a policy change implemented in 2035. The workers in the 1985 and 2010 birth cohorts, however, would be affected. For these two birth cohorts, using lower (projected) price growth in the bend point computation would result in lower benefit formula

lines than projected under current law (i.e., wage indexed). This is reflected in **Figure 9** by lower (dashed) benefit formula lines for these birth cohorts relative to higher (solid) current law benefit formula lines.

Similar to **Figure 3**, the new benefit formula lines using price indexing for the bend point calculation shown in **Figure 9** also have two points of inflection (i.e., two bend points). For instance, the price-indexed benefit formula line for the 2010 birth cohort has an inflection point at \$3,662 (the first bend point) and another at \$22,072 (the second bend point). These bend points are lower than those projected under current law for the 2010 birth cohort: \$6,739 and \$40,619, respectively. Because a change to the price indexation of bend points would not affect a worker's AIME, **Figure 9** shows that the maximum AIME (i.e., for a lifetime maximum earner) of the 2010 birth cohort would be \$75,249 under current law (solid line) and under the change in bend point computation (dashed line). However, the lower bend points under price indexation would result in a lower maximum PIA.

Figure 9. Benefit Formula Lines for Selected Birth Cohorts Under a Change to Price Indexing of Bend Points Effective in 2035



Solid Lines Are Benefit Formula Lines Using Wage-Indexed Bend Points; Dashed Lines Are Benefit Formula Lines Using Price-Indexed Bend Points

Source: CRS using the Social Security Board of Trustees' intermediate assumptions—their best estimate—from the 2024 Annual Report (see supplemental single-year Table VI.G6 at https://www.ssa.gov/OACT/TR/2024/ lr6g6.html).

Note: If wage growth continues to outpace price growth, as projected, the difference between bend points projected under current law (wage indexing) and those under a policy change to price indexing would continue to grow.

Table 5 shows how changing the adjustment of bend points to price indexing—effective in 2035—would affect the benefit calculation for workers of different earnings levels for selected birth cohorts. The effective date for this change (2035) would not affect the benefit calculation measures for the 1960 birth cohort, as their calculations would be computed under current law.

Table 5 shows how the 1985 birth cohort would be affected by a change to the price indexing of bend points. For instance, when the lower price-based bend points are used to compute a hypothetical medium earner's PIA, it results in a decrease of 9.6% in that worker's PIA. That decrease in the 1985 birth cohort's hypothetical medium earner's PIA results in a decrease in the replacement rate of 4.3 percentage points. All hypothetical earners of this birth cohort would be affected by this policy change. Yet, because of the progressivity of the benefit formula, not all workers in the 1985 birth cohort would experience the same change in replacement rate. For instance, a hypothetical very low earner of the 1985 birth cohort would experience a decrease of 14.5 percentage points in his or her projected replacement rate, whereas a hypothetical high earner of the same birth cohort would experience a decrease of 4.0 percentage points in his or her projected replacement rate.

Table 5 also shows how the 2010 birth cohort would be affected by a change to the price indexing of bend points. When the lower price-based bend points are used, it results in a relatively larger decrease in a hypothetical worker's PIA compared to the older (1985) birth cohort. Similarly, the use of lower price-based bend points also results in a decrease of all workers' replacement rates. Once again, the progressivity of the benefit formula results in a larger percentage point decrease in replacement rates for very low earners than for other hypothetical earners.

Birth Cohort	Hypothetical Earnings Level	Change in AIME	Change in PIA	Change in Replacement Rate
	Very Low Earner	0.0%	0.0%	0.0 рр
	Low Earner	0.0%	0.0%	0.0 рр
1960	Medium Earner	0.0%	0.0%	0.0 рр
	High Earner	0.0%	0.0%	0.0 рр
	Maximum Earner	0.0%	0.0%	0.0 рр
	Very Low Earner	0.0%	-17.4%	-14.5 рр
	Low Earner	0.0%	-13.3%	-8.1 рр
1985	Medium Earner	0.0%	-9.6%	-4.3 рр
	High Earner	0.0%	-16.8%	-6.3 рр
	Maximum Earner	0.0%	-13.8%	-4.0 рр
	Very Low Earner	0.0%	-28.2%	-23.5 рр
	Low Earner	0.0%	-21.5%	-13.1 рр
2010	Medium Earner	0.0%	-23.4%	-10.5 рр
	High Earner	0.0%	-27.3%	-10.2 рр
	Maximum Earner	0.0%	-22.3%	-6.6 рр

Table 5. Price-Indexed Bend Points: Change in Average Indexed Monthly Earnings (AIMEs), Primary Insurance Amounts (PIAs), and Replacement Rates by Birth Cohort and Hypothetical Earnings Levels

Source: CRS.

Notes: CRS calculations based on hypothetical earner profiles developed by OCACT. Calculations assume scheduled benefits paid under the 2024 intermediate assumptions and current law. Replacement rate is measured as a worker's PIA divided by the worker's AIME.

The above results are broadly similar to the 2015 CBO analysis, which finds that a change to the price indexing of bend points would result in slower bend point growth over time. According to CBO, although a worker's AIME would not change under this policy, the lower bend points result in the replacement factors being applied to a smaller portion of the worker's AIME.⁶⁶ Because of this, CBO's analysis found that that the mean initial benefits for retired workers would be smaller—relative to those projected under current law—and that this difference would increase over time for retired workers from the lowest, middle, and highest quintiles of lifetime household earnings.⁶⁷ CBO estimated that, if this policy were to become effective in 2023, it would improve the actuarial balance by 40%.⁶⁸ Although CBO estimates that this would not significantly change the trust fund depletion date, it would increase the amount of benefits payable at the point of trust fund depletion.

Under current law, the AIME calculation and PIA bend points are both indexed using growth in average wages. By switching the bend point calculation to reflect (slower) price growth, it would introduce *bracket creep*.⁶⁹ Past analysis concluded that bracket creep "would slow the growth of average benefits below the growth rate of average wages."⁷⁰ Thus, the portion of earnings that would be replaced at 32% and 15% would increase over time, while the portion of earnings that would be replaced at 90% would decrease over time. This explains why it would result in *increasing* savings over time, unlike the previous discussion on price indexing earnings histories. When all earnings are in the top bracket, growth in average benefits would once again reflect growth in average wages.

This increasing savings over time is highlighted in **Figure 10** and **Figure 11**, which show PIAs and replacement rates under current law and a change to price-indexed bend points for all birth cohorts from 1960 through 2010. The dashed lines, representing the policy change, show PIAs growing at a slower trajectory than under current law. In fact, as time progresses, the differences in PIA between current law and a policy change to price-indexed bend points increases. Under such a policy change, replacement rates also demonstrate an increasing divergence relative to those scheduled under current law. Note that the 1960 cohorts would be unaffected by this policy change due to its hypothetical implementation in 2035, as their earnings at that age are already subject to price-indexed bend points.

⁶⁶ CBO, Social Security Policy Options, p. 58.

⁶⁷ CBO, Social Security Policy Options, Table 3, Option 21, pp. 30-35.

⁶⁸ In CBO's analysis, this improvement in actuarial balance would not significantly change the projected date of trust fund depletion. (CBO projected a trust fund depletion date of 2029 in this analysis.) In 2023, CBO projected a combined trust fund depletion date of 2033. See CBO, "CBO's 2023 Long-Term Projections for Social Security," June 29, 2023, https://www.cbo.gov/publication/59184).

⁶⁹ *Bracket creep* describes a situation in which increasing amounts of a worker's average indexed monthly earnings would fall intro higher brackets of replaced earnings (e.g., 15%). Munnell and Soto, "What Does Price Indexing Mean for Social Security Benefits?," p. 3.

⁷⁰ Munnell and Soto, "What Does Price Indexing Mean for Social Security Benefits?," p. 3.

Figure 10. Price-Indexed Bend Points: Scheduled and Proposed Primary Insurance Amounts by Earnings Levels and Birth Cohorts, 1960-2010



In 2024 Dollars (Under Intermediate Assumptions)

Source: CRS.

Notes: Dollar amounts are adjusted to 2024 dollars using the CPI indexing series in Table VI.G6 of the 2024 *Annual Report.*

Figure 11. Price-Indexed Bend Points: Scheduled and Proposed Replacement Rates by Earnings Levels and Birth Cohorts, 1960-2010



Under Intermediate Assumptions

Source: CRS.

Notes: Replacement rates are calculated as the primary insurance amount (PIA) divided by average indexed monthly earnings (AIME).

The Effects of Price Indexing Earnings Histories and Bend Points

Another policy option would be to price index both earnings histories and bend points⁷¹— specifically, to change both instances of wage indexing (i.e., in Steps 1 and 2) in the benefit formula to price indexing. Should wage growth continue to outpace price growth, as projected, this would effectively apply the lower price-indexed factors from **Figure 6** with the lower price-indexed bend points from **Figure 9**.

Similar to the previous options, if this price-indexing option were in effect beginning in 2035, the 1960 birth cohort would be unaffected. However, the 1985 and 2010 birth cohorts would be affected. As reflected in **Figure 6**, the index factors for these younger cohorts would be lower than what is projected under current law, reflecting the lower growth in historical and projected price levels relative to wages. This effect would be more pronounced for the 2010 birth cohort, which would have more years of earnings subject to the policy change. Moreover, for these two birth cohorts, using lower (projected) price growth in the bend point computation would result in lower benefit formula lines than projected under current law (i.e., wage indexed), as reflected in **Figure 9**.

Table 6 shows how changing the calculation of index factors and bend points to price indexing effective in 2035—would affect the benefit calculation for workers of different earnings levels for selected birth cohorts. The effective date for this change (2035) would not affect the benefit calculation for the 1960 birth cohort, as their calculations would be computed under current law.

