1999 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND DISABILITY INSURANCE TRUST FUNDS

COMMUNICATION

FROM

THE BOARD OF TRUSTEES, FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND DISABILITY INSURANCE TRUST FUNDS

TRANSMITTING

THE 1999 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND THE FEDERAL DISABILITY INSURANCE TRUST FUNDS, PURSUANT TO SECTION 201(C)(2) OF THE SOCIAL SECURITY ACT, AS AMENDED

LETTER OF TRANSMITTAL

BOARD OF TRUSTEES OF THE
FEDERAL OLD-AGE AND SURVIVORS INSURANCE
AND DISABILITY INSURANCE TRUST FUNDS,
Washington, D.C., March 30, 1999

The Honorable J. Dennis Hastert
Speaker of the House of Representatives
Washington, D.C.

The Honorable Albert Gore, Jr.
President of the Senate
Washington, D.C.

Gentlemen:

We have the honor of transmitting to you the 1999 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance Trust Fund and the Federal Disability Insurance Trust Fund (the 59th such report), in compliance with section 201(c)(2) of the Social Security Act.

Respectfully,

/S/
Robert E. Rubin, *Secretary of the Treasury, and Managing Trustee of the Trust Funds.*

/S/
Alexis M. Herman, *Secretary of Labor, and Trustee.*

/S/
Donna E. Shalala, *Secretary of Health and Human Services, and Trustee.*

/S/
Kenneth S. Apfel, *Commissioner of Social Security, and Trustee.*

/S/
Stephen G. Kellison, *Trustee.*

/S/
Marilyn Moon, *Trustee.*

/S/
John R. Dyer, *Principal Deputy Commissioner of Social Security , and Secretary, Board of Trustees.*

CONTENTS

TABLES

FIGURES

I. OVERVIEW

A. INTRODUCTION

The Old-Age, Survivors, and Disability Insurance (OASDI) program in the United States provides protection against the loss of earnings due to retirement, death, or disability. The OASDI program consists of two separate parts which pay monthly benefits to workers and their families—Old-Age and Survivors Insurance (OASI) and Disability Insurance (DI). Under OASI, monthly benefits are paid to retired workers and their families and to survivors of deceased workers. Under DI, monthly benefits are paid to disabled workers and their families.

The Board of Trustees was established under the Social Security Act to oversee the financial operations of the Federal Old-Age and Survivors Insurance Trust Fund and the Federal Disability Insurance Trust Fund. The Board is composed of six members, four of whom serve automatically by virtue of their positions in the Federal Government: the Secretary of the Treasury, who is the Managing Trustee, the Secretary of Labor, the Secretary of Health and Human Services, and the Commissioner of Social Security. The other two members are appointed by the President and confirmed by the Senate to serve as public representatives: Stephen G. Kellison and Marilyn Moon are currently serving 4-year terms that began on July 20, 1995.

The Social Security Act requires that the Board, among other duties, report annually to the Congress on the financial and actuarial status of the OASI and DI Trust Funds. This annual report, for 1999, is the 59th such report.

B. HIGHLIGHTS

Important developments since the 1998 Annual Report was issued are shown below:

- During calendar year 1998, OASDI benefits amounting to $375.0 billion were paid to retired and disabled workers and their families, and to survivors of deceased workers.
- The number of persons receiving monthly OASDI benefits at the end of December 1998 was 44.2 million.
- In 1998, an estimated 148 million people worked in jobs covered by the OASDI program and paid OASDI contributions on their earnings.
- Income to the combined OASI and DI Trust Funds amounted to $489.2 billion in calendar year 1998, and expenditures were $382.3 billion. The assets of the combined funds, therefore, increased by $106.9 billion, from $655.5 billion at the end of December 1997 to $762.5 billion at the end of December 1998.
- Assets at the beginning of the year, as a percentage of expenditures during the year, increased from 171 percent at the beginning of 1998 to an estimated 194 percent at the beginning of 1999, for the combined OASI and DI Trust Funds.
- Interest earnings on the invested assets of the combined OASI and DI Trust Funds were $49.3 billion in calendar year 1998. This represented an effective annual interest rate of 7.2 percent, earned by the combined assets during calendar year 1998. During the same period, the average interest rate on new securities purchased by the trust funds was 5.6 percent.
- Administrative expenses for the OASDI program were $3.5 billion in calendar year 1998, or about 0.9 percent of benefit payments in the year.
- An automatic benefit increase of 1.3 percent became effective for December 1998. The OASDI contribution and benefit base was increased from $68,400 for 1998, to $72,600 for 1999.

The major findings of this report are summarized below:

Short-Range Results

- In the short range (i.e., the next 10 years) the combined assets of the OASI and DI Trust Funds are expected to increase from the current level of $762.5 billion at the end of calendar year 1998, or 194 percent of estimated expenditures in 1999, to $2,327 billion, or 350 percent of annual expenditures, at the beginning of 2009, based on the intermediate assumptions.

- The assets of the OASI Trust Fund are expected to increase rapidly during the next 10 years, from 200 percent of annual expenditures at the beginning of 1999 to 386 percent of annual expenditures at the beginning of 2009, based on the intermediate assumptions.

