
CHAPTER III. HOW SOCIAL SECURITY BENEFITS ARE COMPUTED

Computing Social Security benefits is a complex process, and the benefit level for any given individual depends on several factors. This chapter outlines the computation procedure, so that the proposals discussed in the following chapters may be better understood.¹

In broad outline, the computation of an individual retired worker's benefit in any given year has four steps. First, a measure of the worker's average monthly earnings over his or her entire work history is computed. For workers turning 62 after 1978, each year's earnings are indexed by the average annual wages in the economy in that year, and the average earnings amount computed is known as the Average Indexed Monthly Earnings (AIME).

The second step is the calculation of the worker's Primary Insurance Amount (PIA), which is determined by applying a formula to the AIME. Third, the PIA is adjusted for factors such as early retirement, earnings above a certain amount, and the presence of other eligible family members, to arrive at the actual benefit to be paid in the first year of retirement.

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1. Since the focus of this paper is upon the long-run financing problem of the Social Security system, the discussion here outlines the benefit computation process that will be employed to compute the benefits for workers becoming 62 after 1983. Workers who became 62 before 1979 had their benefits computed under a different method, which is discussed in Appendix A. Workers becoming 62 between 1979 and 1983 will have their benefits computed under both a transitional guarantee procedure and the new benefit computation procedure; they will receive whichever benefits are higher as computed under each of the two methods.

In addition, this chapter focuses on the computation of retirement benefits. The computation of benefits for disabled workers and their families and for survivors of deceased workers follows an analogous process, although some details differ. See Appendix A for more information.

Finally, that benefit is indexed each year thereafter by increases in prices as measured by the Consumer Price Index.²

Total Social Security outlays and individual benefit payments would be affected if the computation process was modified at any of these stages, but the ramifications of proposals to change these stages would vary. The remainder of this chapter outlines each of the steps in the process of computing benefits in more detail.

CALCULATION OF AVERAGE INDEXED MONTHLY EARNINGS

A worker's Average Indexed Monthly Earnings represents the average wage earned in employment covered by Social Security over the working life, with some adjustments. For example, not all years of work are included: for a worker becoming 62 in 1982, the highest 26 years of covered indexed wages are counted. Under current law, this number will increase to 35 years by 1991, and will remain at that level thereafter.³ This increase in the number of years included in the AIME may, in itself, act to reduce the growth in average benefits, since for many workers it will result in the inclusion of more years of low or even zero earnings in the computation of average lifetime earnings.

After the number of computation years has been determined, the worker's wages in each year of covered employment before age 60 are indexed to wage levels in the year in which age 60 was reached. (Earnings received at and after age 60 are entered without being indexed.) The index used is the average of wages for all workers in each year of the work history. Thus, for example, for a worker turning 60 in 1980, earnings in 1955 would be indexed up to 1980 levels by increasing them by the same percentage that average annual wages for all workers increased between 1955 and 1980; similarly, the worker's 1956 earnings would be increased by

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2. In addition, the benefit is adjusted for any changes in the status of the retired worker or his dependents, such as changes in his earnings or in the number or ages of his dependents, as these changes occur.
 3. The number of computation years equals five less than the number of years after 1950 (or the year in which the worker became 21, if that was later) and before the year in which age 62 is reached. Thus, for someone becoming 62 in 1982, it equals $(1981-1950)-5$, or 26. In 1991, it would equal $(1990-1950)-5$, or 35.

the percentage increase in average annual wages for all workers between 1956 and 1980; and so on for subsequent years. Only earnings at or below the taxable maximums are used in the computation.⁴

Finally, after earnings in all years have been indexed, earnings from the number of years included in the computation period are summed. If a worker has more years of earnings than must be included in the computation, the years with the lowest indexed earnings are dropped. Similarly, if a worker does not have enough years of covered wages, years with zero earnings are added. Total indexed earnings are then divided by the total number of months in the computation years to arrive at the Average Indexed Monthly Earnings.

If a worker continues to be employed after age 62, these earnings may also be included in the AIME. Earnings received after age 62 may be substituted for those in any previous year if that would result in a higher AIME. Like wages earned between age 60 and age 62, such earnings are not indexed downward to average wage levels in the year the worker turned 60, but rather are included at their nominal values.