However, **Table 6** does show how the 1985 birth cohort would be partially affected by a policy change effective in 2035, and the 2010 birth cohort would be fully affected by a policy change effective in 2035. For each case, workers' AIMEs would be affected in a manner identical to **Table 4**. This effect, combined with the lower price-indexed bend points, would result in lower PIAs for hypothetical workers of all earnings levels. Similar to the previous options, the lower price-based index factors and bend points would also result in a decrease of all workers' replacement rates. Once again, the progressivity of the benefit formula would result in a larger percentage point decrease in replacement rates for very low earners than for other hypothetical earners.

⁷¹ This was the proposal put forth in the Second Hsiao Panel. See **Appendix**.

Table 6. Price-Indexed Earnings and Bend Points: Change in Average Indexed				
Monthly Earnings (AIMEs), Primary Insurance Amounts (PIAs), and Replacement				
Rates by Birth Cohort and Hypothetical Earnings Levels				
Effective in 2035				

Birth Cohort	Hypothetical Earnings Level	Change in AIME	Change in PIA	Change in Replacement Rate
	Very Low Earner	0.0%	0.0%	0.0 рр
	Low Earner	0.0%	0.0%	0.0 рр
1960	Medium Earner	0.0%	0.0%	0.0 рр
	High Earner	0.0%	0.0%	0.0 рр
	Maximum Earner	0.0%	0.0%	0.0 рр
	Very Low Earner	-1.9%	-18.1%	-13.8 рр
	Low Earner	-1.9%	-14.3%	-7.7 рр
1985	Medium Earner	-1.9%	-10.2%	-3.8 рр
	High Earner	-1.9%	-17.6%	-6.0 рр
	Maximum Earner	-0.8%	-14.2%	-4.0 рр
	Very Low Earner	-15.4%	-34.0%	-18.4 рр
	Low Earner	-15.4%	-29.7%	-10.2 рр
2010	Medium Earner	-15.4%	-28.6%	-7.0 рр
	High Earner	-15.4%	-33.5%	-8.0 рр
	Maximum Farner	-12.7%	-78.8%	-5.4 DD

Source: CRS.

Notes: CRS calculations based on hypothetical earner profiles developed by OCACT. Calculations assume scheduled benefits paid under the 2024 intermediate assumptions and current law. Replacement rate is measured as a worker's PIA divided by the worker's AIME.

Figure 12 and **Figure 13** show the PIAs and replacement rates under current law and a change to price-indexed earnings and bend points for all birth cohorts from 1960 through 2010. Representing the policy change, the dashed lines show that the PIAs would grow at a slower trajectory than under a policy to change to either price-indexed earnings or price-indexed bend points. As expected, the combination of both would lead to larger decreases over time.

Figure 12. Price-Indexed Earnings and Bend Points: Scheduled and Proposed Primary Insurance Amounts by Earnings Levels and Birth Cohorts, 1960-2010



In 2024 Dollars (Under Intermediate Assumptions)

Source: CRS.

Notes: Dollar amounts are adjusted to 2024 dollars using the CPI indexing series in Table VI.G6 of the 2024 *Annual Report.*





Under Intermediate Assumptions

Source: CRS.

Notes: Replacement rates are calculated as the primary insurance amount (PIA) divided by average indexed monthly earnings (AIME).

The Effects of Price Indexing Replacement Factors (Pure Price Indexing)

A fourth method to introduce more price indexing to the Social Security benefit computation would be to reduce the replacement factors (see Table 2) in each year by the ratio of price growth to wage growth. One previous proposal—commonly referred to as *pure* price indexing⁷²—called for multiplying the replacement factor each year by the ratio of price growth to wage growth for the second year prior.⁷³ (Recall that the replacement factors are fixed under current law and do not change from year to year.) As discussed in "Projected Wage and Price Growth," the trustees project long-term growth in prices to be about 2.40% and long-term wage growth to be about 3.56%. Thus, under current projections, this proposal would multiply each of the three replacement factors—90%, 32%, and 15%—by 0.9888 (i.e., 1.0240 divided by 1.0356).⁷⁴ Figure 14 illustrates how this change would affect replacement factors for birth cohorts first becoming eligible for benefits in 2035 (i.e., the 1973 birth cohort). This would result in successively lower replacement factors applied to each birth cohort that first becomes eligible for benefits in 2035 and later. For instance, while the 1960 birth cohort's replacement factors would be the same as under current law, those for the 1985 birth cohort (first eligible for benefits in 2047) would be 77%, 27%, and 13%. The 2010 birth cohort (first eligible for benefits in 2072) would have replacement factors of 58%, 21%, and 10%.

⁷² Some past research and analysis refer to this policy change simply as *price indexing*. This may be confusing as it would preserve elements of the benefit calculation that are wage indexed under current law: indexing factors and bend points. Other research has referred to this policy as "real wage growth negating." (See Peter A. Diamond and Peter R. Orszag, "Price Indexing' Initial Social Security Benefits," *Tax Notes*, January 24, 2005, pp. 471-473.)

⁷³ In 2001, the President's Commission to Strengthen Social Security proposed three models to improve the program's solvency. At the time, the model that was estimated to provide the highest possibility for permanent solvency (Model #2) included, among other provisions, *pure* price indexing. For more information, see the commission's report at https://www.ssa.gov/history/reports/pcsss/Final_report.pdf. Variations of pure price indexing had been previously introduced in Congress (e.g., H.R. 5659; 106th Congress).

 $^{^{74}}$ So long as price growth outpaces wage growth, this factor would always be less than 1. This would effectively remove the effects of real wage growth.

Figure 14. Replacement Factors: Current Law and Change in Replacement Factors Under Pure Price Indexing Effective in 2035



Solid Lines Are Replacement Factors Under Current Law; Dashed Lines Are Replacement Factors Under Pure Price Indexing

Source: CRS.

Note: The solid lines represent the replacement factors—fixed under current law—of 90%, 32%, and 15%. The dotted lines represent estimated replacement factors under *pure* price indexing. Under a pure price indexing proposal, effective in 2035, the replacement factors would be multiplied by the ratio of price growth to wage growth (under the intermediate assumptions in the 2024 Annual Report).

Similar to current law, each benefit formula line would still exhibit three key points: two bend points and a terminus. The bend points would be unchanged from current law, and the terminus would still reflect the maximum AIME and PIA possible for that birth cohort under current law.

Figure 15 highlights the benefit formula lines for the 1960, 1985, and 2010 birth cohorts under current law (solid lines, same as in **Figure 3**) and under a change to pure price indexing (dotted lines). The difference from the benefit formula lines under current law is reflected in the slope of each segment of AIME. Because the slope of each segment of AIME is effectively the replacement factor for that bracket of earnings, the younger generations' benefit formula lines would be relatively *flatter*. Should growth in wages continue to outpace growth in prices, as projected, a policy change to pure price indexing would result in successively flatter benefit formula lines. as shown in **Figure 15**.

Similar to the previous three policy options analyzed, a change effective in 2035 would not affect the 1960 birth cohort. The workers in the 1985 and 2010 birth cohorts, however, would be affected. This is reflected in the relatively flatter benefit formula lines for these younger cohorts. This effect is more pronounced in the 2010 birth cohort's formula as it would be subject to the lowest replacement factors of the three birth cohorts analyzed.



Figure 15. Benefit Formula Lines Under Current Law and Pure Price Indexing

Solid Lines Are Benefit Formula Lines Under Current Law; Dashed Lines Are Benefit Formula Lines Under Pure Price Indexing

Source: CRS.

Notes: A change to pure price indexing would result in *flatter* benefit formula lines for each successive birth cohort affected by the policy.

Table 7 shows how pure price indexing—effective in 2035—would affect the benefit calculation measures for workers of different earnings levels for selected birth cohorts. The effective date for this change (2035) would not impact the benefit calculation for the 1960 birth cohort, as their calculations would be computed under current law.

Table 7 shows how the 1985 birth cohort would be affected by a change to the price indexing of bend points. For instance, when the lower replacement factors are used to compute a hypothetical medium earner's PIA, it results in a decrease of 14.7% in that worker's PIA. That decrease in the 1985 birth cohort's hypothetical medium earner's PIA results in a decrease in the replacement rate of 6.6 percentage points. All hypothetical earners of this birth cohort would be affected by this policy change. Yet, because of the progressivity of the benefit formula, not all workers would experience the same change in replacement rate. For instance, a hypothetical very low earner of the 1985 birth cohort would experience a decrease of 12.3 percentage points in his or her projected replacement rate, whereas a hypothetical high earner of the same birth cohort would experience a decrease of 12.3 percentage points in his or her projected replacement rate.

Table 7 also shows how the 2010 birth cohort would be affected by a change to pure price indexing. As expected, the 2010 birth cohort would experience lower replacement rates than the 1985 birth cohort would. For instance, a medium earner in the 2010 birth cohort is estimated to see a decrease in PIA of 35.5% under a switch to pure price indexing. This lower PIA results in a decrease of 15.9 percentage points in the corresponding replacement rate. The benefit formula's progressivity results in a larger decrease in replacement rates for relatively lower career average earners, similar to the 1985 birth cohort.

Birth Cohort	Hypothetical Earnings Level	Change in AIME	Change in PIA	Change in Replacement Rate
	Very Low Earner	0.0%	0.0%	0.0 рр
	Low Earner	0.0%	0.0%	0.0 рр
1960	Medium Earner	0.0%	0.0%	0.0 рр
	High Earner	0.0%	0.0%	0.0 рр
	Maximum Earner	0.0%	0.0%	0.0 рр
	Very Low Earner	0.0%	-14.7%	-12.3 рр
	Low Earner	0.0%	-14.7%	-8.9 рр
1985	Medium Earner	0.0%	-14.7%	-6.6 рр
	High Earner	0.0%	-14.7%	-5.5 рр
	Maximum Earner	0.0%	-14.7%	-4.3 pp
	Very Low Earner	0.0%	-35.5%	-29.6 рр
	Low Earner	0.0%	-35.5%	-21.5 рр
2010	Medium Earner	0.0%	-35.5%	-15.9 рр
	High Earner	0.0%	-35.5%	-13.2 рр
	Maximum Earner	0.0%	-35.5%	-10.4 рр

Table 7. Pure Price-Indexing: Change in Average Indexed Monthly Earnings (AIMEs),Primary Insurance Amounts (PIAs), and Replacement Rates by Birth Cohort andHypothetical Earnings Levels

Effective in 2035

Source: CRS.

