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AVERAGE WAGES FOR 1984 FOR INDEXING UNDER THE SOCIAL SECURITY ACT AND THE AUTOMATIC DETERMINATIONS FOR 1986

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Introduction

Under the Old-Age, Survivors, and Disability Insurance (OASDI) program, all persons newly eligible for benefits after 1978 have their benefits computed under a procedure which calls for indexing each year of their earnings taxable under Social Security to reflect the changes in levels of average wages in the economy from that year to a point 2 years before their current eligibility. Increases in average wages are also used to index the "bend points" in the formulas for computing Primary Insurance Amounts (PIA's) and maximum family benefit amounts, as well as several other program amounts such as the contribution and benefit base, the retirement earnings test exempt amounts, and the amount of earnings required for a quarter of coverage.

The law provides for annual publication in the Federal Register of the newly determined amounts under these indexing procedures. Because of the wide-ranging use of the amounts determined under wage indexing, the Office of the Actuary has undertaken the task of annually providing more detailed information on the new average wage figure and the related automatic determinations. Prior to 1985, the "old-law" contribution and benefit base, which is of widespread interest, was not published in the Federal Register at the same time as the other wage-indexed amounts. However, the determination of this amount was described in the annual actuarial note concerning the automatic determinations.

The initial paper in this series (Actuarial Note No. 103) provided documentation of the determination of the wage indexing series for 1951-79. In addition, the details of the automatic determinations of program amounts for 1979-81 which depended on these average wage figures were presented. Subsequent determinations of annual average wage figures and corresponding program amounts were presented in Actuarial Notes Nos. 112, 115, 119, and 124. This paper provides similar documentation for the determinations for 1986 based on the 1984 average wage. This will be the last paper in this series since the method of determining each of the amounts, which does not change from year to year, is outlined in the Federal Register. Also, beginning this year the "old-law" contribution and benefit base is published along with the other wage-indexed program amounts. Tables 1 and 2 present the figures for the current determinations along with comparable historical figures. The official publication of these results appeared in the Federal Register on October 31, 1985 (50 FR 45558).

Table 1.—Average wage series for indexing earnings under the Social Security Act, calendar years 1951-84

Calendar year	Average wage	Calendar year	Average wage
1951	$2,799.16	1971	$6,497.08
1952	2,973.32	1972	7,133.80
1953	3,139.44	1973	7,580.16
1954	3,155.64	1974	8,030.76
1955	3,301.44	1975	8,630.92
1956	3,532.36	1976	9,226.48
1957	3,641.72	1977	9,779.44
1958	3,673.80	1978	10,556.03
1959	3,855.80	1979	11,479.46
1960	4,007.12	1980	12,513.46
1961	4,086.76	1981	13,773.10
1962	4,291.40	1982	14,531.34
1963	4,396.64	1983	15,239.24
1964	4,576.32	1984	16,135.07
1965	4,658.72		
1966	4,938.36		
1967	5,213.44		
1968	5,571.76		
1969	5,893.76		
1970	6,186.24		

Average Wages for 1984

The concept of an average wage to be used for indexing is described in various sections of the law as "the average of the total wages (as defined in regulations of the Secretary. . .)." Such general language left a wide range of possibilities for a definition of such a wage series. As indicated in Actuarial Note No. 103, the indexing series of average wages was developed from several sources of data. In particular, the determinations of the average wage figures since 1978 have been based on wage data collected by the Internal Revenue Service (IRS) during their processing of annual tax returns.

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Table 2.—Social Security program amounts determined under the automatic provisions which depend on increases in average wages, calendar years 1978-86

	Contribution and benefit base[1]		Retirement earnings test exempt amounts: Under age 65		Retirement earnings test exempt amounts: Age 65 - 69[2]			Bend points in PIA formula		Bend points in maximum family benefit formula		
Calendar year	Present law	"Old law"	Monthly	Annual	Monthly	Annual	Amount of earnings required for each quarter of coverage	First	Second	First	Second	Third
1978	$17,700	$17,700	$270.00	$3,240	$333.33⅓	$4,000	$250	—	—	—	—	—
1979	22,900	18,900	290.00	3,480	375.00	4,500	260	$180	$1,085	$230	$332	$433
1980	25,900	20,400	310.00	3,720	416.66⅔	5,000	290	194	1,171	248	358	467
1981	29,700	22,200	340.00	4,080	458.33⅓	5,500	310	211	1,274	270	390	508
1982	32,400	24,300	370.00	4,440	500.00	6,000	340	230	1,388	294	425	554
1983	35,700	26,700	410.00	4,920	550.00	6,600	370	254	1,528	324	468	610
1984	37,800	28,200	430.00	5,160	580.00	6,960	390	267	1,612	342	493	643
1985	39,600	29,700	450.00	5,400	610.00	7,320	410	280	1,691	358	517	675
1986	42,000	31,500	480.00	5,760	650.00	7,800	440	297	1,790	379	548	714

[1]Present law amounts for 1979-81 were specified in the Social Security Amendments of 1977. The "old law" amounts are those which would have been determined under the law in effect prior to the enactment of those amendments.