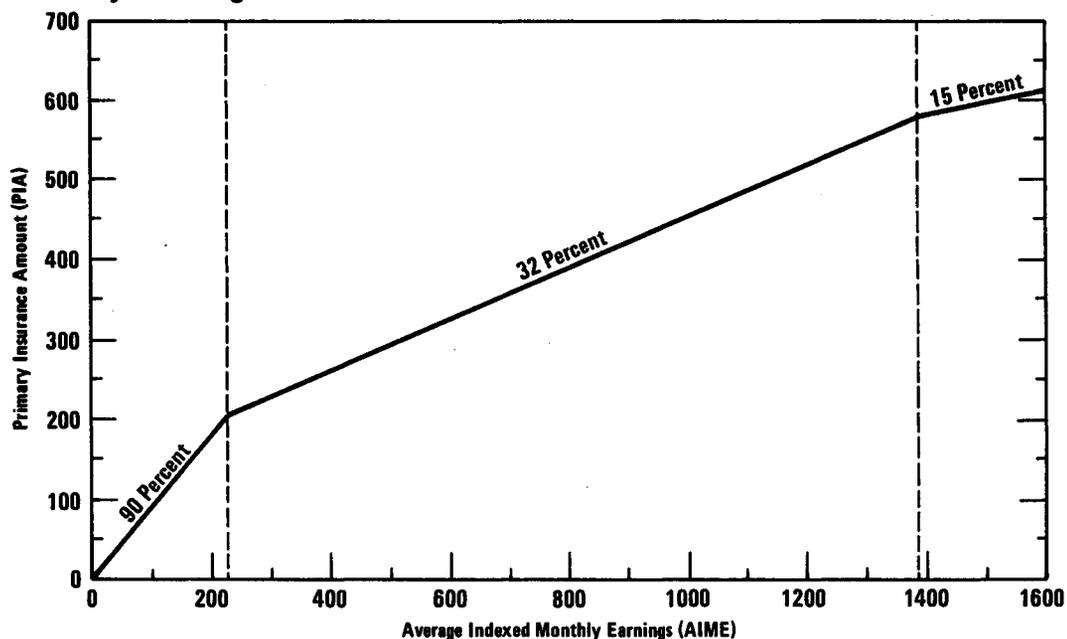
Under these computation rules, someone reaching age 62 in 1982 who has always earned the maximum taxable level will have an AIME of \$1,493. Someone whose earnings have always equalled the average wage will have an AIME of \$1,046. The actual average AIME for those age 62 in 1982 is somewhat lower than this, however, since many workers do not have at least 26 years of covered earnings at retirement.

COMPUTATION OF THE PRIMARY INSURANCE AMOUNT

Once a worker's AIME has been computed, a formula is applied to it in order to calculate the Primary Insurance Amount, which is the base used for computing benefits. Under the formula, 90 percent of the first part of a worker's average monthly earnings is replaced by Social Security benefits, but as AIMEs rise the proportion replaced falls, first to 32 percent and finally to 15 percent. (See Figure 1 for an illustration of the formula.) The rationale for using such a formula is that it increases the adequacy of benefits for those with very low lifetime earnings, while maintaining some connection between earnings and benefit levels.

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4. Because the limit on wages subject to the payroll tax has been increased irregularly in the past, the timing of earnings near the maximum can affect the indexed total. The maximum taxable wage is now indexed by average annual wages.

Figure 1.
 Primary Insurance Amounts in Relation to Average Indexed
 Monthly Earnings Under Current Law, 1982.



For 1982, the formula is as follows: a worker's basic benefit (or PIA) equals 90 percent of the first \$230 of AIME, plus 32 percent of AIME between \$230 and \$1,388, plus 15 percent of AIME over \$1,388. The points at which the percentage of AIME replaced by the PIA changes (in this case, \$230 and \$1,388) are known as "bend points," because, as Figure 1 illustrates, a line showing the relationship between PIAs and AIMEs bends at those points. Under current law, these bend points are indexed to average annual earnings, so that as wages rise the bend points rise proportionately, and average replacement rates (the ratio of PIA to earnings) are maintained. This also ensures that two individuals with similar earnings histories will have PIAs that are approximately the same proportion of their AIMEs, even if they become 62 in different years.⁵

5. This assumes that both are subject to the new benefit computation rules. Under the old method, which applies to those born before 1917, and the transitional method, which applies to those born between 1917 and 1921, those with identical earnings records who are born in different years may have markedly different benefits. See Appendix A for more information.