Notes: CRS calculations based on hypothetical earner profiles developed by OCACT. Calculations assume scheduled benefits paid under the 2024 intermediate assumptions and current law. Replacement rate is measured as a worker's PIA divided by the worker's AIME.

The findings of the same changes in PIAs across earnings groups in **Table 7** are reinforced by CBO analysis from 2015 that used different measures for earnings groups. Specifically, CBO found that the mean initial benefit for retired workers would decrease by the same amount for retired workers from the low and middle quintiles of lifetime household earnings and by a similar, albeit marginally smaller, amount for retired workers from the highest quintile of lifetime household earnings. Moreover, CBO found that pure price indexing would increase these differences over time.⁷⁵ CBO finds that "the reductions to initial benefits would be smaller during periods of slower real wage growth and larger when real wages grew more quickly."⁷⁶ Because initial scheduled benefits would decline over time under this option, CBO estimates that this would improve the actuarial balance by 80%.⁷⁷ CBO estimates that pure price indexing would not significantly change the trust fund depletion date, but it would increase the amount of benefits payable at the point of trust fund depletion. A more recent (2023) estimate from OCACT found

⁷⁵ CBO, Social Security Policy Options, Table 3, Option 18, pp. 30-35.

⁷⁶ CBO, Social Security Policy Options, p. 53.

⁷⁷ CBO, Social Security Policy Options, p. 55.

that a change to pure price indexing would eliminate 80% of the program's projected financial shortfall.⁷⁸

Although a change to pure price indexing would improve the financial status of the program, it would also result in an "across-the-board proportional benefit reduction for each birth cohort, with the proportional reduction becoming even larger for successive birth cohorts."⁷⁹ Past analysis found that a change to pure price indexing would keep the purchasing power of initial benefits constant while reducing replacement rates.⁸⁰ At the effective date of the policy change—2035 in this report's analysis—pure price indexing would essentially *freeze* purchasing power at 2035 levels rather than increase it for successive birth cohorts, as is done under current law. Replacement rates would decrease over time because, under a shift to pure price indexing, the benefit formula would not reflect growth in economy-wide earnings. Although this change would improve the system's financial status, it would also result in an increase in the poverty rate for older Americans.⁸¹

A change to pure price indexing would, in some ways, undo many of the changes that Congress made in the 1970s. Since those changes, initial average benefit amounts have increased with increases in overall economy-wide average wages. Thus, initial benefits have supported a relative level of consumption. By freezing benefit growth, initial benefits would support only a base level of consumption at 2035 levels.

Increasing savings over time from pure price indexing is highlighted in **Figure 16** and **Figure 17**, which show PIAs and replacement rates under current law and a change to pure price indexing for all birth cohorts from 1960 through 2010. The dashed lines, representing the policy change, show PIAs—in constant 2024 dollars—being frozen after the effective date. As shown, the longer such a policy change is in effect, the larger the relative difference with scheduled benefits under current law. Pure price indexing would result in a lower replacement rate for each successive birth cohort.⁸²

⁷⁸ OCACT, *Summary of Provisions That Would Change the Social Security Program*, September 27, 2023, p. 6, https://www.ssa.gov/OACT/solvency/provisions/summary.pdf.

⁷⁹ U.S. Department of Treasury, *Social Security Reform: Strategies for Progressive Benefit Adjustments*, September 2007, p. 7, https://www.govinfo.gov/content/pkg/GOVPUB-T-PURL-LPS118889/pdf/GOVPUB-T-PURL-LPS118889.pdf.

⁸⁰ Mark A. Sarney, "Distributional Effects of Price Indexing Social Security Benefits," *Social Security Bulletin*, vol. 2010, no. 3, p. 2.

⁸¹ Sarney, "Distributional Effects of Price Indexing," p. 4.

⁸² Kilolo Kijakazi and Robert Greenstein, *Replacing "Wage Indexing" with "Price Indexing" Would Result in Deep Reductions Over Time in Social Security Benefits*, Center on Budget and Policy Priorities, December 14, 2001, p. 2, https://www.cbpp.org/sites/default/files/archive/12-10-01socsec.htm.

Figure 16. Price-Indexed Bend Points: Scheduled and Proposed Primary Insurance Amounts by Earnings Levels and Birth Cohorts, 1960-2010



In 2024 Dollars (Under Intermediate Assumptions)

Source: CRS.

Notes: Dollar amounts are adjusted to 2024 dollars using the CPI indexing series in Table VI.G6 of the 2024 *Annual Report.*

Figure 17. Price-Indexed Bend Points: Scheduled and Proposed Replacement Rates by Earnings Levels and Birth Cohorts, 1960-2010



Under Intermediate Assumptions

Source: CRS.

Notes: Replacement rates are calculated as the primary insurance amount (PIA) divided by average indexed monthly earnings (AIME).

Selected Policy Considerations

This section highlights selected issues that may arise from including more price-indexed mechanisms in the Social Security benefit calculation. First, this section addresses the possibility of price growth outpacing wage growth. Second, the effects of changes in the benefit formula across time are discussed, including how different birth cohorts may be affected (i.e., notch effects and transition periods, discussed below). Third, the effects of changes in the benefit formula across income levels are discussed. A key theme in this report's analysis is how workers of various ages and income levels may be affected in different manners by the shift from wage indexing to price indexing. Next, the section compares the effect of each of the analyzed selected policy options on the projected rate of benefit growth. Finally, the section concludes with a discussion on considerations related to reductions in scheduled versus payable benefits.

Projected Wage and Price Growth

As discussed in "Wage and Price Growth: Relevance for Social Security Indexing," wage growth has typically outpaced price growth. The Social Security Board of Trustees and CBO project this trend to continue. The Social Security Board of Trustees—which oversees the financial operations of the trust funds—projects that growth in average nominal wages will continue to outpace growth in the CPI in the future. According to the trustees' intermediate assumptions⁸³ (i.e., their best estimate for the future experience), the annual percentage change in average nominal, covered wages will be 4.17% over the next 10 years.⁸⁴ Over the remainder of the 75-year projection period,⁸⁵ the trustees project the annual percentage change in average prices to be 3.64%.⁸⁶ Thus, the trustees project that wage growth will be *more* than price growth for every year over the 75-year projection period.

CBO also projects nominal wage growth to outpace price growth. In its *2023 Long-Term Budget Outlook*, CBO projects that price growth would be 4.8% in 2023 and 3.0% in 2024 before averaging 2.2% from 2025 through 2053.⁸⁷ CBO projects that the growth in real earnings (i.e., inflation-adjusted) per worker would be 0.4% in 2023 and 1.2% in 2024 before averaging 1.0% from 2025 through 2053.⁸⁸ This estimate implies projected growth in nominal wages of about 5.2% in 2023 and 4.2% in 2024 and an average of 3.2% from 2025 through 2053.⁸⁹

⁸³ To help illustrate the uncertainty, the trustees use three different sets of assumptions in their annual reports. The intermediate projections represent the trustees' best estimate, while the low-cost and high-cost scenarios help to present a range of possible outcomes. To accomplish this range, all assumptions are presumed to be either advantageous or disadvantageous to the financial position of the trust funds.

⁸⁴ 2024 Annual Report, pp. 111-112.

⁸⁵ For a discussion on projection periods, see CRS In Focus IF11851, *Social Security Long-Range Projections: Why 75 Years?*

⁸⁶ 2024 Annual Report, pp. 111-112.

⁸⁷ CBO, *The 2023 Long-Term Budget Outlook*, June 23, 2023, https://www.cbo.gov/publication/59014. See also the accompanied *Long-Term Economic Projections*. For projections of price growth, CBO used the CPI-U.

⁸⁸ CBO, The 2023 Long-Term Budget Outlook.

⁸⁹ Projections from the Office of Management and Budget (OMB), as well as non-governmental sources (i.e., S&P Global and Moody's Analytics) also project an implied growth rate in nominal wages that would outpace growth in prices. Office of the Chief Actuary, Social Security Administration, *The Long-Range Economic Assumptions for the* (continued...)

However, as shown in **Figure 1**, instances may arise in which price growth outpaces wage growth. There are many options to address this possibility. For instance, the recommendations of the Second Hsiao Panel in 1977 included a provision that, should price growth outpace wage growth for an extended period of time, benefits would then be adjusted to wage growth.⁹⁰ This provision would guarantee that benefits would grow by whichever index increased by the smallest amount.

Notch Effects and Transition Periods

Any of the four proposals analyzed in this report would result in what is commonly referred to as a *notch effect*. A notch effect occurs when one cohort of beneficiaries receives a different level of benefits compared to an age-adjacent cohort. One example of a notch effect was experienced by Social Security beneficiaries born between 1917 and 1921. Changes to the benefit formula in the Social Security Amendments of 1972 were intended to automatically adjust benefits for inflation. However, as discussed, the changes resulted in over-indexing and generally increasing benefits for new *and* current beneficiaries. Changes to the benefit formula in the Social Security Amendments of 1977 decreased the initial Social Security benefit calculation for some retirees relative to what would have been calculated under the 1972 amendments. As a result, many of the beneficiaries born between 1917 and 1921 believe they did not receive fair benefits compared with beneficiaries born in earlier years.⁹¹

Many past proposals realized the potentially adverse effect that a notch would have on beneficiaries. For instance, older workers—those relatively closer to claiming benefits—would have less time to adjust behavior (e.g., increase savings or continue working) relative to younger workers. Therefore, some proposals included transitional periods wherein older workers would receive a *blend* of benefits. For instance, the Second Hsiao Panel in 1977 recommended an approach where older workers would receive some percentage of benefits computed under the current law and some percentage of benefits computer under their proposal.⁹² The percentage of benefits calculated under the proposal would increase for each successive birth cohort until eventually all benefits would be computed under the proposal.