- The assets of the DI Trust Fund are expected to increase from 153 percent of annual expenditures at the beginning of 1999 to 213 percent of annual expenditures at the beginning of 2004, based on the intermediate assumptions. While the assets of the fund, in nominal dollars, continue to grow during the subsequent 5 years, assets relative to annual expenditures begin to decline in 2004, becoming 176 percent at the beginning of 2009.

- The combined OASI and DI Trust Funds, as well as each fund separately, are adequately financed over the next 10 years and meet the short-range test for financial adequacy.

Long-Range Results

- The assets of the combined OASI and DI Trust Funds are expected to continue growing over the next several years, based on the intermediate assumptions. By the end of 2021, the assets are estimated to reach $4.46 trillion, in nominal dollars. The assets are then estimated to decline until the funds are exhausted in 2034.

- In the long range (i.e., the next 75 years) the difference between the summarized income and cost rates for the OASDI program is a deficit of 2.07 percent of taxable payroll based on the intermediate assumptions, somewhat smaller than the difference of 2.19 percent in last year's report. The assets of the combined OASI and DI Trust Funds are estimated to be depleted under present

law in 2034 based on the intermediate assumptions. At that time, the estimates indicate that annual tax revenues would be sufficient to cover 71 percent of annual expenditures.

- On a combined basis, the OASDI program is not in "close actuarial balance" over the next 75 years. In addition, the individual OASI and DI Trust Funds are not in close actuarial balance. These results are the same as those shown in the 1998 Annual Report.

- With the retirement of the "baby-boom" generation starting in about 2010, OASDI costs will increase rapidly relative to the taxable earnings of workers. By the end of the 75-year projection period, the OASDI income rate and cost rate are estimated to reach 13.4 and 19.8 percent, respectively, under the intermediate assumptions, resulting in an annual deficit of about 6.4 percent. Thus, annual tax revenue would be sufficient to cover only about $^2/_3$ of annual expenditures at the end of the 75-year period.

- The cost of the OASDI program is estimated to rise from its current level of 4.5 percent of gross domestic product (GDP) to 7.0 percent of GDP by the end of the 75-year projection period, and the annual deficit is estimated to be 2.3 percent of GDP at the end of the 75-year projection period.

Estimated Operations of the Trust Funds

- Under the intermediate assumptions, the excess of OASDI tax revenues over expenditures until 2014, together with interest earnings on the trust funds, will result in a rapid accumulation of assets for the combined OASI and DI Trust Funds during this period. However, total income is estimated to fall short of expenditures beginning in 2022 and in each year thereafter. In this circumstance, trust fund assets would be redeemed to cover the difference until the assets of the combined funds are exhausted in 2034.

- The DI Trust Fund is expected to increase until 2009, and then to decline steadily until its assets are exhausted in 2020. Because DI program growth has fluctuated widely in the past, it is essential that the program's future experience be monitored closely and that action be taken soon to address the DI Trust Fund's actuarial imbalance.

- The assets of the OASI Trust Fund are expected to increase until 2024, and then to decline until they are exhausted in 2036. Because the OASI program is not in close actuarial balance, the long-range deficit of the OASI Trust Fund should be addressed.
- It is important to address the financing of both the OASI and DI programs soon to allow time for phasing in any necessary changes and for workers to adjust their retirement plans to take account of those changes. The importance of this is emphasized by the high priority that the President and the Congress are giving to the resolution of the program's long-range financial problems.

Reasons for changes from last year's report to this report in the long-range actuarial balance of the OASDI program, based on the intermediate assumptions, are shown in table I.B1. Also shown is the estimated effect associated with each reason for change. For a more detailed discussion of these changes, see section II.F2g.

Table I.B1.—Change in Actuarial Balance Over the Next 75 Years Based on Intermediate Assumptions by Reason for Change

[As a percentage of taxable payroll]

Item	OASI and DI, combined
Actuarial balance shown in last year's report	-2.19
Changes in actuarial balance due to changes in:	
Valuation period	-.08
Demographic assumptions	+.03
Economic assumptions	+.15
Methods	+.02
Total change in actuarial balance	+.12
Actuarial balance shown in this report	-2.07

C. TRUST FUND FINANCIAL OPERATIONS

The various sources of income to the OASDI program, and categories of expenditures, can be illustrated by reference to the actual transactions during calendar year 1998. Table I.C1 summarizes these transactions.

Table I.C1.—Summary of OASDI Trust Fund Operations

Type of income or expenditure	Amount in calendar year 1998 (in billions)		
	OASI	DI	OASDI
Total income	$424.8	$64.4	$489.2
Payroll taxes	371.2	59.0	430.2
Taxation of benefits	9.1	.6	9.7
Interest	44.5	4.8	49.3
Total expenditures	332.3	49.9	382.3
Benefit payments	326.8	48.2	375.0
Railroad Retirement financial interchange	3.7	.2	3.8
Administrative expenses	1.9	1.6	3.5

Note: Totals do not necessarily equal the sums of rounded components.

1. Income

Most OASDI income consists of the taxes paid by employees, employers, and the self-employed on earnings covered by the OASDI program. These taxes (also called contributions) are collected under the Federal Insurance Contributions Act and the Self-Employment Contributions Act. The taxes are paid on earnings up to a specified maximum annual amount (the "contribution and benefit base"), which was $68,400 for 1998. Table I.C2 shows the allocation of the OASDI tax rates by program for 1998.