Because of the way the benefit formula is weighted, workers with low average earnings receive benefits that are a higher proportion of their wages than those with high earnings (see Table 3). Thus, a worker who reaches age 62 in 1982 with the maximum AIME of \$1,493 under the new computation method will have a PIA equal to \$593, about 24 percent of the final year's taxable earnings.⁶ Someone with an AIME of \$1,046, the level that would represent average earnings over at least 26 years, will have a PIA of \$468, or about 41 percent of final earnings.⁷ Someone who has earned the minimum wage over a working life of 26 years will, in contrast, have an AIME of only \$563 but a PIA of \$314, which yields a replacement rate about 54 percent.⁸

COMPUTATION OF BENEFITS BASED ON
THE PRIMARY INSURANCE AMOUNT

Social Security benefits are calculated on the basis of a worker's PIA, but they also depend on various characteristics of the recipient, such as age and relationship to the insured worker. In addition to the covered earner who has acquired a PIA through his earnings, various other people may receive benefits based on that PIA. These include, for example, spouses over 62, widows or widowers over 60, surviving or dependent children under 18, and surviving dependent parents age 62 or over. The amount payable will in general be some percentage of the worker's PIA, depending on the recipient's status. For example, workers receive 100 percent of their own PIAs in benefits if they retire at age 65. Spouses of retired workers receive

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6. For an AIME of \$1,493, the PIA will be $(0.90 \times 230) + (0.32 \times (1,493 - 230)) + (0.15 \times (1,493 - 1,388))$, which equals \$593.
 7. For an AIME of \$1,046, the PIA will be $(0.90 \times 230) + (0.32 \times (1,046 - 230))$, which equals \$468.
 8. For an AIME of \$563, the PIA will be $(.9 \times 230) + (.32 \times (563 - 230))$, which equals \$314. Lower AIMEs than this are possible, since not all workers have covered earnings for at least 26 years, nor do all work full time or earn at least the minimum wage. In addition, actual benefits for a long-term worker at the minimum wage would be somewhat higher than this, since such a worker would be eligible for the special minimum benefit, which was \$321 per month in January 1982. The replacement rate based upon this benefit would be 55.3 percent, rather than 54 percent. For details, see Appendix A.

TABLE 3. AVERAGE INDEXED MONTHLY EARNINGS AND PRIMARY INSURANCE AMOUNTS AT THREE EARNINGS LEVELS FOR EARNERS BECOMING 62 IN 1982^a

	AIME	PIA	Earnings in 1981	Replacement Rate (Annualized PIA as a percentage of last year's earnings) ^b
Earner with Wages at Federal Minimum Wage ^c	563	314	6,968	54.1
Earner with Wages at Average of All Earners ^d	1,046	468	13,595 ^e	41.3
Earner with Wages at Taxable Maximum ^f	1,493	593	29,700	24.0

SOURCE: Congressional Budget Office.

- a. Actual benefits payable in 1982 to these workers would be less than the PIA because of reductions due to early retirement.
- b. These replacement rates are based on annualized PIAs, and thus do not include the cost-of-living adjustment that would be received in the first year of retirement. They differ slightly, therefore, from replacement rates based on benefits (without early retirement reductions) that are cited elsewhere in the paper.
- c. Calculations are based upon full-time work (2,080 hours per year) at the federal minimum wage since 1950. This worker would actually have a PIA of \$321, because of the special minimum provisions.
- d. Calculations are based upon the earnings of a worker who has earned the average wages in the economy since 1950.
- e. Preliminary estimate provided by the Office of the Actuary, the Social Security Administration.
- f. Calculations are based upon the earnings of a worker who has earned the Social Security taxable maximum since 1950.

50 percent if they retire at 65 or later.⁹ Surviving spouses receive benefits equal to 100 percent of the worker's PIA at age 65, if their spouses never received reduced benefits while alive or did not retire before age 65.¹⁰ Other categories of recipients receive other percentages of PIA. (See Appendix A for a complete list.)

Benefits for both workers and their spouses are reduced if they retire before age 65. The reduction depends upon the number of months before age 65 that they retire, and reaches a maximum reduction of 20 percent of the full benefit at age 62 for retired workers, and 25 percent at age 62 for spouses. Similarly, workers who become 62 after 1978 and retire after 65 receive a delayed retirement credit of 3 percent per year up to age 70.