[2]Amounts for 1978-82 represent ad hoc increases and are specified in the law.

1. IRS WAGE DATA FOR 1984

Following the enactment of the annual reporting legislation, the Social Security Administration (SSA) executed a contract for reimbursable services with IRS under which IRS would provide the underlying data to be used for indexing according to increases in average wages. Prior to the existence of these requests for data by SSA, IRS collected data annually on total wages reported in tax returns, but did not regularly obtain comparable information on the number of wage earners who earned those wages. This was true, in part, because such data are not readily available on the tax returns themselves, since a joint return does not contain an explicit entry which indicates whether the wages reported in the return were earned by one or both of the persons listed in the return. Such information could only be deduced by examining the W-2 Forms attached to the joint return, and that tedious procedure was not included in the normal processing of returns before 1977.

Beginning with the returns for tax year 1977, the SSA contract with IRS provided for the collection of data on numbers of wage earners by including an examination of the W-2 Forms attached to returns as part of the normal processing of joint returns. A summary of the data supplied to SSA by IRS for tax years 1983-84 is contained in table 3. The tabulation of total wages shown was made directly from the wages reported on the Forms 1040. The number of "wage earners" earning those wages was derived as follows:

1. For "non-joint" returns it was assumed that all wages reported on the return were earned by one wage earner.
2. For "joint" returns there were two possibilities:
   a. There were no W-2 Forms or W-2 Forms for only one wage earner attached to the Form 1040. In this case, it was assumed that all the wages reported on the return were earned by one wage earner.
   b. There were W-2 Forms for more than one wage earner attached to the Form 1040. In this case, it was assumed that the wages reported on the return were earned by two wage earners.

Table 3.—Summary of wage data tabulated by the Internal Revenue Service from individual tax returns filed for tax years 1983-84

Calendar year	Number of tax returns	Number of wage earners	Amount of wages	Average wage per wage earner
1983	80,253,955	100,409,760	$1,571,430,639,196	$15,650.18
1984	82,309,837	103,296,977	1,711,648,448,176	16,570.17

Because the required automatic determinations for 1986 must be published by November 1, 1985, it is not possible to include all returns for the year in the tabulation of tax returns. The IRS estimates that the number of tax returns for 1983 and 1984 represent about 95 percent of the total individual income tax returns for each year that would ultimately be processed. The average wages per wage earner calculated directly from the IRS data are $15,650.18 and $16,570.17 for 1983 and 1984, respectively.

2. AVERAGE WAGES FOR INDEXING FOR 1984

In order to construct an average wage figure for 1984 for use in indexing that was consistent with the published series for 1951-83, the annual percentage increase from 1983 to 1984 as measured by the IRS averages was used to increase the published SSA average wage for 1983 of $15,239.24. Thus, the 1984 indexing average wage was determined by multiplying the published average wage for 1983 by the ratio of the average annual wage for 1984, from IRS data, to the average annual wage for 1983, from IRS data, and rounding the result to the nearest cent. The calculation is as follows:

Average wage for 1984 = $15,239.24 × ($16,570.17 ÷ $15,650.18) = $16,135.07

Determination of Wage-Indexed Program Amounts for 1986

As mentioned in the introduction to this paper, the series of average wages serves a second purpose under the Social Security Act. In addition to its use in indexing earnings for purposes of benefit calculations, the average wages are used in the annual automatic determinations of various program parameters. Under sections 203, 213, 215, and 230 of the Act, the Secretary of Health and Human Services is required to determine annually the following amounts:

1. The retirement earnings test monthly exempt amounts which are to be effective with respect to taxable years ending in the given calendar year;
2. The amount of earnings a person must have to be credited with quarters of coverage in the given calendar year;
3. The dollar amounts (or bend points) in the formulas used to compute the PIA and the maximum family benefit amount for any individual first eligible for OASDI benefits in the given calendar year;
4. The amount of the contribution and benefit base which is to be effective with respect to remuneration paid, and taxable years beginning, in the given calendar year;
5. The contribution and benefit base that would have been effective for the given calendar year under section 230 of the Act as in effect prior to the enactment of the 1977 amendments, i.e., the "old-law" wage base.