Effects on Low-Earning Workers

Social Security benefits are primarily based on a worker's covered earnings. In addition to stable replacement rates and progressivity, the benefit formula also ensures *individual equity*. That is, low earners receive relatively lower benefits compared to higher earners. Each of the price-indexing methods analyzed in this report maintains individual equity while decreasing benefits levels relative to current law. This approach may have an adverse effect on low-earning workers.

Social Security is the largest source of income among the aged. This is especially true for lowearning workers. In fact, in the bottom quintile of earners, Social Security benefits accounted for

²⁰²⁴ Trustees Report, May 6, 2024, https://www.ssa.gov/OACT/TR/2024/2024_Long-Range_Economic_Assumptions.pdf, see sections 2.6 and 3.4.

⁹⁰ Second Hsiao Panel, p. 18. A similar provision exists under current law. The Social Security Amendments of 1983 included a provision that for years after 1988 if the trust fund ratio—defined as the value of asset reserves at the beginning of a year divided by the program's projected cost for that year—falls below 20%, then the COLA would be based on the annual percentage change of CPI or wages, whichever was lower. See 415 U.S.C. §(i)(1)(C).

⁹¹ James W. Kelley and Joseph R. Humphreys, "Congressional Intent Concerning the 'Notch' Issue: Legislative Background of the 1977 Social Security Amendments," SSA, December 1994, https://www.ssa.gov/history/ notchfile3.html.

⁹² Second Hsiao Panel, pp. 21-22.

83% of aggregate income.⁹³ One way to preserve benefits for low-earning workers would be to *progressively* price index benefits. Such a method would essentially maintain the current-law benefit calculation for low-earning workers while applying elements of price indexing in the benefit calculation for high-income workers.⁹⁴ This method could be accomplished in many ways, such as changing a specific replacement rate⁹⁵ or bend point.⁹⁶

Rates of Benefit Growth Under Current Law and Price Indexing

Assuming the trend of wage growth outpacing price growth continues, any of the policy options analyzed in this report would result in lower scheduled PIAs (i.e., basic monthly benefits) relative to those scheduled under current law. However, the analyzed options result in different *rates of growth* in PIAs. Policymakers may be concerned with this outcome, as some methods of price indexing would result in overall benefit reductions—relative to current law—that increase over time even as the Social Security program's financial status would be improving.

Figure 18 shows the rate of growth in PIAs under current law and under the four price-indexing options: (1) price-indexed earnings, (2) price-indexed bend points, (3) price-indexed earnings and bend points, and (4) pure price indexing. For a policy effective in 2035—the projected year of trust fund depletion—**Figure 18** shows how the 1973 birth cohort would be the first cohort to be affected by a policy change. Under current law, PIAs are projected to grow at about 3.5% annually, similar to the long-range intermediate assumption for wage growth.

Under a policy change to a price-indexed earnings history, the growth rate would slow compared to current law but would eventually return to wage-indexed levels. Specifically, once all birth cohorts, starting with the 1973 cohort, are converted to price-indexed earnings histories, then PIAs would reflect the growth in wages (as that is the rate at which bend points would continue to be adjusted). A change to price-indexed bend points would eventually shift the growth rate in PIAs to about 2.8%, which falls between the long-range projections of wage and price growth (3.5% and 2.4%, respectively). A policy change to price-indexed earnings and bend points would combine those two results. Under pure price indexing, projected growth in PIAs would be 2.4%, which is the long-range assumption for price growth. Thus, on a price-indexed basis, the pure price indexing options would result in no growth in benefits from one year to the next (see Figure 16).

⁹³ For more information on income for older workers, see CRS Report R47341, *Income for the Population Aged 65 and Older: Evidence from the Health Retirement Study (HRS).*

⁹⁴ This would eventually lead to smaller and smaller differences between relatively higher earners and relatively lower earners. Unlike the policy changes analyzed in this report, a progressive price-indexing approach would discontinue the notion of *individual equity* in the benefit formula. See Jason Furman, *An Analysis of Using "Progressive Price Indexing" to Set Social Security Benefits*, Center on Budget and Policy Priorities, May 2, 2005, pp. 2-7, https://www.cbpp.org/research/an-analysis-of-using-progressive-price-indexing-to-set-social-security-benefits.

⁹⁵ Such a provision was included in the Sustainable Solvency First for Social Security Act of 2006 (109th Congress; S. 2427). Similarly, the National Commission on Retirement Policy proposed, among other policies, multiplying the replacement rates of 32% and 15% by 0.98 for the years 2001 to 2020. National Commission on Retirement Policy, 21st *Century Retirement Security Plan*, March 1999, pp. 38-40, https://ecommons.cornell.edu/server/api/core/bitstreams/ b5dad73b-6f88-4676-90df-293cd0eedf6a/content.

⁹⁶ See Section 101 of the Social Security Long-Range Solvency Act of 1994 (H.R. 4245; 103rd Congress) introduced by Representative Dan Rostenkowski.

Figure 18. Growth Rate in Primary Insurance Amounts (PIAs) for Hypothetical Medium Earners under Current Law and Selected Price Indexing Options by Birth Cohort



Under Intermediate Assumptions

Source: CRS.

Scheduled and Payable Benefits

Throughout this report, several changes to the current-law benefit formula were analyzed. Each analyzed policy option would include some change to price indexing. Generally, these changes would all result in a decrease in scheduled benefits (i.e., PIAs) relative to current law. Thus, it could be argued that such policy changes would result in reduced benefits. However, some may argue that this is not the appropriate comparison. Rather, some policymakers may argue that the results of policy changes should be compared to what the system would be able to pay. For instance:

Given the current financial shortfall in the program, it is important to compare proposals both to current promised and to funded benefits.... There are a lot of people that want to compare Social Security reform proposals just to promised benefits. That is fundamentally flawed and unfair, because all the promised benefits are not funded.⁹⁷

Under current law, the trustees project that Social Security benefits will not be paid in full starting sometime in 2035, the projected year of trust fund depletion. At the point of trust fund depletion, continuing revenues are projected to support about three-fourths of scheduled benefits. Thus, if lawmakers were to take no action, Social Security benefits would face a *de facto* reduction of about 25%.⁹⁸ Many of the price indexing options would result in decreased scheduled benefits relative to *payable*

⁹⁷ Remarks by General Accounting Office Director David M. Walker during U.S. Congress, House Budget Committee, *Social Security: The Long-Term Budget Implications*, 107th Cong., 2nd sess., June 19, 2002, p. 107-32.

⁹⁸ For more information on scheduled and payable benefits, see CRS In Focus IF12231, *Social Security: Scheduled Versus Payable Benefits*.

benefits (i.e., the level of benefits supported by tax revenues at the point of trust fund depletion) is larger.

Conclusion

Under current law, initial Social Security benefits are indexed to the growth in average wages. A change to the indexation method of any part of the benefit formula—earnings histories, bend points, or replacement factors—from wages to prices is one type of policy option that could help improve the program's financial status by reducing the growth in average benefits. Any reduction in Social Security benefits may have significant implications for workers with low lifetime average earnings, who are more likely to depend primarily on Social Security as a source of retirement income. Reductions in worker benefits may also have compounding effects, as auxiliary benefits paid to family members are based on the worker's PIA.⁹⁹ As with other proposals related to Social Security solvency, provisions that reduce costs could be combined with provisions that increase revenue.

⁹⁹ See "Maximum Family Benefit," in CRS Report R42035, Social Security Primer.

Appendix. Development of the Social Security Benefit Formula: A Policy and Proposal Review

The processes used to calculate Social Security retired-worker benefits have changed over time. The initial benefit formulas lacked an indexing mechanism. Without this mechanism, Congress routinely passed ad hoc legislation to ensure that benefits provided an adequate level of support for retired workers. As the national economy changed, this process became more challenging. Consequently, in the 1970s, Congress sought to add indexing characteristics to the benefit computation process. Because of unintended effects from these changes, and the worse-than-expected economic experience of the late 1970s, the benefit computation process was fundamentally changed to a wage-indexed formula.

Some past efforts, however, sought to implement a different indexing formula. Past panels and proposals suggested an indexing system that relied more on price indexing. In addition to maintaining real, inflation-adjusted benefit levels, more price indexing would likely lead to lower long-run program costs. Specifically, some have argued that changing economic and demographic conditions cannot support the level of benefits (i.e., cost) that results from the current-law wage-indexed system.

This appendix describes how the benefit computation process changed from the initial *ad hoc* system to the current *wage-indexed* system. Additionally, this appendix highlights several benefit computation proposals that would have altered the current indexing procedures.

The Benefit Formula Under the Social Security Act

The Social Security Act, passed by Congress in 1935, set the payment of monthly retired-worker benefits to begin in 1942. At the time, monthly payments were calculated to reflect a worker's total cumulative wages from covered employment.¹⁰⁰ This method of benefit calculation favored workers with longer earnings histories. For instance, if one worker earned \$50,000 per year for 20 years (\$1,000,000 in total cumulative wages), while a second worker earned \$50,000 per year for 30 years (\$1,500,000 in total cumulative wages), the latter worker would receive a higher benefit, although his or her average annual wages were identical to those of the former worker. Under the law, a worker's monthly benefit would have been 0.5% of a worker's first \$3,000 in cumulative wages plus 1/12 of 1% of the worker's next \$42,000 in covered earnings plus 1/24 of 1% of a worker's next \$84,000 in cumulative earnings.¹⁰¹ Before monthly payments began, however, Congress passed the Social Security Act Amendments of 1939 that, among other provisions, changed the benefit calculation.