Total benefits payable on the basis of one worker's earnings are subject to a maximum for any one family. For example, a family containing a surviving spouse under 60 with no earnings and with three dependent children would theoretically be eligible for total family benefits of 300 percent of the deceased worker's PIA (75 percent for the spouse and 75 percent for each child), but in practice the family maximum benefit will be somewhere between 150 percent and 188 percent of the PIA, depending on the level of the PIA.¹¹ In general, this means that if more than two or three members of a family are eligible for benefits, total family benefits will not increase with additional family members.

Benefits may also be reduced if recipients continue to work after starting to receive benefits. Benefits received by those under age 72 are reduced by \$1 for every \$2 of earnings over a certain exempt amount.¹² In

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9. Spouses' benefits equal the higher of the benefits to which they are entitled on the basis of their own earnings records or those to which they are entitled as spouses. If they are entitled to retired workers' benefits, they receive these benefits plus any amount by which the spouses' benefits exceed the retired workers' benefit.
 10. For surviving spouses 65 or over, benefits are limited to the amount the deceased worker would have received if alive, but will be at least 82.5 percent of the PIA.
 11. For those with PIAs calculated in 1982, the formula for the family maximum benefit is as follows: 150 percent of the first \$294 of PIA, plus 272 percent of PIA between \$294 and \$425, plus 134 percent of PIA between \$425 and \$554, plus 175 percent of PIA over \$554.
 12. Under current law, the age at which the earnings test does not apply will be lowered to 70 in January 1983.

1982, this "earnings test" applied to earnings over \$6,000 for recipients aged 65-71 and \$4,440 for those under age 65.¹³

Finally, after benefits have been calculated and have started to be paid, they are increased every year to reflect changes in the cost of living, as measured by the Consumer Price Index.¹⁴ The appropriateness of this index, and the implications of its use for benefit levels, total costs, and trust fund stability are discussed in Chapter VI.

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13. Limits on earnings for disabled beneficiaries are somewhat different. See Appendix A for details.
 14. Benefits are not increased if the CPI has not risen by at least 3 percent, measured on a first-quarter-to-first-quarter basis.

CHAPTER IV. CHANGES IN THE COMPUTATION OF INITIAL SOCIAL SECURITY BENEFITS

The long-run financial outlook for Social Security could be improved by reducing the relative level of benefits for all new beneficiaries. One way to do this would be to change the benefit computation procedure outlined in the last chapter.

Such a change would have several advantages as a means of restraining growth in the long-run costs of the system. It would affect the majority of new beneficiaries similarly, rather than concentrating its effects on particular subgroups within the beneficiary population as do other savings proposals.¹ Changes in the benefit computation formula could be phased in gradually, if desired, in order to reduce disparities among different age groups. Moreover, if wages increased faster than prices in the future, as is expected, gradual phase-in might allow real benefit levels to continue to rise--although more slowly than under current law--even with the gradual decline in replacement rates. And if total resources available for benefit payments were found to be greater than expected, most of the proposed formula changes could also be phased out relatively easily (although recipients whose basic benefit levels had been lowered as a result of the formula change would, in general, continue to have relatively lower benefits, unless ad hoc benefit increases were provided).

Proposals to change benefit computation methods also have some drawbacks. In general, they would affect only new beneficiaries, who even under current law will receive lower benefits relative to contributions than those now on the rolls. In addition, for some of these proposals the total impact would depend heavily on the rate of growth in wages and the rate of inflation, both of which are difficult to predict accurately. Further, some of the proposed changes would lower replacement rates most for those with higher benefits, whose benefits are already a relatively small proportion of wages. This could be seen as undesirable, since it would increase the already existing disparity between rates of return on contributions for high

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1. Changes in the reduction factors for early retirement would also lower initial benefits for some, although not all, beneficiaries. Such reductions do not relate to the computation of the basic benefit or PIA, however; instead, they are imposed after the PIA is computed. Therefore, they are not discussed here but rather in Chapter V.

earners and those for lower earners. Finally, some of the proposals are fairly complex, and both their intent and their probable effects may be difficult to explain or to understand.

Changes in calculating benefits could be made in either of two ways: by altering one or more of the components of the formula used to compute PIAs, or by using a different index to calculate AIMEs, upon which the PIA calculation is based.² Most recent proposals to change benefit computation methods have concentrated on the calculation of the PIA. Accordingly, this chapter first examines possible modifications to the PIA formula, and then looks briefly at ways the calculation of AIMEs could be altered.