With the exception of certain ad hoc increases specified in the law, which will be noted below, the sections of the law cited above provide for automatic adjustments in each of these amounts. Each automatic adjustment becomes effective in the year following the year in which determinations of the automatic adjustments are made. In determining each of the amounts that are subject to automatic adjustment, the law specifies a formula which automatically produces a mathematical result based on reported statistics. In each case, the formula is designed to keep each of the amounts up to date as average wage levels change.

In general, these formulas require that the given amounts vary according to changes in average wages that are measured from some specified base years through the year which falls 2 years before the year for which the automatically determined amounts will become effective. Thus, for example, each of the recently determined amounts effective for calendar year 1986 depends on certain increases in average wages measured through 1984. This 2-year lag is merely the resolution of the technical problem of the delay in the collection of the annual wage data. The determination of the average wage figure for a given year and the determination of the corresponding automatic adjustments of program amounts thus normally take place in October of the year following the year for which the average wage is being determined (which is the year that precedes the effective year for the determined program amounts). The average wage amount and the corresponding items listed in 1-4, above, are published in the Federal Register (usually by November 1 preceding the effective year for the determined amounts) as required by law. There is no legal requirement to publish an announcement of the determination of the "old-law" base (item 5 above), which has a more limited use under the Act. In the past, an official announcement was usually made in the Federal Register at some later date. However, the 1986 "old-law" base was published in the Federal Register along with the other automatic determinations for 1986. This practice will probably be followed in future years.

In the following sections, we describe each of the automatically adjusted program amounts and give the details of the automatic adjustments that were made for these program amounts for 1986. Before describing the various indexing procedures, it should be noted that there are two slightly different concepts being used. In one case (the contribution and benefit bases and the retirement earnings test exempt amounts), the indexing is a stepwise year-to-year procedure with the newly adjusted amounts for a given year being determined from wage increases applied to the amount in effect for the preceding year. In the other case (the quarter-of-coverage amount and the formula bend points), the indexing is accomplished by applying the appropriate wage increases to fixed base year amounts. For the quarter-of-coverage amount, the base year is 1978; while for the formula bend points, the base year is 1979. Of course, because of the multiplicative nature of the indexing procedures, the differences resulting from the application of these two methods are due entirely to the cumulative effects of the rounding methods specified in the law.

1. THE RETIREMENT EARNINGS TEST EXEMPT AMOUNTS

Under the Social Security program, the retirement earnings test annual exempt amount is the maximum amount that a Social Security beneficiary, who is subject to the retirement earnings test, may earn in a year and still receive all of his or her benefits for the year. The corresponding monthly exempt amount is equal to one-twelfth of the annual amount and is used in the operation of the monthly retirement earnings test. Under the monthly test, regardless of the amount of an individual's annual earnings, that individual (and any other person entitled to benefits based on such individual's earnings) may receive the entire benefit for any month that is both (1) a month for which the individual is entitled to benefits and (2) a month in which the individual does not have earnings in excess of the monthly exempt amount. Under a provision in the 1977 amendments, the monthly retirement earnings test generally applies only in the first year in which such a month occurs, although revisions to the law contained in Public Law 96-473 provided for certain exceptions to this rule.

The 1977 amendments also provided a higher retirement earnings test exempt amount for beneficiaries aged 65 and over than for beneficiaries under age 65. For beneficiaries aged 65 and over, the annual retirement earnings test exempt amount was specified in the law for years 1978 through 1982. After 1982 it is subject to the automatic increase provision in section 203(f)(8) of the Act. Beginning in 1983, the retirement earnings test was made inapplicable for ages 70 and over. This section also provides for automatic increases in the retirement earnings test exempt amount for beneficiaries under age 65, and is applicable in determining the exempt amounts for such beneficiaries effective for each year after 1978. The section further provides that automatic increases in the exempt amounts become effective in a year only if an automatic cost-of-living increase in Social Security benefits became effective in the preceding year. Such an automatic benefit increase of 3.1 percent becomes effective in December 1985.