Table I.C2.—Tax Rates for 1998

	OASI	DI	OASDI
Tax rate for employees and employers, each (in percent)	5.35	0.85	6.20
Tax rate for self-employed persons (in percent)	10.70	1.70	12.40

The tax rates for OASDI are not scheduled to change from their current values under present law. The maximum amount of earnings subject to OASDI taxes increases automatically each year, based on the increase in the average wage for all workers. In calendar year 1998, OASDI payroll tax income amounted to $430.2 billion, representing 88 percent of the total income received under the OASDI program during the year.

Beneficiaries whose "adjusted gross income" exceeds certain threshold amounts must pay income taxes on up to 85 percent of their annual OASDI benefits. The income tax revenue that results from taxing up to 50 percent of those benefits, together with taxes withheld from the benefits paid to nonresident aliens, is credited to the OASI and DI Trust Funds and totaled $9.7 billion in 1998. (The additional tax revenue that results from taxing up to 85 percent of benefits is credited to the Hospital Insurance (HI) Trust Fund.)

The final source of income to the trust funds is from interest on the invested assets of the funds. By law, these investments must be in interest-bearing securities of the U.S. Government or in securities guaranteed by the United States. Interest from investments in 1998 amounted to $49.3 billion. This represented an effective annual interest rate of 7.2 percent, earned by the assets of the trust funds during calendar year 1998. During the same period, the average interest rate on new securities purchased by the trust funds was 5.6 percent.

2. Expenditures

In 1998, benefit payments totaling $375.0 billion were made to retired and disabled workers and their families, and to survivors of deceased workers. Such payments represent 98 percent of all expenditures by the OASDI program. An additional $3.8 billion was transferred from the OASI and DI Trust Funds to the Railroad Retirement program in 1998, under provisions of the law requiring a financial interchange between the two programs. The cost of administering the OASDI program in 1998 was $3.5 billion, or about 0.9 percent of total benefits paid during the year.

3. Trust Fund Assets

In 1998, total income was $489.2 billion and total expenditures were $382.3 billion. The assets of the OASI and DI Trust Funds therefore increased by a net total of $106.9 billion during the year, from $655.5 billion to $762.5 billion. The invested assets of the trust funds are backed by the full faith and credit of the U.S. Government, in the same way as other public-debt obligations of the United States.

When program income exceeds expenditures, the trust fund serves as a vehicle to help fund a portion of the program's accruing financial obligations in advance. In particular, as invested assets continue to

increase over the next 20 or so years, interest earnings will become a larger share of total trust fund income. In 1998, interest income to the combined OASI and DI Trust Funds represented 10.1 percent of total OASDI income. On a combined basis, interest income in 2008 would represent an estimated 15.9 percent of total income.

Conversely, if income to a trust fund is inadequate to defray expenditures, the fund's assets serve as a contingency reserve to cover the shortfall temporarily. For example, the expenditures of the DI Trust Fund exceeded income to the fund for most of 1994 (prior to enactment of the OASDI tax rate reallocation), necessitating a redemption of assets to cover the difference. In the event of recurring shortfalls, the availability of trust fund assets allows time for the enactment and implementation of legislation to restore financial stability to the program.

D. INTRODUCTION TO ACTUARIAL ESTIMATES

The financial and actuarial status of the OASDI program is traditionally evaluated for both short-range (the next 10 years) and long-range (the next 75 years) periods. The various income and expenditure items described in the previous section are estimated separately, and then combined to form estimates of the future level of trust fund assets.

A period of 75 years is used to evaluate the long-range actuarial status of the program in order to obtain the full range of financial commitments that will be incurred on behalf of the great majority of current program participants. For example, a group of workers now entering the labor force at age 22 will work and pay OASDI taxes for the next 45 years before reaching age 67. At age 67, those surviving may retire and begin to receive full benefits (i.e., not reduced for early retirement). Some of them may live and receive benefits for more than 30 years. Thus, a 75-year projection period will include the entire working and retired life span of the great majority of workers now contributing to the program, as well as those now receiving benefits.

The actual future income and expenditures of the OASI and DI Trust Funds will depend on many factors, including future economic and demographic conditions. Because of the inherent uncertainty in estimates for as long as 75 years into the future, projections are shown in this report under three alternative sets of assumptions regarding future economic and demographic trends. Designated as alternatives I, II, and III, these sets range from low cost (alternative I) to high cost (alternative III), with alternative II representing the set of intermediate cost assumptions. The low cost set is more optimistic from the standpoint of OASDI financing and the high cost set is more pessimistic. In the tables in this report, the intermediate estimates, which the Board of Trustees regards as their "best estimates," will be shown first followed by the low cost and high cost estimates.

The future income and expenditures of the OASDI program will, of course, also depend on the kinds of future policy changes that may be made in the program. The estimates presented in this report are based on the current OASDI program and, thus, do not reflect the effects of any future legislative changes that have not yet been enacted into law.