Changes to the Original Formula

The 1939 amendments linked retired-worker benefits to a worker's average monthly wages. Under the new formula, a worker's benefit would have been 40% of the first \$50 in average monthly wage plus 10% of the next \$200 in average monthly wages.¹⁰² With this change, workers with the same average monthly wages would have received the same basic monthly benefit amount. For instance, under the example used in the prior section, each worker would have

 ¹⁰⁰ Larry DeWitt, "The Development of Social Security in America," *Social Security Bulletin*, vol. 70, no. 3 (2010).
 ¹⁰¹ Robert J. Myers, "Old-Age and Survivors Insurance: History of the Benefit Formula," *Social Security Bulletin*, May 1955, p. 13.

¹⁰² Myers, "Old-Age and Survivors Insurance."

received the same basic monthly benefit even though the second worker had more years in total cumulative earnings. To compensate workers with long durations in covered employment, the basic monthly benefit was increased by 1% for each year of coverage.¹⁰³

Under the law, benefit amounts were not adjusted for cost-of-living changes. The benefit amount calculated under the formula was what retired workers could expect for the rest of their lives. Without increases to monthly benefits, the purchasing power of benefits decreased over time. The Social Security Act Amendments of 1950 addressed the relatively low level of benefits, among other things. The new benefit formula calculated monthly benefits as 50% of the first \$100 in average monthly wage plus 15% of the next \$200 in average monthly wages.¹⁰⁴ Although this change did provide for a higher level of benefits, it did not address the loss of beneficiaries' purchasing power. Congressional action was needed to raise monthly Social Security benefits. Specifically, ad hoc legislation was needed to provide COLAs for existing beneficiaries and to increase initial benefit levels for future beneficiaries. For instance, the Social Security Act Amendments of 1952 changed scheduled monthly benefits to reflect 55% of the first \$100 in average monthly wage plus 15% of the next \$200 in average monthly wages. Not long after, the Social Security Amendments of 1954 revised benefit calculation to be 55% of the first \$110 in average monthly wages plus 20% of the next \$240 in average monthly wages. Table A-1 demonstrates how this formula worked for a hypothetical worker with an average monthly wage of \$500. Table A-1 also highlights how this changed a hypothetical retired worker's replacement rate as new legislation was enacted.¹⁰⁵

To keep benefit levels in line with changes in the cost of living, Congress continued to pass ad hoc legislation intended to increase benefit levels that added new brackets of average monthly wages and the rate at which those brackets were replaced. For example, the Social Security Amendments of 1958 (P.L. 85-840), effective for benefits payable in January 1959, increased replacement factors, whereas the Social Security Amendments of 1964 (P.L. 87-64), effective for benefits paid in January 1965, established a new bracket (\$400.01-\$550.00) and increased replacement factors.¹⁰⁶ Under this method, there was no indexing involved in any parameters used to calculate benefits.

¹⁰³ Lyle L. Schmitter and Betti C. Goldwasser, "The Revised Benefit Scheduled Under Federal Old-Age Insurance," *Social Security Bulletin*, vol. 2, no. 9 (1939).

¹⁰⁴ Wilbur J. Cohen and Robert J. Myers, "Social Security Act Amendments of 1950: A Summary of Legislative History," *Social Security Bulletin*, October 1950.

¹⁰⁵ This section's analysis assumes that the hypothetical retired worker had average monthly wages (AMW) or average indexed monthly earnings (AIME) of \$500. This assumption is used to highlight the benefit calculation process and the resulting replacement rate. For a comparison of past replacement rates for hypothetical earners of various earnings levels, see Robert J. Myers, "Development of OASDI," in *Social Security*, p. 363.

¹⁰⁶ For more information on historical changes to AMW brackets and replacement factors, see Table 2.A16 in SSA, *Annual Statistical Supplement*, 2018, https://www.ssa.gov/policy/docs/statcomps/supplement/2018/2a8-2a19.html#table2.a16.

Average Monthly Wage (AMW)	Benefits Payable April 1952	Benefits Payable Sept. 1952	Benefits Payable Sept. 1954	Benefits Payable Jan. 1959	Benefits Payable Jan. 1965
\$0-\$110.00	50.00%ª	55.00%ª	55.00%	58.85%	62.97%
110.01-400.00	15.00 ^b	15.00 ^b	20.00 ^c	21.40	22.90
400.01-550.00					21.40
PIA of a Hypothetical Earner with AMW of \$500.00 ^d	\$80.00	\$85.00	\$108.50	\$126.80	\$157.10
Replacement Rate	16.0%	17.0%	21.70%	25.4%	31.4%

Table A-1. Social Security Retired-Worker Benefits and Replacement Rates Under Selected Laws (1952-1965): Brackets of Average Monthly Wages, Replacement Rates, and Hypothetical Primary Insurance Amounts (PIAs)

Source: Social Security Administration, Annual Statistical Supplement, 2018, p. Table 2.A.16, https://www.ssa.gov/policy/docs/statcomps/supplement/2018/2a8-2a19.html#table2.a16.

Notes: Replacement rate is calculated as PIA divided by average monthly wage (i.e., \$500.00).

- a. Applied to first \$100.00 of AMW.
- b. Applied to next \$200.00 of AMW.
- c. Applied to next \$190.00 before 1955 and to next \$240.00 effective for January 1955.
- d. Benefit formulas using AMWs to calculate PIAs were rounded to the next highest multiple of \$0.10.

This method of benefit calculation resulted in discrepancies between benefit increases and the actual amount of inflation (i.e., how much a beneficiary's purchasing power was degraded), as shown in **Figure A-1**. **Figure A-1** shows that in some years inflation was relatively high and there was no increase in benefits (e.g., 1947), whereas in other years benefits increased by relatively larger amounts but inflation was relatively low (e.g., 1950). Over the 1940-1974 period—before automatic COLAs were payable—the cumulative increase in benefits was 391%, but inflation had increased by only 252%.¹⁰⁷

¹⁰⁷ Larry DeWitt, "The Development of Social Security in America," Social Security Bulletin, vol. 70, no. 3 (2010).



Figure A-1. Comparison of Increases in Social Security Retired-Worker Benefits and Inflation

Source: Larry DeWitt, "The Development of Social Security in America," *Social Security Bulletin*, vol. 70, no. 3 (2010), Table 5.

Notes: Inflation is based on the CPI-W, not seasonally adjusted.

During periods of high inflation (i.e., larger-than-average increases in the price index), the purchasing power of beneficiaries could be substantially degraded.¹⁰⁸ To prevent this outcome, Congress would need to continue to pass legislation. Increasing the number of brackets and their respective replacement rates (i.e., the amount of pre-retirement earnings replaced by benefits) resulted in a benefit increase for both current and future beneficiaries. This method of benefit calculation *coupled* the effects of average wage growth and average price growth. So long as wage and price growth remained relatively stable, this method (i.e., ad hoc legislation to maintain purchasing power) kept initial benefits aligned with wage growth and current benefits aligned with price growth.¹⁰⁹ However, the economic conditions experienced in the 1970s (i.e., inflation) led to higher-than-expected benefits for future beneficiaries, thereby creating higher-than-expected program costs. Congress made several changes in subsequent years to address issues stemming from this coupling.

Social Security Amendments of 1972¹¹⁰

The Social Security Amendments of 1972 (P.L. 92-603) shifted away from increasing benefits only through ad hoc legislation. Among other provisions, the 1972 amendments increased Social Security benefits by an average of 20% and provided for future automatic COLAs when the CPI

¹⁰⁸ However, without allowing future wage or price increases to affect benefit levels—that is, unless Congress acted—the long-range costs of the Social Security program (i.e., aggregate benefits paid) were well known.

¹⁰⁹ Larry DeWitt, Daniel Beland, and Edward Berkowitz, *Social Security: A Documentary History* (Thousand Oaks, CA: SAGE Publications, 2008), p. 286.

¹¹⁰ In 1972, Congress also passed a Social Security benefit increase (P.L. 93-233). Because these laws were both enacted in 1972, they are sometimes referred to as the Social Security Amendments of 1972 on a *combined* basis.

rose by more than 3.0%.¹¹¹ The amendments also added another earnings bracket to the formula each time the amount of earnings subject to the Social Security payroll tax was increased (i.e., taxable maximum). Additionally, the amendments required the PIA replacement factors in the formula for calculating initial benefits for new beneficiaries to be increased by the same percentage as the CPI increase whenever an increase in the taxable maximum was triggered.¹¹²

In 1972, inflation was at a relatively low rate (3.4%) and was projected to decline,¹¹³ but instead inflation increased to 6.2% in 1973 to 11.1% in 1974.¹¹⁴ The automatic increases that were part of the 1972 amendments made the benefit calculations more sensitive to changes in the relationship between wages and prices. These automatic increases produced higher benefits for future beneficiaries and also increased program costs. As Larry DeWitt, Daniel Beland, and Edward Berkowitz note in *Social Security: A Documentary History*:

As the economics of the 1970s produced disruptions in the historic relationship between prices and wages, this had an adverse effect on Social Security benefits. In a period of stagflation, overall program costs soared and initial benefit levels for future beneficiaries rose much higher than planned.¹¹⁵

In the 1970s, there were several years in which the rate of increase in prices exceeded the rate of increase in wages. Because the 1972 amendments increased the PIA factors by the rate of price growth, benefits grew faster than the wage base (from which these benefits would be financed) whenever prices grew faster than wages. The changes implemented under the 1972 amendments caused benefits—and replacement rates—to grow faster than anticipated. New brackets would have been routinely added and replacement factors routinely increased, as shown in **Table A-2**.