OPTIONS FOR CHANGING THE CALCULATION OF THE PRIMARY INSURANCE AMOUNT

As noted in Chapter III, PIAs are calculated by applying a progressive formula to each worker's AIME. This formula has three brackets, and a declining percentage of earnings is included in the PIA from each successive bracket. For example, for those turning 62, dying, or becoming disabled in 1982, PIAs equal 90 percent of each worker's AIME up to \$230, 32 percent of the AIME between \$230 and \$1,388, and 15 percent of the AIME over \$1,388. The two dollar amounts in this formula, \$230 and \$1,388, known as bend points, are adjusted each year to reflect changes in average annual wages, so a new formula is created each year for each new group of workers becoming eligible for benefits.

Reductions in Bend Points

Recently, the discussion of ways to restructure the benefit formula has focused on reductions in the formula bend points relative to AIMEs. If the bend points were indexed by 75 percent (rather than the current 100 percent) of the increase in average wages, for example, over a period of 12 years beginning in 1984, they would decline gradually relative to AIMEs.³

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2. For more information on the benefit computation process, see Chapter III.
 3. The Administration included a somewhat more rapid decline in bend points as part of its May 1981 package of Social Security proposals. The formula change proposed there would have involved indexing bend points by 50 percent of wage increases over a period of six years. A faster implementation of such a proposal would result in greater

Thus, a larger proportion of each worker's AIME would fall into the upper brackets of the formula, where the percentage of earnings replaced by benefits is lower. As a result, replacement rates (annualized PIAs as a proportion of the final year's earnings) would fall for almost all workers over the 12-year period, but would stabilize at those lower rates when full wage indexation of the bend points resumed in 1996.

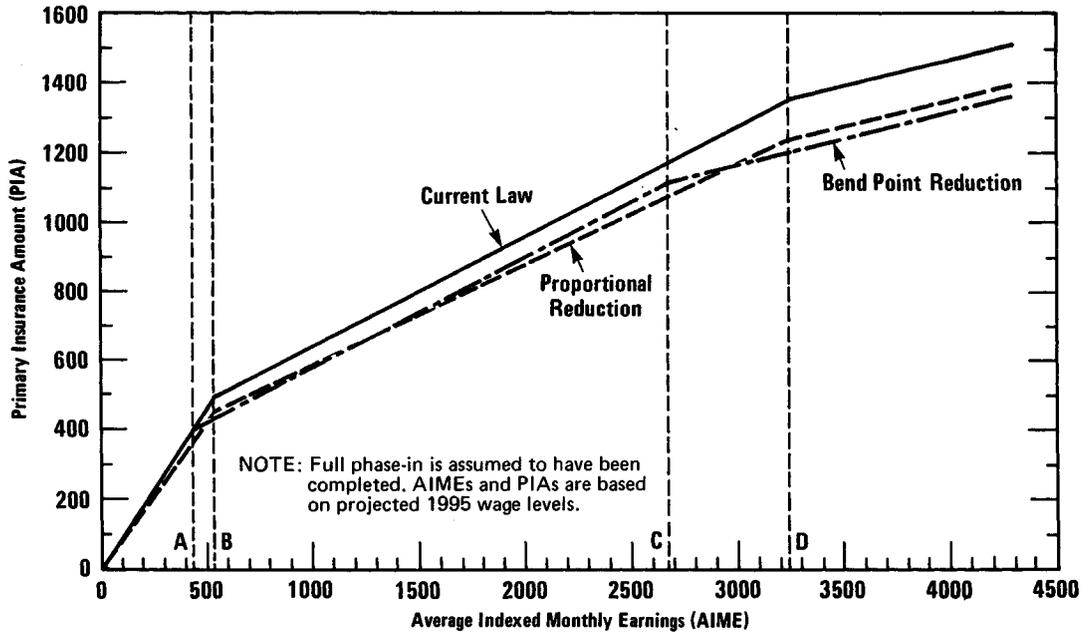
Under this proposal, PIAs would decline most for those with relatively high AIMEs, as Figure 2 shows.⁴ In general, those with AIMEs at or above the higher bend point under the current law formula (point D in Figure 2) would have the largest relative decline in their benefits under the proposal, since a larger proportion of their AIMEs would be shifted into the top bracket of the formula where replacement rates are the lowest. Because of the shift in the bend points, however, workers with AIMEs near the lower bend point (point B in Figure 2) would also experience relatively large reductions. Only a small proportion of recipients--those with AIMEs below point A in Figure 2--would be completely unaffected by the reduction in bend points.