From the estimated income, expenditure, and asset amounts, a number of different measures are calculated for use in evaluating the

financial status of the program. Because of the difficulty in comparing dollar values for different periods, these measures are generally based on relative scales (although financial operations in nominal and inflation-adjusted dollar amounts are also available). These relative measures include (1) the annual amounts of future income and outgo as a percentage of the amount of earnings subject to the OASDI payroll tax, (2) the annual differences between these income and outgo figures, and (3) summarized values representing these figures over various periods. The level of trust fund assets relative to annual expenditures and the year in which the trust fund is projected to be exhausted are also presented as additional measures for evaluating the financial status of the program. Careful review of these measures provides a reasonably complete picture of the financial outlook for the OASDI program.

The program is also subject to two explicit tests of financial status (see section II.F)—a short-range test and a long-range test. The purpose of these tests is to provide objective criteria for determining whether or not the projected financial status of the OASDI program is considered satisfactory in each time period. The tests help highlight the need for corrective action when they are not met.

As usually required in the analysis of any complex subject, these summary tests should be considered in conjunction with a full understanding of the year-by-year patterns, trends, and other financial characteristics revealed by the underlying actuarial projections.

E. ECONOMIC AND DEMOGRAPHIC ASSUMPTIONS

Actual future income from OASDI payroll taxes and other sources, and actual future expenditures for benefits and administrative expenses, will depend upon a large number of factors: the size and composition of the population that is receiving benefits, the level of monthly benefit amounts, the size and characteristics of the work force covered under OASDI, and the level of workers' earnings. These factors will depend in turn upon future marriage and divorce rates, birth rates, death rates, migration rates, labor force participation and unemployment rates, disability incidence and termination rates, retirement age patterns, productivity gains, wage increases, cost-of-living increases, and many other economic and demographic factors.

While it is reasonable to assume that actual trust fund experience will fall within the range defined by the three alternative sets of assumptions used in this report, no definite assurance can be given that this will occur because of the uncertainty inherent in projections of this type and length. In general, a greater degree of confidence can be placed in the assumptions and estimates for the earlier years than for the later years. Nonetheless, even for the earlier years, the estimates are only an indication of the expected trend and potential range of future program experience.

The assumptions vary, in most cases, from year to year during the first 5 to 30 years before reaching their ultimate values for the remainder of the 75-year projection period. The following table summarizes the ultimate values assumed for the key economic and demographic factors underlying the actuarial estimates shown in this report. These ultimate values apply for years after 2029, with the exception of life expectancy, which is assumed to continue improving throughout the projection period.

Table I.E1.— Ultimate Economic and Demographic Assumptions

Ultimate assumptions	Intermediate	Low Cost	High Cost
Annual percentage change in:			
Average wage in covered employment	4.2	3.7	4.7
Consumer Price Index (CPI)	3.3	2.3	4.3
Real-wage differential (percent)	0.9	1.4	0.4
Unemployment rate (percent)	5.5	4.5	6.5
Annual interest rate (percent)	6.3	6.0	6.5
Total fertility rate (children per woman)	1.9	2.2	1.6
Life expectancy at birth in 2075 (combined average for men and women, in years)	81.8	78.8	85.7
Annual net immigration (in thousands)	900.0	1,150.0	750.0

1. Economic Assumptions

Consistent with past practice the Trustees conducted a comprehensive review and examination of all assumptions, as part of the preparation for the 1999 report. In particular, the assumptions in this year's report fully reflect the implications of the most recent announced changes in CPI methodology. In light of this year's review, the ultimate values of three important assumptions were changed.

- The intermediate CPI inflation rate assumption was lowered 0.2 percentage point, from 3.5 percent to 3.3 percent based on a Bureau of Labor Statistics (BLS) improvement in the CPI announced last year.
- Because the projected nominal interest rate earned on trust fund assets was left unchanged at 6.3 percent, the intermediate inflation-adjusted interest rate assumption increased from 2.8 percent to 3.0 percent, due to the lower CPI assumption.
- The intermediate unemployment rate assumption was lowered from 6.0 percent to 5.5 percent.

In mid-April 1998, after careful analysis, the BLS announced an improvement in the method of calculating the CPI by switching from an arithmetic to a geometric mean formula at a low level of aggregation beginning in January 1999. This change is expected to lower the future annual growth rate of the CPI by 0.2 percentage point. While announced too late to be included in the 1998 report, the effect of this change has been incorporated into the intermediate, low cost and high cost assumptions for the 1999 Trustees Report. That is, for each alternative, the ultimate annual CPI inflation rate was lowered by 0.2 percentage point compared to last year's assumption. As a consequence, the ultimate real interest rate assumption is higher by 0.2 percent in all three alternatives, because the Trustees did not change last year's nominal interest rate assumption.

The ultimate unemployment rate is 0.5 percentage point lower in the intermediate, low cost, and high cost assumptions for the 1999 Trustees Report than in the 1998 report. The lower unemployment rate assumptions reflect a careful analysis of past unemployment rate behavior including the more recent historical period of low inflation and low unemployment.

In addition, the projected ultimate annual growth rate for the GDP deflator was lowered by 0.2 percentage point due to the "pass through" effect of the CPI change on the GDP deflator as well as the Trustees' decision to maintain last year's assumption that ultimate

GDP-measured inflation is 0.1 percentage point lower than ultimate CPI-measured inflation. The projected ultimate annual growth rate in labor productivity (output per hour) was also left the same as in the 1998 report. Because the Trustees did not change either the inflation "wedge" or the productivity growth assumption, the long-range ultimate annual real wage differential in this year's report is unchanged from last year's 0.9 percent per year.