Table A-2 demonstrates how this formula worked for a hypothetical worker with select average monthly wages. Under this law, a worker could have expected increasing benefits and increasing replacement rates. The adjustments to benefit computation under the 1972 amendments could, under a sustained period of high price growth, lead to a situation in which a beneficiary's replacement rate could exceed 100% for workers with average monthly wages at or under \$110 per month. Thus, during the late 1970s—generally regarded has a high-inflation period—a retired worker may have received more in benefits than his or her pre-retirement earnings. Because of this and the deteriorating economic conditions of the late 1970s, Congress sought to pass new legislation.

¹¹¹ Under the 1972 amendments, the first automatic COLAs were scheduled to occur in 1975. At the time, there was only one CPI measure. When the Social Security Amendments of 1972 were passed, the CPI-W was known as the CPI (see Stephen B. Reed and Kenneth J. Stewart, "Why Does BLS Provide Both the CPI-W and CPI-U?," Bureau of Labor Statistics, February 2014, https://www.bls.gov/opub/btn/volume-3/why-does-bls-provide-both-the-cpi-w-and-cpi-u.htm). P.L. 92-603 is also referred to as the Social Security Amendments of 1972.

¹¹² Robert M. Ball, "Social Security Amendments of 1972: Summary and Legislative History," *Social Security Bulletin*, March 1973. To help offset the cost of automatic COLAs, the 1972 amendments included a provision to provide automatic increases in the contribution and benefit base (i.e., the taxable maximum).

¹¹³ James Kelley and Joseph Humphreys, *Final Report on the Social Security 'Notch' Issue*, Commission on the Social Security "Notch" Issue, Appendix, 1994, https://www.ssa.gov/history/notchbase.html.

¹¹⁴ For historical data on the CPI, see Federal Reserve Bank of Minneapolis, "Consumer Price Index, 1913-," https://www.minneapolisfed.org/about-us/monetary-policy/inflation-calculator/consumer-price-index-1913-.

¹¹⁵ DeWitt, Beland, and Berkowitz, *Social Security: A Documentary History*, p. 20. Stagflation exists when an economy experiences both high inflation and high unemployment. The U.S. economy experienced such conditions during the 1970s. For more information on stagflation, see CRS Report R41656, *Changing the Federal Reserve's Mandate: An Economic Analysis.*

Average Monthly Wage (AMW)	Benefits Payable Sept. 1972	Benefits Payable June 1974	Benefits Payable June 1975	Benefits Payable June 1976	Benefits Payable June 1977
\$0-\$110.00	108.01%	119.89%	129.48%	137.77%	145.90%
110.01-400.00	39.29%	43.61%	47.10%	50.10%	53.06%
400.01-550.00	36.71%	40.75%	44.01%	46.82%	49.58%
550.01-650.00	43.15%	47.90%	51.73%	55.05%	58.30%
650.01-750.00	24.00%	26.64%	28.77%	30.61%	32.42%
750.01-1,000.00	20.00% ^a	22.20%	23.98%	25.51%	27.02%
1,000.01-1,175.00		20.00% ^b	21.60%	22.98%	24.34%
1,175.01-1,275.00			20.00%	21.28%	22.54%
1,275.01-1,375.01				20.00%	21.18%
Primary Insurance Amount (PIA) of a Hypothetical Earner with AMW of \$500.00 ^c	\$258.70	\$287.20	\$323.10	\$343.70	\$364.00
Replacement Rate	51.7%	57.4%	64.6%	68.7%	72.8%

Table A-2. Social S	Security Re	tired-Worker	Benefits and	Replacement	Rates Under
Selected Law ((1972-1977)	: Percentages	of Average N	1 onthly Wages	Replaced

Source: Social Security Administration, Annual Statistical Supplement, 2018, p. Table 2.A.16, https://www.ssa.gov/policy/docs/statcomps/supplement/2018/2a8-2a19.html#table2.a16.

Notes: Replacement rate is calculated as PIA divided by average monthly wage (i.e., \$1,000.00).

a. Applied to next \$150.00 before 1974 and to next \$350.00 effective for January 1974.

- b. Applied to next \$100.00 before 1975.
- c. Benefit formulas using AMWs to calculate PIAs were rounded to the next highest multiple of \$0.10.

The First Hsiao Panel and the 1974 Advisory Council

The Social Security's Board of Trustees 1974 Annual Report highlighted the program's worsening actuarial status.¹¹⁶ In response, the Senate Finance Committee appointed a Panel on Social Security Financing directed by Dr. William Hsiao, sometimes referred to as the *First Hsiao Panel*. The panel was appointed to provide the committee with "an expert, independent analysis of the actuarial status of the social security system."¹¹⁷ The panel found that the system's actuarial status was worse than what was estimated in the 1974 trustees' report and attributed the long-range financing problems, in equal measure, to demographic characteristics (i.e., lower-than-projected fertility) and the "nature of the benefit formula."¹¹⁸

The panel found that the benefit formula "responds irrationally to changes in the rate of inflation, and can produce patterns of replacement ratios inconsistent with the generally understood purpose

¹¹⁶ The 1974 annual report estimated an actuarial balance of -2.98% of taxable payroll, whereas the 1973 report estimated an actuarial balance of -0.51% of taxable payroll. Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, *1974 Annual Report*, May 31, 1974, p. 36, https://www.ssa.gov/OACT/TR/historical/1974TR.pdf.

 ¹¹⁷ U.S. Congress, Senate Finance Committee, *Report of the Panel on Social Security Financing*, 94th Cong., 1st sess.,
 February 1975, p. 1, https://www.finance.senate.gov/imo/media/doc/panel.pdf (hereinafter cited as First Hsiao).
 ¹¹⁸ First Hsiao, p. 2.

of the social security system."¹¹⁹ Specifically, the panel cited two problems: (1) the benefit formula was "hypersensitive" to inflation such that small changes in inflation could lead to large changes in replacement ratios, and (2) the benefit formula could result in replacement ratios exceeding 100%. The panel recommended, among other proposals, that the method of indexing benefits after retirement should be adjusted to more closely reflect inflation.

At the same time, the Quadrennial Advisory Council on Social Security came to a similar conclusion but offered a different policy recommendation.¹²⁰ In its final report, the council wrote, "The provisions of present law for computing average monthly earnings, on which benefits are based, and for adjusting the benefit table in the law to changes in prices may result over the long range in unintended, unpredictable, and undesirable variations in the level of benefits."¹²¹ The council recommended that benefit calculation should be revised so that initial benefits reflect average earnings and then be indexed for increases in price levels. This recommendation would decouple the effects of wage growth and price growth in benefit computation.

The Second Hsiao Panel

In 1975, Senate Finance Committee Chair Russell Long and House Committee on Ways and Means Chair Al Ullman requested CRS to convene a panel of consultants to "develop and analyze various alternatives formulae for the calculation of future benefit amounts under an actuarially sound" Social Security program.¹²² The panel was once again directed by Dr. Hsiao and is sometimes referred to as the *Second Hsiao Panel*.

The panel researched five alternatives to the 1972 benefit formula: (1) a flat benefit formula, (2) a money purchase plan, (3) a "High-5" plan, (4) a wage-indexed formula, and (5) a price-indexed formula.¹²³ The panel's final report largely focused on the wage-indexed formula—in which each year of a worker's earnings are adjusted proportionately to the average wages of all workers in the program—and the price-indexed formula—in which each year of a worker's earnings are restated in terms of their purchasing power.¹²⁴ The panel's final recommendation included a proposal that retirement benefits continue to be increased automatically after retirement for changes in prices and a proposal for a benefit formula in which (1) a worker's AIME would be calculated using earnings indexed by the CPI and (2) the PIA would be calculated using bend points indexed by the CPI (see **Table A-3**).¹²⁵ In this way, the panel recommended a *price-indexed* formula.

 Table A-3. Second Hsiao Panel Recommended Benefit Formula Using Price Indexing

 For Retirement at Age 65 in Late 1976 or Early 1977

Replacement	Average Indexed Monthly Earnings	Hypothetical Worker with AIME of
Factor	(AIME)	\$500
80%	of the first \$200, and	\$160.00 (80% of \$200)

¹¹⁹ First Hsiao, p. 3. The panel defined *replacement ratio* as "the ratio of the benefit award at retirement to the worker's earnings just before retirement."

¹²⁵ Second Hsiao, pp. 17-18.

¹²⁰ Starting in 1998, the Social Security Advisory Board replaced advisory councils.

¹²¹ "Quadrennial Advisory Council on Social Security: Summary of Major Findings and Recommendations," *Social Security Bulletin*, August 1975, pp. 31-32.

¹²² Second Hsiao, p. iv.

¹²³ Second Hsiao, p. 15.

¹²⁴ Second Hsiao.

Replacement Factor	Average Indexed Monthly Earnings (AIME)	Hypothetical Worker with AIME of \$500
35%	of AIME over \$200 and through \$600 (if any), plus \$90, and	\$195.00 ([35% of (\$500-\$200)] + \$90)
25%	of AIME over \$600 (if any), plus \$150	\$0.00
Primary Insurance Amount (PIA) = Sum of Components		PIA = \$355.00 (\$160.00 + \$195.00 + \$0.00)
Replacement Rate		71.0%

Source: CRS, Report of the Consultant Panel on Social Security to the Congressional Research Service, August 1976, pp. 17-18, https://www.finance.senate.gov/imo/media/doc/report.pdf.

Notes: Under the proposal, a worker's AIME would have been calculated by indexing a worker's covered earnings using the CPI. Additionally, the bend points (i.e., \$200 and \$600) and other dollar amounts (i.e., \$90 and \$150) would also have been indexed to the CPI. The replacement factors (i.e., 80%, 35%, and 25%) would have been fixed and not indexed.