For 1986, the retirement earnings test monthly exempt amounts were determined according to the automatic increase provisions. That is, the 1986 retirement earnings test monthly exempt amounts were obtained by multiplying the corresponding amounts for 1985 by the ratio of the average wage for 1984 to the average wage for 1983, with the resulting products being rounded to the nearest multiple of $10. The corresponding annual exempt amounts were determined as 12 times the monthly amounts.

Since the retirement earnings test monthly exempt amount for persons under age 65 for 1985 was $450, the amount for 1986 was calculated as follows:

$450 × ($16,135.07 ÷ $15,239.24) = $476.45
or $480 to the nearest multiple of $10.

The corresponding annual amount for 1986 is $5,760.

The monthly exempt amount for persons aged 65 to 69 was $610 for 1985. Therefore, the amount for 1986 was calculated as follows:

$610 × ($16,135.07 ÷ $15,239.24) = $645.86
or $650 to the nearest multiple of $10.

The corresponding annual amount for 1986 is $7,800.

2. *AMOUNT OF EARNINGS REQUIRED FOR A QUARTER OF COVERAGE*

A quarter of coverage is the basic unit for determining a worker's insured status under the Social Security program. The 1977 amendments provide that in any calendar year after 1977 an individual will be credited with 1 quarter of coverage up to a total of 4, for each multiple of a specified amount of wages and self-employment income earned in that year. The specified amount for calendar year 1978 was $250. The amounts for years after 1978 are determined under the automatic increase provision in section 213(d)(2). That is, the amount required for a quarter of coverage in 1986 was determined by multiplying the 1978 amount of $250 by the ratio of the average wage for 1984 to the average wage for 1976, with the resulting product rounded to the nearest multiple of $10. Thus the amount for 1986 was calculated as follows:

$250 × ($16,135.07 ÷ $9, 226.48) = $437.19
or $440 to the nearest multiple of $10.

3. *BEND POINTS IN PIA FORMULA AND MAXIMUM FAMILY BENEFIT FORMULA*

The formula used to compute an individual's PIA is based on the individual's Average Indexed Monthly Earnings (AIME). For persons newly eligible for benefits in 1979, the formula is:

90 percent of the first $180 of AIME, plus
32 percent of AIME in excess of $180 but not in excess of $1,085, plus
15 percent of AIME in excess of $1,085.

The bend points in the 1979 PIA formula are the two AIME figures $180 and $1,085. For persons newly eligible for benefits in 1980 or later, the bend points are determined under the automatic provision in section 215(a)(1)(B). (For further details on the calculation of benefits under present law, see Actuarial Note No. 111, *Computing a Social Security Benefit After the 1980 and 1981 Amendments* by Steven F. McKay, F.S.A.)

The formula used to compute the maximum amount of total monthly benefits payable on the basis of the earnings of an individual is based on the individual's PIA. For persons newly eligible for benefits in 1979, the formula is:

150 percent of the first $230 of PIA, plus
272 percent of the PIA in excess of $230 but not in excess of $332, plus
134 percent of the PIA in excess of $332 but not in excess of $433, plus
175 percent of the PIA in excess of $433.

The bend points in the 1979 maximum family benefit formula are the three PIA figures: $230, $332, and $433. For persons newly eligible for benefits in 1980 or later, the bend points are determined under the automatic provision in section 203(a)(2).

The sections cited above provide that, for a given year after 1979, each of the bend points in the benefit formulas must be determined by multiplying the corresponding bend points in the 1979 benefit formulas by the ratio of the average wage for the calendar year 2 years before the given year to the average wage for 1977, with the resulting products being rounded to the nearest dollar. Thus, the appropriate average wage ratio is $16,135.07 ÷ $9,779.44 for determining the 1986 bend points. Multiplying the bend points in the 1979 benefit formulas by this average wage ratio resulted in the following bend points for the 1986 benefit formulas:

Bend points in benefit formulas	1979 bend points	Product of 1979 bend points and average wage ratio	Bend points for 1986
PIA formula:			
First bend point	$180	$296.98	$297
Second bend point..	1,085	1,790.14	1,790
Maximum family benefit formula:			
First bend point	230	379.48	379
Second bend point..	332	547.77	548
Third bend point.....	433	714.41	714

It should be noted that the Disability Amendments of 1980 (Public Law 96-265) provide for a modification to the calculation of the maximum family benefits described above in the case of a disabled worker eligible for benefits after 1978 who was never entitled to disability benefits before July 1980. Under these provisions, the maximum family benefit is calculated as the lesser of (1) 150 percent of the worker's PIA, or (2) 85 percent of the worker's AIME, but no less than 100 percent of the worker's PIA.