Revisions to the economic assumptions during the early years of the projection period have a net positive effect on the long-range actuarial balance. The changes reflect both recent actual data, which affect the starting point of the projections, and an assessment that some of the recent favorable economic performance, with low unemployment, low inflation, and faster than expected growth in both GDP and employment, will carry through into the early years of the projection period. Compared to the 1998 report, this year's report generally reflects assumptions of lower CPI increases, lower unemployment rates, higher productivity gains, faster labor force growth and a higher ratio of wages to total compensation throughout the first 10 years of the projection period. In combination, these changes produce somewhat higher levels of employment, productivity, real wages, and real GDP throughout the balance of the 75-year projection period.

2. Demographic Assumptions

The Trustees' review of the demographic assumptions resulted in ultimate demographic assumptions which are only slightly changed from those used in the 1998 report. Revisions of demographic assumptions for the early years of the projection period, based on data collected since the 1998 report, had little effect on the long-range estimates, with the exception of changes in the fertility rates.

While the ultimate rates of improvement in mortality are unchanged, the values for life expectancy are slightly higher because they reflect the accumulated difference in annual mortality rate assumptions through the first 25 years.

Based on recently available data for 1997, fertility rates in this report are higher than those estimated in last year's report. Because of the higher starting levels, the fertility rates during the first 25 years of the projection period are increased slightly over those used in the 1998 report.

These assumptions reflect a careful assessment of past data and future prospects. Other changes in assumptions and methods reflected in the estimates in this report are discussed in section II.F.

F. SHORT-RANGE ACTUARIAL ESTIMATES

The financial status of the OASDI program during the next 10 years (1999-2008) is measured by the estimated level of trust fund assets. Because of inflation, economic growth, and growth in the OASDI program, asset levels expressed in nominal dollar amounts are not comparable over long periods of time. For this reason, it is more informative to consider a relative measure of the program's financial condition.

For example, OASDI assets at the beginning of calendar year 1999 amounted to $763 billion, while assets at the beginning of 1960 were $22 billion. The asset level in 1999 would be sufficient to cover roughly 23 months of expenditures in the absence of other income. Assets in 1960, although much smaller in nominal dollars, could have covered about 22 months of expenditures and in that sense represented a contingency reserve of about the same level.

The ratio of trust fund assets at the beginning of a year to expenditures during the year is termed the "trust fund ratio." This ratio serves as the primary measure of the fund's financial adequacy in the short range. It is also used when applying an explicit test of short-range financial adequacy.

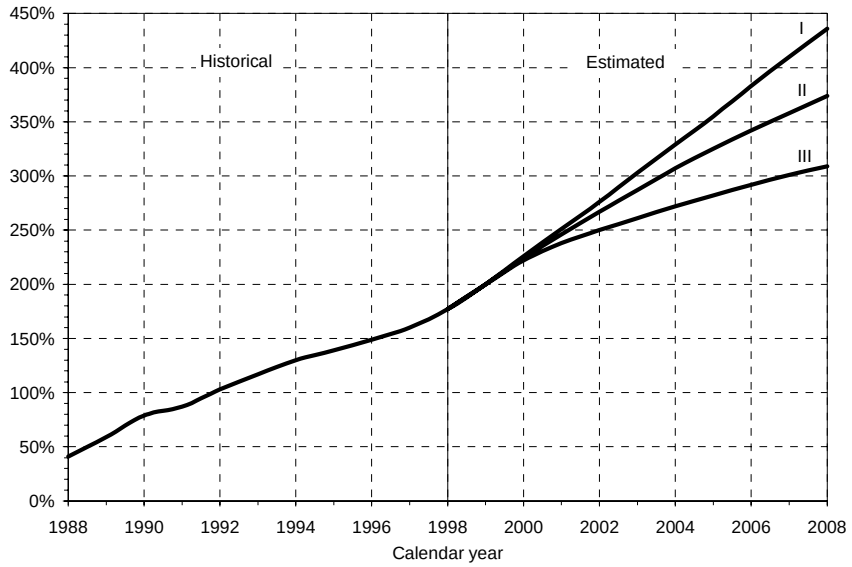
1. OASI Trust Fund

Figure I.F1 presents historical trust fund ratios for the OASI Trust Fund in 1988-98 and estimated ratios for 1999-2008 based on the alternative sets of assumptions.

As shown in figure I.F1, the OASI trust fund ratio is estimated to increase from 200 percent at the beginning of 1999 to 374 percent by 2008, based on the intermediate (alternative II) assumptions. The ratio is also estimated to increase during the next 10 years under the low cost (alternative I) assumptions. However, under the high cost (alternative III) assumptions the ratio is estimated to level off soon after the end of the short-range projection period. Because OASI assets are estimated to exceed 100 percent of annual expenditures throughout the next 10 years, the OASI Trust Fund meets the requirements of the Trustees' formal test of short-range financial adequacy. (This test is described in detail in the section titled "Actuarial Estimates" later in this report.) Thus, the financing scheduled under present law for the OASI Trust Fund is considered fully adequate to

meet future expenditures over this period and to provide for an adequate contingency reserve.