At the time, the panel recognized that benefits would rise only as fast as consumer prices, which would cause average replacement rates to decline over time.¹²⁶ The panel highlighted two effects of the price-indexing formula. First, benefits for already-retired workers would continue to be protected against loss of purchasing power. Second, the purchasing power of future beneficiaries would increase. However, the replacement ratio—the benefit measured as a percentage of pre-retirement earnings—would decline.¹²⁷ These features of the price-indexed formula are highlighted, in contrast to the panel's wage-indexed formula, in **Figure A-2** and **Figure A-3**. Additionally, this price indexing was thought to result in lower program costs than the current law and other proposals, such as the wage-indexing formula.¹²⁸

¹²⁶ Cogan and Heil, *Social Security Wage Indexing Revisited*, p. 11.

¹²⁷ Second Hsiao, pp. 3-4.

¹²⁸ Kelley and Humphreys, "Congressional Intent."



Figure A-2. Primary Insurance Amounts (PIAs) for Hypothetical Median Income Male Workers

Source: Report of the Consultant Panel on Social Security to the Congressional Research Service, August 1976, pp. 18-19, https://www.finance.senate.gov/imo/media/doc/report.pdf.

Notes: Calculations assume 6% annual rate of increase in wages and 4% in prices.

Figure A-3. Replacement Ratios for Hypothetical Median Income Male Workers





Source: Report of the Consultant Panel on Social Security to the Congressional Research Service, August 1976, pp. 18-19, https://www.finance.senate.gov/imo/media/doc/report.pdf.

Notes: Calculations assume 6% annual rate of increase in wages and 4% in prices.

The Second Hsiao Panel argued that price indexing would maintain the real, inflation-adjusted value of benefit levels while preserving a greater degree of control and flexibility for Congress to

determine whether benefit increases in excess of inflation were appropriate. A second argument was that the price-indexing approach involved a substantially lower long-range cost. The panel's third argument was that the price-indexing approach would allow Congress to provide real increases in benefits for those already on the rolls.¹²⁹ The panel concluded that, under its recommended benefit formula, retirement benefits would be protected against inflation—in contrast to the wage-indexed formula, which would have provided a "sharp tilt" in favor of workers retiring in the future.¹³⁰ Additionally, the panel included a recommendation in the event that the "national wage-level grows more slowly than the price-level for an extended period."¹³¹ If such an event were to occur, benefits would be adjusted only in proportion to wage growth. In effect, benefits would be adjusted to the index—wage or prices—that demonstrated lower growth.

Social Security Amendments of 1977

The debate over how to correct the over-indexing of Social Security benefits continued through 1976 with the support of President Gerald Ford. The debate persisted into 1977 under the Administration of President Jimmy Carter, which also recognized the need for benefit formula reform, in part to slow the growth of benefits and program costs. The Carter Administration put forth a proposal that would *decouple* benefit calculation in a manner similar to the 1974 Advisory Council: a decoupled benefit structure that would calculate initial benefits based on wage-indexed earnings up to the second year before eligibility (age 62) for years of covered work and then index benefits thereafter for increases in prices.

As expected, discussions throughout 1977 were largely focused on price-indexing and wageindexing proposals. An updated price-indexed formula, proposed by Dr. Hsiao, simplified the recommended formula of the Second Hsiao Panel (see **Table A-4**).

	FOR WORKERS FIRST Eligible in 1979				
Replacement Factor	Average Indexed Monthly Earnings (AIME)	Hypothetical Worker with AIME of \$500			
80%	of the first \$250, and	\$200.00 (80% of \$250)			
35%	of AIME over \$250 and through \$750 (if any), and	\$87.50 (35% of [\$500-\$250])			
25%	of AIME over \$750 (if any)	\$0.00			
Primary Insurance Amount (PIA) = Sum of Components		PIA = \$287.50 (\$200.00 + \$87.50 + \$0.00)			
Replacement Rate		57.5%			

Table A-4. Updated Price Indexed Benefit Formula For Marken First Flights in 1970

Source: William Hsiao, "An Optimal Indexing Method for Social Security," in *Financing Social Security* (Washington, DC: 1979), pp. 19-40.

Notes: Under the proposal, a worker's AIME would have been calculated by indexing a worker's covered earnings using the CPI. Additionally, the bend points (i.e., \$250 and \$750) would also have been indexed to the CPI. The replacement factors (i.e., 80%, 35%, and 25%) would have been fixed and not indexed.

Ultimately, Congress chose the wage-indexing proposal that was favored by the Carter Administration, and it became the Social Security Amendments of 1977 (P.L. 95-216). The 1977

¹²⁹ Kelley and Humphreys, "Congressional Intent."

¹³⁰ Second Hsiao, p. 9.

¹³¹ Second Hsiao, p. 18.

amendments essentially designed the current-law benefit formula by establishing a benefit formula that indexes workers' initial benefit levels to wage growth¹³² and then indexes their subsequent benefits to price growth (see **Table A-5**). The new formula *decoupled* the effects of wage growth and price growth on Social Security benefits that were shown to have introduced instability in replacement levels. Decoupling the benefit calculation was also expected to relieve some financial pressure on the system. It was projected that, without decoupling legislation, a worker's future benefits could exceed his or her pre-retirement earnings.¹³³ Indexing initial benefits to more current values has the effect of reducing differences in benefits among workers whose ages and real earnings are similar but whose years of employment differed. Further, indexing future benefits to price growth helps to maintain the purchasing power of Social Security benefits.¹³⁴

Replacement Factor	Average Indexed Monthly Earnings (AIME)	Hypothetical Worker with AIME of \$500
90%	of the first \$180, and	\$162.00 (90% of \$180)
32%	of AIME over \$180 and through \$1,085 (if any), and	\$102.40 (32% of (\$500-\$180))
15%	of AIME over \$1,085 (if any)	\$0.00
Primary Insurance Amount (PIA) = Sum of Components		PIA = \$264.40 (\$162.00 + \$102.40 + \$0.00)
Replacement Rate52.9%		52.9%

Table A-5. Benefit Formula Under Current Law For Workers First Eligible in 1979

Source: CRS.

Notes: Under current law, PIAs are rounded to the nearest dime (42 U.S.C. \$15(a)(1)(A)). Under current law, a worker's AIME is calculated by indexing a worker's covered earnings using the Social Security Administration's Average Wage Index (AWI). This is described in detail in "Social Security Benefit Formula Under Current Law."

In choosing the current-law formula, a paper prepared for the Commission on the Social Security "Notch" Issue noted that:

Congress clearly was aware that the new benefit formula would usually be less generous than the formula it replaced. Congress was also aware that benefit levels for future retirees would tend to grow faster than inflation.... Congress explicitly chose wage indexing over

¹³²SSA's AWI measures average wage growth. SSA uses the national average wage-indexing series to ensure that future benefits reflect the general rise in the standard of living over the course of a worker's earning history. For details, see "Index Earnings Used to Compute Initial Benefits" in OCACT, "National Average Wage Index," https://www.ssa.gov/oact/COLA/AWI.html. The AWI is the average of all workers' wages subject to federal income taxes and contributions to deferred compensation plans. It is calculated using some wages that are not subject to the Social Security payroll tax. For more information on AWI, see CRS In Focus IF11931, *Social Security: The Average Wage Index*.

¹³³ DeWitt, Beland, and Berkowitz, Social Security: A Documentary History, pp. 298-321.

¹³⁴ In eras of increasing overall (i.e., economy-wide) wage growth, expressing past nominal earnings in indexed terms makes workers' earnings who retire in the same year more comparable. Without indexing—instead, using nominal earnings in benefit calculation—the earnings of workers who earned more early in their work histories would be undervalued. For example, during periods of increasing average wages, a worker who worked 35 years, from age 30 to age 65, would likely have higher nominal earnings than a worker who worked 35 years, from age 25 to age 60. Using unindexed earnings would most likely favor the first worker with more recent and higher nominal earnings.

price indexing, knowing that it would cause initial benefit levels to grow so that each year's cohort of retirees would do somewhat better in real terms than the retirees of prior years.¹³⁵

This is evidenced in **Figure A-4**, which shows the PIAs for average workers under the contemporaneous (pre-1977 amendments) law as prescribed in the 1972 amendments as well as under the wage-indexed and price-indexed proposals. **Figure A-4** shows that, as a result of over-indexing, the historical increase in PIAs would continue. The figure also shows how the wage-indexing and price-indexing proposals would slow the growth in PIAs. As expected, and analyzed throughout this report, the price-indexing proposal was projected to slow PIAs by more than the wage-indexing proposal would.

Figure A-4. Projected Primary Insurance Amounts (PIAs) for Average Workers Under Selected Proposals



Source: U.S. Congress, Senate Finance Committee, Staff Data and Materials Relating to Social Security Financing, 95th Cong., 1st sess., June 1977, S.Rept. 95-7, pp. 47-57.

Notes: Estimates are based on the long-range assumptions of 4% price growth and 1.75% growth in real wages (i.e., 5.75% growth in nominal wages). Values were converted into monthly amounts.

Decoupling was also intended to stabilize replacement rates at about 5% below existing (i.e., 1979) levels.¹³⁶ Some have argued that adopting this policy effectively "built a large portion of the flawed [over-indexed] method's impact into benefit levels for all future Social Security recipients."¹³⁷ This is shown in **Figure A-5**, where the over-indexing of the Social Security benefits was projected to result in ever-increasing replacement rates for average workers. Under projections, the wage-indexed proposal was expected to stabilize replacement rates, whereas the price-indexed proposal was expected to result in decreasing replacement rates.

¹³⁵ Kelley and Humphreys, "Congressional Intent."