Reducing bend points in this way would produce substantial long-run savings--about 0.9 percent of payroll over the next 75 years (see Table 4).⁵ If the reductions were phased in over a period of 12 years, major differences in benefits received by those born a few years apart could be avoided, and projected benefits would be changed very little for those retiring in the very near future. After the proposal was fully phased in, benefits would be reduced by about 8 percent on average, although those who were retired

savings, but would increase disparities between different retirement cohorts. The 12-year restriction on the increase in bend points is an option proposed by the staff of the National Commission on Social Security Reform.

4. Since this proposal would affect bend points prospectively, Figure 2 shows PIAs and AIMEs under current law and under the proposal as they would be after 12 years. Bend points inflated to 1995 levels would be \$537 and \$3,234 under current law (using the Alternative II-B projections of average growth in wages) and \$445 and \$2,684 under the proposal. The AIMEs of full-time workers--minimum wage earner, average earner, and maximum wage earner--who would be age 62 in 1995 are projected to be \$1,264, \$2,432, and \$4,303, respectively.
5. This compares to an estimated long-run deficit in OASDI of 1.8 percent of long-run payroll. Total savings would of course depend upon the level of wage growth during the phase-in years.

Figure 2.
 Primary Insurance Amounts in Relation to Average Indexed Monthly Earnings Under Current Law and Two Options, 1995.



before the phase-in started would be unaffected. Because those with the highest earnings--who are also those most likely to have incomes from private pensions and investments--would experience the greatest decline in benefits, it could be argued that this proposal would focus cuts on those best able to afford them.

On the other hand, rates of return on Social Security taxes paid are already lower for high earners than for those with low earnings, and by the end of this century contributions will exceed expected benefits for some high earners, even under current law.⁶ Any change in the benefit formula that further reduced benefits for those with high earnings would exacerbate this situation.

6. See Robert J. Myers, "Money's Worth Comparison for Social Security Benefits," National Commission on Social Security Reform, Memorandum 45 (August 12, 1982).

TABLE 4. LONG-RUN SAVINGS OF SEVERAL FORMULA CHANGE OPTIONS, RELATIVE TO CURRENT LAW (As a percentage of taxable payroll)^a

Option	Total, 1982- 2056	Twenty-five-year Periods		
		1982- 2006	2007- 2031	2032- 2056
Change PIA Formula				
Index bend points by 75 percent of increase in wages, for 12 years ^b	0.90	0.26	1.09	1.36
Reduce replacement rates within brackets proportionately, for 12 years ^b	0.89	0.25	1.08	1.35
Change AIME Formula				
Index earnings by the CPI, bend points by wages ^c	1.06	0.14	1.20	1.85
Index both earnings and bend points by the CPI ^c	2.83	0.27	2.76	5.45

SOURCE: Estimates provided by the Office of the Actuary, Social Security Administration based on Alternative II-B assumptions, 1982 OASDI Trustees' Report.

- a. Taxable payroll is the total of all wages on which Social Security taxes are paid.
- b. Proposals would first affect the benefit formula in 1984.
- c. Estimates based on indexing changes beginning in 1983.

In addition, if the increase in bend points did not exceed the increase in benefits resulting from the cost-of-living adjustment (COLA) in any given year, this proposal could result in lower real benefits for those retiring in that year than for those retiring earlier. This situation already occurs in some years when wage growth is less than price growth, but this option could exacerbate it. In order to avoid this problem, reductions could be limited to the higher of 75 percent of wages or the previous year's COLA.⁷

Changes in Replacement Rates Within Brackets

An alternative to changing the formula bend points would be to change the percentage replacement rates within each bracket of the formula. For example, these rates could be reduced proportionately over a period of 12 years, so as to provide long-run savings comparable to those achieved under the proposal to reduce bend points. This option would result in a somewhat flatter replacement curve overall than under present law, but all workers' PIAs would be reduced by the same proportion. Thus, for any given worker, the PIA under this option would be the same proportion of current law PIA, regardless of the level of the worker's AIME.

If replacement rates were reduced proportionately in all three brackets, rates of 82.7 percent in the first bracket, 29.4 percent in the second bracket, and 13.8 percent in the highest bracket would be needed to achieve the same long-run savings as under the bend-point option. The current law rates are 90 percent, 32 percent, and 15 percent.