Figure I.F1.—OASI Trust Fund Ratios
[Assets as a percentage of annual expenditures]

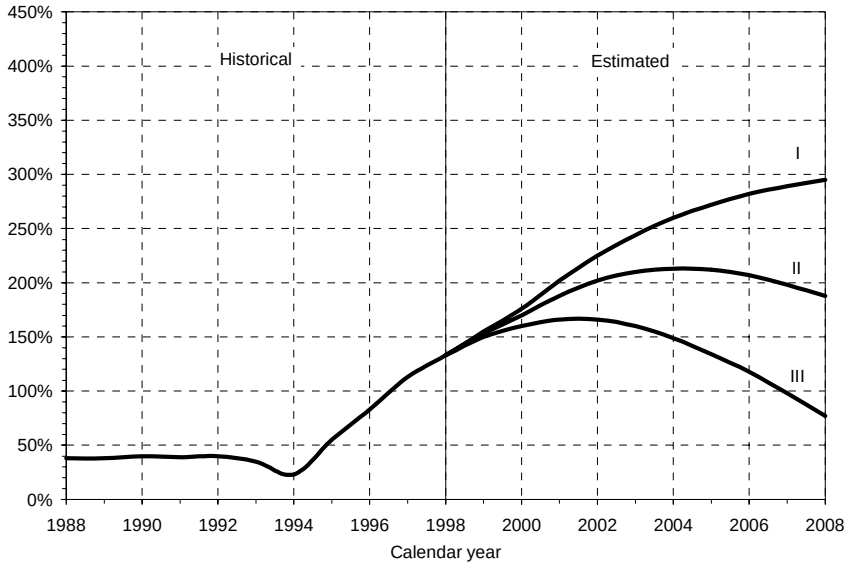


2. DI Trust Fund

As described in the 1995 Annual Report, legislation enacted in 1994 provided additional financing to the DI Trust Fund through a reallocation of a portion of the OASI tax rate. Largely as a result of this additional revenue, the DI Trust Fund is currently adequately financed for the short-range period. As shown in figure I.F2, the DI trust fund ratio is estimated to increase from 153 percent at the beginning of 1999 to 188 percent by 2008, based on the intermediate (alternative II) assumptions. Because DI assets exceeded the level of 1 year's expenditures at the beginning of 1999 and are estimated to remain above that level in 2000 and later, the DI Trust Fund meets the requirements of the Trustees' formal test of short-range financial adequacy under the intermediate assumptions.

However, as also shown in figure I.F2, under the high cost assumptions, not only does DI fail to meet the short-range test of financial adequacy, the DI Trust Fund is projected to be exhausted soon after the end of the short-range projection period. This situation is similar to projections made for the 1998 Annual Report.

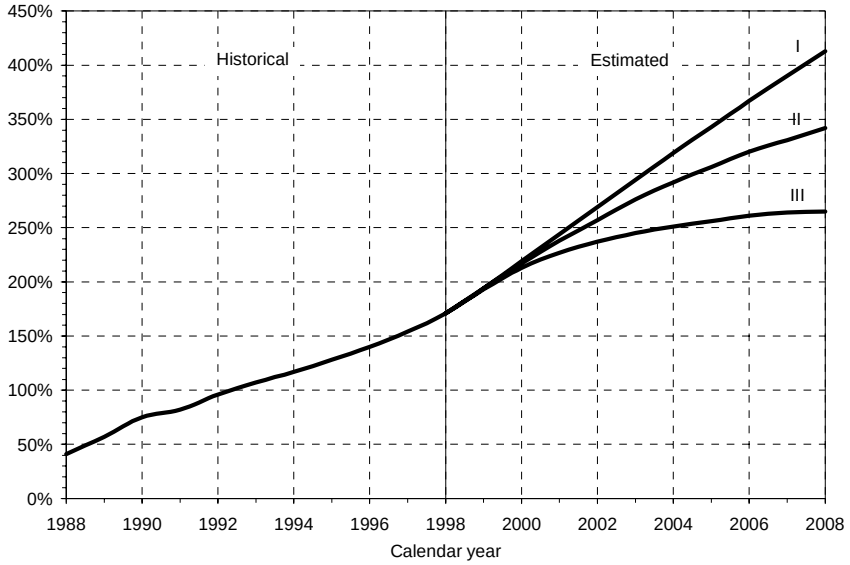
Figure I.F2.—DI Trust Fund Ratios
[Assets as a percentage of annual expenditures]



3. OASI and DI Trust Funds, Combined

Figure I.F3 summarizes the trust fund ratios for the OASI and DI Trust Funds, combined, in the recent past and estimates for the next 10 years.

Figure I.F3.—Trust Fund Ratios for OASI and DI Trust Funds, Combined
[Assets as a percentage of annual expenditures]



As shown, the trust fund ratio for OASI and DI on a combined basis is estimated to increase from 194 percent at the beginning of 1999 to 342 percent by 2008, based on the intermediate assumptions. Based on the low cost assumptions, the ratio would also increase throughout the 10-year period. Under the high cost assumptions, however, the ratio would level off after 2005, and begin to decline near the end of the short-range projection period. However, because the trust fund ratio for the combined funds is estimated to remain above 100 percent under the intermediate assumptions, the combined funds meet the short-range test of financial adequacy.