¹³⁶ Cogan and Heil, Social Security Wage Indexing Revisited, p. 7.

¹³⁷ Cogan and Heil, Social Security Wage Indexing Revisited, p. 7.

Figure A-5. Projected Replacement Rates for Average Workers Under Selected Proposals



Ratio of Initial Benefit to Last Year of Earnings

Source: U.S. Congress, Senate Finance Committee, *Staff Data and Materials Relating to Social Security Financing*, 95th Cong., 1st sess., June 1977, S. Rept. 95-7, pp. 47-54.

Notes: Estimates are based on the long-range assumptions of 4% price growth and 1.75% growth in real wages (i.e., 5.75% growth in nominal wages).

One reason the Second Hsiao Panel recommended adopting a price-index formula was to slow the growth in benefits and therefore the program's costs. Dr. Hsiao concluded that adopting a wage-indexing formula would necessitate further tax increases to finance the program's cost (i.e., benefits): "The two indexing methods differ significantly with respect to costs. Wage indexing guarantees higher future benefits and thus costs more."¹³⁸ A Senate report projected that, at the time, the long-range costs under a price-indexed formula would "approximately equal" the long-range revenue.¹³⁹

Figure A-6 displays the projected cost rates (i.e., costs as a percentage of taxable payroll) under the wage-indexed and price-indexed proposals as well as the law before the 1977 amendments. Under the law at the time, the cost rates were projected to increase as a result of over-indexing. Both the wage-indexing and price-indexing proposals were projected to reduce the long-range cost rates. Naturally, because the price-indexing proposal would have resulted in lower benefits, it was projected to have resulted in lower long-range costs relative to wage indexing. **Figure A-6** also shows the scheduled payroll taxes as of June 1977. From 1977 through 2010, the payroll tax was set in law at a combined 9.9% of covered earnings, and there was a scheduled increase to a combined 11.9% of covered earnings set for 2011.¹⁴⁰ As shown in **Figure A-6**, the price-indexing

¹³⁸ William Hsiao, "An Optimal Indexing Method for Social Security," in *Financing Social Security* (Washington, DC: 1979), p. 39.

¹³⁹ U.S. Congress, Senate Finance Committee, *Staff Data and Materials Relating to Social Security Financing*, 95th Cong., 1st sess., June 1977, S. Rept. 95-7, p. 52.

¹⁴⁰ Ibid., p. 3.

proposal's costs were projected to track the payroll tax (i.e., program's revenues) relatively more closely than the wage indexing proposal was.¹⁴¹





Source: U.S. Congress, Senate Finance Committee, Staff Data and Materials Relating to Social Security Financing, 95th Cong., 1st sess., June 1977, S. Rept. 95-7, pp. 47-54, 80.

Notes: Estimates are based on the long-range assumptions of 4% price growth and 1.75% growth in real wages (i.e., 5.75% growth in nominal wages). Under the current law at the time, the payroll tax rate was scheduled to increase in 2011.

The 1977 amendments also included a provision to establish a bipartisan panel—the National Commission on Social Security—to review all aspects of the Social Security program. The commission's final report, released in 1981, reviewed the program's benefit structure. The commission acknowledged that, because prices generally rise less rapidly than wages do, a price-indexing method would present cost savings relative to the wage-indexed approach. However, the commission rejected price-indexing measures for several reasons, such as declining benefits relative to wage indexing and a perception of *unfairness* to younger generations.¹⁴² The commission highlighted the stable replacement rates, a feature of the wage-indexing approach, as a benefit to future beneficiaries.

Omnibus Budget Reconciliation Act of 1986 (OBRA 1986)

Automatic COLAs became effective in 1975. Initially, the COLA formula required inflation to be at least 3% during the specified base period before a COLA could be triggered. As part of OBRA 86 (P.L. 99-509), lawmakers eliminated the 3% trigger, requiring instead that inflation (or wage

¹⁴¹ In 1977 there was no income from the taxation of benefits. The income from taxation of benefits was included as a provision in the Social Security Amendments of 1983.

¹⁴² "To younger generations, such a policy is unfair. They would pay higher tax rates for a longer period of time and would receive lower relative benefits when they retire than does the current older generation" (National Commission on Social Security, *Social Security in America's Future*, March 12, 1981, pp. 162-163, https://www.ssa.gov/history/pdf/80chap7.pdf).

growth in certain cases) be greater than 0% during the specified base period for a COLA to be payable.¹⁴³ This requirement effectively allowed for a COLA smaller than 3% to be paid while continuing to protect benefits from decreases during periods of declining prices (i.e., the Social Security COLA cannot be negative and, thus, cannot reduce benefit levels). Since 1983, there have been 37 payable COLAs, and 24 of those COLAs have been less than 3.0%. Thus, in the absence of this change, the 41-year period of 1983-2003 would have experienced only 13 COLAs. OBRA 1986 marks the last time the Social Security benefit computation was changed.

Bipartisan Commission on Entitlement and Tax Reform

In November 1993, President Bill Clinton established the Bipartisan Commission on Entitlement and Tax Reform, which was charged with recommending long-term budget savings measures.¹⁴⁴ The commission was unable to reach consensus on a set of final recommendations, although several commission members released their own plans. For instance, the co-chairs—Senators Bob Kerrey and John Danforth—released a proposal that, among other provisions, aimed to improve the long-term balance of the Social Security system. Their proposal would have indexed bend points to price growth and would have added a third bend point. Both of these features were designed to slow the growth in benefits.¹⁴⁵ A competing proposal—released by Senator Alan Simpson, Representative Alex McMillan, and Representative Porter Goss—noted that a change "in bend point formulas will in some way hit beneficiaries at all levels of income scale, and also that changing the formulas themselves may be interpreted as an alteration of the Social Security contract."¹⁴⁶

President's Commission to Strengthen Social Security (2001)

In May 2001, President George W. Bush established the President's Commission to Strengthen Social Security with the goal of "modernizing and restoring fiscal soundness to the Social Security System."¹⁴⁷ Over the next year, the commission held a series of meetings and discussed a wide range of Social Security reform proposals. One of the guiding principles that the President stipulated was that benefits for retirees or near-retirees must not change. As a result, one method of improving the program's projections suggested in meetings was to change the benefit formula to a price-indexing method to slow the growth of real benefits and, therefore, the program's costs.¹⁴⁸

In the commission's final report, the previous debate between wage-indexed and price-indexed benefit formulas was acknowledged:

¹⁴³ For more information on the Social Security COLA, see CRS Report 94-803, *Social Security: Cost-of-Living Adjustments*.

¹⁴⁴ Executive Order 12878, "Bipartisan Commission on Entitlement and Tax Reform," https://www.archives.gov/files/ records-mgmt/rcs/schedules/independent-agencies/rg-0220/n1-220-95-006_sf115.pdf. The commission is sometimes referred to as the *Kerrey-Danforth Commission*.

¹⁴⁵ Senator J. Robert Kerrey and John C. Danforth, *Reform Proposals of Commissioners*, pp. 23-24, https://www.ssa.gov/history/reports/KerreyDanforth/KerreyDanforthProposal.pdf.

¹⁴⁶ Sen. Alan K. Simpson, Rep. J. Alex McMillan, and Rep. Porter J. Goss, *Reform Proposal*, p. 39, https://www.ssa.gov/history/reports/KerreyDanforth/SimpsonMcMillanGossProposal.pdf.

¹⁴⁷ Executive Order 13210, "President's Commission to Strengthen Social Security," 3 C.F.R. §13210, https://www.govinfo.gov/app/details/CFR-2002-title3-vol1/CFR-2002-title3-vol1-eo13210.

¹⁴⁸ President's Commission, *Transcript for Thursday, September 6, 2001*, p. 66, https://www.ssa.gov/history/reports/pcsss/September_6_transcript.pdf.

[The Second Hsiao Panel] recommended an alternative policy under which initial benefits would more closely track increases in prices than in wages. Commentators at the time argued that such a policy preserved the affordability of Social Security while granting Congress the ability to adjust benefits as needed in the context of the times. Congress ignored the commission's warnings and in 1977 adopted the current policy of indexing initial benefits to wage growth.... As this historical record makes clear, wage-indexing of initial benefits coupled with existing demographic trends has never been fiscally sustainable.¹⁴⁹

The commission developed three alternative models for Social Security reform. Each model contained numerous provisions. "Model 2" included a provision to index future benefits to the growth in rates of prices rather than wages.¹⁵⁰ Under this provision, future retirees (i.e., those eligible in 2009 and later) would experience "pure" price indexing in which the fixed replacement factors (i.e., 90%, 32%, and 15%) would be multiplied by the ratio of the CPI to the AWI from two years prior.¹⁵¹ Unlike previous price-indexing proposals, a worker's covered earnings and the formula's bend points would continue to be wage indexed. Because wage growth typically outpaces price growth, the fixed replacement factors would generally decline over time. Because a worker's earnings would still be wage indexed in the benefit calculation, replacement rates would also decline over time.

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¹⁴⁹ President's Commission to Strengthen Social Security, *Strengthening Social Security and Creating Personal Wealth for All Americans*, December 2001, p. 77, https://www.ssa.gov/history/reports/pcsss/Final_report.pdf.

¹⁵⁰ All three models included, as another of the President's principles, an option for a voluntary personal retirement account that would allow individual workers to control a portion of their contributions. Inclusion of personal accounts was intended two create a two-tiered system with price-indexed Social Security benefits as Tier I and the personal accounts as Tier II. See John F. Cogan and Olivia S. Mitchell, "Perspectives from the President's Commission on Social Security Reform," *Journal of Economic Perspectives*, vol. 17, no. 2 (Spring 2003), pp. 149-172.

¹⁵¹ Elements of pure price indexing were also included in S. 1878 (108th Congress), introduced by Sen. Lindsey Graham.

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