Under this proposal, PIAs for those with very high earnings would be reduced less than under the bend-point proposal, while those for workers with AIMEs near the average would be reduced somewhat more (see Figure 2). Benefits for those with very low AIMEs--below the lowest bend point--would also be lower than under the bend-point option, although they would still be a larger proportion of earnings for these workers than for those with higher earnings.

Since this option would maintain the present relative distribution of benefits, its advantages and drawbacks would be similar to those of the

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7. Alternatively, bend-point increases could be linked to the same index as the COLA. Indexing bend points by the CPI would save 2.03 percent of payroll over the next 75 years. If bend points continued to be indexed by the CPI over the long run, however, declines in benefits relative to current law, and in replacement rates, would be continuing and very substantial. See further discussion below.

current law formula. For example, under this option retirees with high AIMEs would have their rates of return on contributions reduced by the same proportions as all other retirees, rather than by a larger percentage than the average as under the bend-point option. Since their rates of return are already lower than those of other workers, this may be seen as an advantage. On the other hand, these beneficiaries are more likely than other Social Security recipients to have other sources of income such as private pensions and investments, and may therefore be better able to adjust to lower benefit levels. Further, such recipients may also benefit more from the tax-exempt status of Social Security benefits.

Additionally, this formula would result in lower benefits for those with very low AIMEs than either current law or the bend-point proposal.⁸ Those with low AIMEs who would lose under the reduced replacement-rate option would, for the most part, be those with limited work histories, since it is difficult to have an AIME below \$200 (approximately the point at which the proposed formula would become more favorable than the reduced bend-point formula) if a person has worked steadily in covered employment.⁹ A worker with lifetime earnings at the minimum wage who became 62 in 1982, for example, would have an AIME of \$563. Many workers with AIMEs lower than \$200, therefore, will have had some other source of income during their working lives, and may continue to do so after retirement. Further, the current benefit structure provides a very high rate of return on contributions for workers with very low AIMEs.

On the other hand, many of those with irregular work histories, and thus low AIMEs, are women who have spent some time out of the labor force because of home responsibilities. Many of them will also be entitled to benefits as spouses or widows, but such benefits may be inadequate for divorced women whose former husbands are still alive. Other workers with discontinuous work histories include those with periods of illness or unemployment, who are also unlikely to have significant incomes in addition to their benefits. Under either the reduced replacement-rate option or the reduced bend-point option, additional protection could be provided to low-income recipients by strengthening means-tested benefit programs for the

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8. PIAs for those with AIMEs just above the first bend point under the reduced bend-point option (point A in figure 2) would actually be slightly higher under a proportional reduction than if bend points were reduced, however (see Figure 2).
 9. The \$200 figure is in 1982 dollars. Figure 2 is in 1995 terms. In 1995, the AIME at which the proportional formula would become more favorable would be about \$500.

elderly and disabled, such as Supplemental Security Income (SSI). This would mitigate the effects of this proposal for low-income beneficiaries, but would also reduce its long-run budget savings.

Thus, the long-run savings generated by these proposed formula changes would be similar, but their effects would differ for different types of beneficiaries. Table 5 summarizes their impact on replacement rates for three types of workers: a minimum wage earner, someone with earnings at the average of earned wages, and someone with earnings at the taxable maximum. Each of these proposals would reduce benefits relative to current law for all three types of workers, but under the bend-point option the impact would be greatest for a maximum wage earner, while under the proportional reduction option, the relative reductions in replacement rates would be the same for all workers.

OPTIONS FOR CHANGING THE COMPUTATION OF AVERAGE INDEXED MONTHLY EARNINGS

Savings could also be generated by changing the method used to calculate AIMEs. Currently, as explained in Chapter III, the AIME consists of a worker's average monthly earnings, corrected for the growth in wages over time. These corrections are based on an index of average annual wages.

Because average wages are projected to grow faster than prices over the long run, one option for reducing AIMEs and hence benefits is to index earnings by the CPI or some other price index, rather than by average wages.¹⁰ The savings to be gained in the immediate future from the implementation of this proposal would probably be limited, since real wage growth is not expected to increase dramatically within the next few years. In the long run, however, the savings from using a price index rather than a wage index to calculate AIMEs could be substantial if wages again start to rise more rapidly than prices, as is expected. If the PIA formula remained as under current law, savings from this proposal would be about 1.06 percent of long-run payroll (see Table 4).