G. LONG-RANGE ACTUARIAL ESTIMATES

The long-range financial estimates provided in this section generally relate to the OASI and DI Trust Funds on a combined basis. However, because the OASI and DI programs are legally separate, a final assessment of the financial status of these funds must be provided on a separate basis, as is done later in this section. More detailed estimates for these trust funds, both separately and combined, can be found in section II.F2 of this report.

Each year estimates of the financial and actuarial status of the OASDI program are prepared for the next 75 years. Although financial estimates for periods as long as 75 years are inherently uncertain, the results can provide valuable information for policymakers. In particular, such estimates can indicate whether the program—as seen from today's vantage point—is considered to be in satisfactory financial condition.

As mentioned previously, a number of different measures are useful in evaluating the financial status of the trust funds over the next 75 years. In addition to the actuarial balance and the trust fund ratio, emphasis is placed on the relationship between the estimated future levels of tax income and expenditures for each year. The year-by-year patterns of this relationship are of particular interest.

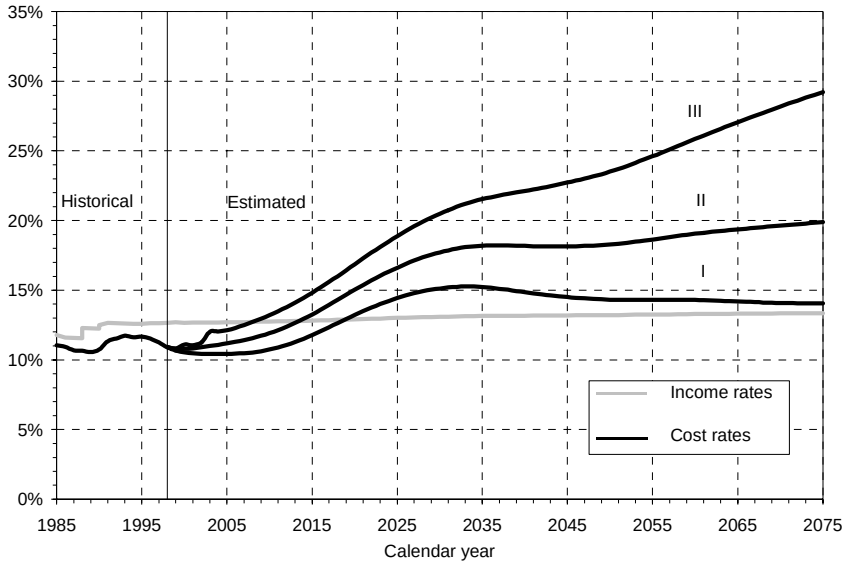
The estimates and measures described above provide a basis for analyzing the expected future cost and income of the OASDI program. In order to assess the actuarial status of the program a formal test for long-range "close actuarial balance" is applied.

1. Annual Income Rates, Cost Rates, and Balances

A comparison between past and estimated future OASDI income (from payroll taxes on covered earnings and income taxes on OASDI benefits) and OASDI expenditures (for benefits and administrative expenses credited to OASI and DI Trust Funds) is presented in figure I.G1. Included are historical data for the past 14 calendar years (1985-98) and estimates for the 75-year long-range projection period (1999-2073) under the three alternative sets of assumptions. These income and expenditure amounts are shown relative to the earnings in covered employment that are taxable under the OASDI program—referred to as "taxable payroll." The ratio of tax income (including both payroll taxes and income from taxation of benefits) to taxable

payroll is called the "income rate" and the ratio of expenditures to taxable payroll is the "cost rate."

Figure I.G1.—OASDI Income Rates and Cost Rates
[As a percentage of taxable payroll]



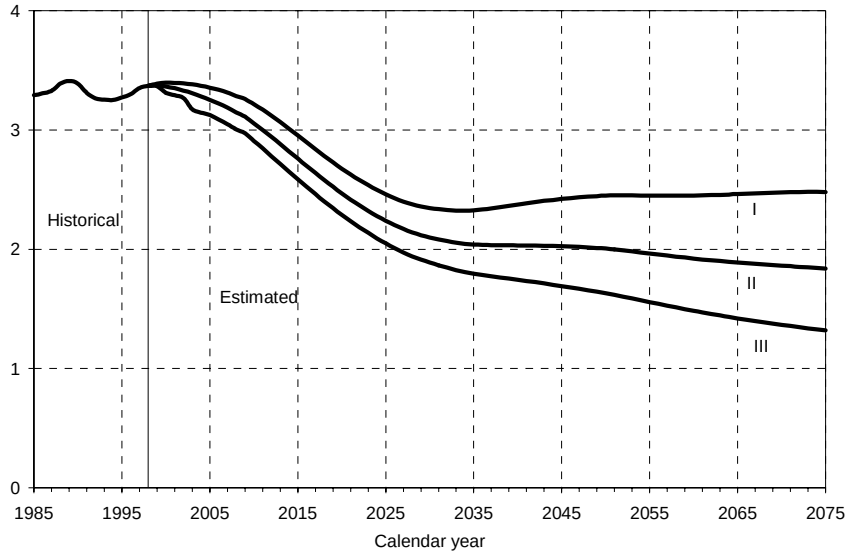
For calendar year 1999, the income rate for the OASDI program is estimated to be about 12.70 percent of taxable payroll. This rate is the sum of the combined tax rate payable by employees and employers, 12.40 percent, and the revenue from the income taxation of OASDI benefits that is credited to the trust funds, equivalent to 0.30 percent of taxable payroll. Since OASDI payroll tax rates are not scheduled to change in the future under present law, payroll tax income as a percentage of taxable payroll remains constant at about 12.40 percent. Income from the taxation of benefits will gradually increase as a percentage of taxable payroll, primarily because a greater proportion of benefits will become subject to taxation. Thus, the income rate is projected to increase somewhat from its current level, reaching about 13.35 percent of taxable payroll by 2073. The income rate projection shown in figure I.G1 is based on the intermediate set of assumptions (alternative II) only; the projections under the low cost and high cost sets of assumptions (alternatives I and III, respectively) are very similar.