4. *CONTRIBUTION AND BENEFIT BASE*

The contribution and benefit base is the maximum annual amount of earnings on which an employee or a self-employed person must pay Social Security tax contributions. It is also the maximum annual amount which may be credited toward benefits in computing the amount a beneficiary may receive under the Social Security program. As modified by the 1977 amendments, section 230(c) of the Act specifies the amount of the contribution and benefit base in effect for each year 1978-81. For calendar years after 1981, the contribution and benefit bases are again determined under the automatic increase provisions of section 230(b). In particular, the contribution and benefit base for 1986 was determined by multiplying the base for 1985 by the ratio of the average wage for 1984 to the average wage for

1983, with the resulting product being rounded to the nearest multiple of $300.

Since the base for 1985 was $39,600, the 1986 contribution and benefit base was determined as follows:

$39,600 × ($16,135.07 ÷ $15,239.24) = $41,927.86

or $42,000 to the nearest multiple of $300.

5. CONTRIBUTION AND BENEFIT BASE UNDER PROVISIONS IN "OLD LAW"

The 1977 amendments modified section 230 of the Act by substituting ad hoc increases in the contribution and benefit base in each year 1979-81 that were larger than the increases that would have otherwise resulted from the automatic increase provisions of the law. However, each year, under sections 215(a) and 230(c) and (d), the contribution and benefit base that would have been effective in the following year, under section 230 as in effect before the 1977 amendments, must be determined. The "old-law" base in effect for 1985 was $29,700. Therefore, the 1986 "old-law" base was determined by multiplying the 1985 "old-law" base by the ratio of the average wage for 1984 to the average wage for 1983, with the resulting product being rounded to the nearest multiple of $300. In particular, the 1986 "old-law" base was calculated as follows:

$29,700 × ($16,135.07 ÷ $15,239.24) = $31,445.90

or $31,500 to the nearest multiple of $300.

The "old-law" base is used for the given year in crediting workers with a "year of coverage," for the purpose of computing special minimum benefits payable under section 215(a). A worker who has covered earnings in a year amounting to at least 25 percent of the "old-law" base for that year is credited with a year of coverage for the year.

Under sections 230(c) and (d), the "old-law" base for a year is also used for certain purposes under the Railroad Retirement program and under the Employee Retirement Income Security Act of 1974 (ERISA). Under the Railroad Retirement program, the "old-law" base is used for purposes of determining:

1. Employee and employer tax liability under sections 3201(a) and 3221(a) of the Internal Revenue Code of 1954;
2. The portion of the employee representative tax liability under section 3211(a) of the Internal Revenue Code of 1954 which results from the application of the 14.75-percent rate specified therein; and
3. Average monthly compensation under section 3(j) of the Railroad Retirement Act of 1974, but not annuity amounts determined under sections 3(a) or 3(f)(3) of such Act.

Under ERISA, the "old-law" base for a year is used to index from 1974 the $750 per month maximum pension benefit guaranteed by the Pension Benefit Guaranty Corporation for benefit plans terminating in the year, as provided under section 4022B of ERISA as amended by Public Law 96-364.

Federal Register Announcements

1. *Cost-of-Living Increase in Benefits Under Titles II and XVI for 1985; Average of the Total Wages for 1983; Contribution and Benefit Base, Quarter of Coverage Amount, Retirement Earnings Test Exempt Amounts, and Formulas for Computing Benefits for 1985; Old-Age, Survivors, and Disability Insurance (OASDI) Fund Ratio for 1984; and Tables of Benefit Amounts for 1985*—Vol. 49, No. 212, October 31, 1984, pp. 43775-43779.
2. *1985 Contribution and Benefit Base Under Pre-1977 Amendment Law*—Vol. 50, No. 56, March 22, 1985, pp. 11562-11563.
3. *Cost-of-Living Increase in Benefits Under Titles II and XVI for 1986; Average of the Total Wages for 1984; Contribution and Benefit Base, Quarter of Coverage Amount, Retirement Earnings Test Exempt Amounts, Formulas for Computing Benefits and "Old-Law" Contribution and Benefit Base for 1986; Old-Age, Survivors, and Disability Insurance (OASDI) Fund Ratio for 1985; and Tables of Benefit Amounts for 1986*—Vol. 50, No. 211, October 31, 1985, pp. 45558-45572.