Under this proposal, bend points would continue to be wage indexed, and they would rise relative to the price-indexed AIMEs if real wage growth

10. See Congressional Budget Office, Financing Social Security: Issues for the Short and Long Term (July 1977), for a discussion of the various indexing options, including indexing earnings by prices, that were considered at the time of the 1977 amendments.

TABLE 5. REPLACEMENT RATES FOR THREE WORKERS AGE 62 IN 1995: CURRENT LAW AND FOUR OPTIONS

Option	Replacement Rate in 1995 (annualized PIA as percentage of last year's earnings)		
	Minimum Wage Earner ^a	Earner with Average Wages ^b	Earner with Wages at Maximum ^c
Current Law	58.0	42.5	25.3
Change PIA Formula			
Index bend points by 75 percent of increase in wages, for 12 years	53.7	40.4	22.8
Reduce replacement rates within brackets proportionately, for 12 years	53.3	39.1	23.3
Change AIME Formula			
Index earnings by the CPI, bend points by wages ^d	56.4	41.0	24.8
Index both earnings and bend points by the CPI ^d	52.8	39.3	22.7

SOURCE: Congressional Budget Office, based upon the Alternative II-B assumptions of the 1982 Trustees' Report.

- a. Calculations are based upon the earnings of a worker who always was employed full-time (2,080 hours per year) at the federal minimum. The minimum wage after 1982 is assumed to increase at the same rate as the average earnings in the economy.
- b. Calculations are based upon the earnings of a worker who always earned the average wages in the economy.
- c. Calculations are based upon the earnings of a worker who always earned the Social Security maximum taxable earnings.
- d. Replacement rates would continue to decline for all workers under these proposals, if wage increases exceeded price increases as projected. Replacement rates are calculated assuming that indexing changes begin in 1984.

took place. This would mean that a higher proportion of all earnings would be shifted back into the bottom brackets where the proportion of AIME replaced is highest. This would result in a flatter overall distribution of benefits that would to some extent offset the savings generated by the shift to price indexation of earnings.

Alternatively, both bend points and earnings could be price indexed. This would maintain the current relationship between AIMEs and PIAs, but would shift more earners into the higher brackets as real wage growth took place, thus reducing replacement rates (see Table 5). Savings from this proposal would be very large--about 2.83 percent of long-run payroll. The effects of the various combinations of wage and price indexing of the formula's bend points and of earnings are summarized in Table 6.

The effects of these proposals on beneficiaries would also depend on the relative behavior of wages and prices. The differential in rates of change between wages and prices has not been constant over time, however. Before 1974, wages generally rose faster than prices, often by a fairly large margin. Since then, prices have often risen faster especially in the last few years. Thus, for any given worker, the difference between wage and price indexing of earnings would depend heavily on which years were included in the earnings history, and on total earnings in each of those years.

Under either of the proposals affecting AIMEs, benefits for successive generations of retirees would rise with price increases and would maintain their real purchasing power over time. Any savings from these proposals would occur as a result of increases in real wages. On the other hand, if real wages grew over the long run, replacement rates would decline, and the standard of living of retirees would fall relative to that of workers. Conversely, in periods like the recent past when price increases exceeded wage increases, benefit levels would rise relative to wage levels, and total outlays under these proposals would be greater than under current law. If the relative behavior of wages and prices continues to be as volatile in the future as in the recent past, and the income of the system is still tied to wages, price indexing of earnings or bend points could lessen the stability of the system and lead to future short-run financing problems.

TABLE 6. EFFECTS (RELATIVE TO CURRENT LAW) OF DIFFERENT INDEXING METHODS FOR EARNINGS AND BEND POINTS

Bend Points Indexed by:	Earnings Indexed by:	
	Wage Index	CPI
Wage Index	Current law	Benefits reduced because, although the bend points would be the same as under current law, AIMEs would be lower. Savings = 1.06 percent of long-run payroll.
CPI	Benefits reduced because more of AIMEs would be shifted to higher brackets, which have lower replacement rates. Savings = 2.03 percent of long-run payroll.	Benefits reduced because both indexed earnings and bend points would be lower in the future than under current law. Savings = 2.83 percent of long-run payroll.

NOTE: This assumes that wages will rise faster than prices. If--contrary to projections--prices were to increase faster than wages over the long run, effects of these indexing alternatives would differ from those shown. Under those circumstances, price-indexing proposals would increase benefits.