As figure I.G1 indicates, the pattern of the estimated cost rates is much different from that of the estimated income rates. Costs as a percentage of taxable payroll are estimated to rise slowly until about 2010 (or to decline slowly, in the case of alternative I) and then to increase rapidly for about the next 20 years. Thereafter, cost rates are estimated to grow less rapidly (or to decline somewhat, in the case of alternative I). By 2073 the cost rate is estimated to reach 14.04 percent, 19.79 percent, and 28.78 percent under alternatives I, II, and III, respectively.

The primary reason that the estimated OASDI cost rate increases rapidly after about 2010 is that the number of beneficiaries is projected to increase more rapidly than the number of covered workers. Because the cost rate expresses expenditures (primarily payments to beneficiaries) as a percentage of taxable payroll (the taxable earnings of covered workers), there is a close relationship between the demographic characteristics of the population and the OASDI cost rate.

Figure I.G2 shows the estimated number of covered workers per OASDI beneficiary. In 1998, there were about 3.4 workers for every beneficiary. As indicated, this ratio is expected to decline substantially in the future under all three sets of assumptions. The most rapid decline will occur as the relatively large number of persons born during the "baby boom" (from the end of World War II through the mid-1960s) reaches retirement age and begins to receive benefits. At the same time, the relatively small number of persons born during the subsequent period of low fertility rates will comprise the labor force. Between 2030 and 2050, the number of workers per beneficiary is relatively stable as the "baby-boom" generation diminishes in size. After 2050, this ratio will continue to decline at a slower pace for the intermediate and high cost projections, reflecting the increasing numbers of beneficiaries due to projected increases in life expectancy. Based on the low cost assumptions, a slow increase in this ratio is projected to occur after 2034. By the end of the 75-year projection period, the number of workers per beneficiary is projected to decline to 2.5, 1.8, and 1.3 under the low cost (alternative I), intermediate (alternative II), and high cost (alternative III) assumptions, respectively.

Figure I.G2.—Number of Workers Per Beneficiary



The difference between the income rate and the cost rate in a given year is referred to as the "annual balance" for that year. The pattern of the projected OASDI annual balance depends significantly on the economic and demographic conditions assumed to occur in the future. Income rates are estimated to exceed cost rates until 2019, 2014, and 2009, under alternatives I, II, and III, respectively, resulting in positive annual balances. Thereafter, under the intermediate assumptions, the annual deficit is projected to rise rapidly, reaching 4.62 percent of taxable payroll for 2030 and 6.44 percent for 2073. Under alternative I, annual deficits rise to a peak of 2.26 percent of payroll for 2033, and decline steadily thereafter, falling below 1 percent by 2071. Under adverse conditions, as assumed in alternative III, the deficit would grow very rapidly, to over 15 percent of taxable payroll by 2073.

2. Summarized Income Rates, Cost Rates, and Balances

It is useful to consider the income and cost rates on a summarized basis over the three 25-year subperiods that make up the 75-year projection period. For this purpose, the annual income rates are summarized by calculating the present value of tax income for the subperiod

in question, and expressing it as a percentage of the present value of taxable payroll for that subperiod. ("Present values" are used in financial analysis to calculate the lump-sum equivalent value, at a particular point in time, of a series of future amounts or transactions. See the Glossary for additional information.) Similarly, a summarized cost rate is calculated, as the present value of expenditures for the subperiod, expressed as a percentage of the present value of taxable payroll for that subperiod. The following table shows these summarized rates for the OASDI program for the three 25-year subperiods.

Table I.G1.—OASDI Income and Cost Rates for 25-Year Subperiods

	Income rate	Cost rate	Balance
Intermediate:			
1999-2023	12.78	12.50	0.28
2024-2048	13.12	17.79	-4.67
2049-2073	13.28	18.99	-5.71
Low Cost:			
1999-2023	12.74	11.38	1.36
2024-2048	12.99	14.85	-1.85
2049-2073	13.05	14.24	-1.19
High Cost:			
1999-2023	12.82	13.70	-.88
2024-2048	13.28	21.18	-7.89
2049-2073	13.62	25.80	-12.19

A small positive balance is shown under the intermediate alternative II assumptions for the first subperiod; thereafter, the program is projected to experience substantial deficits, for the reasons outlined previously. Under the low cost alternative I assumptions, summarized tax income would also exceed summarized costs only for the first 25-year subperiod, with deficits diminishing to relatively low levels in the third subperiod. (The less favorable outlook for the second subperiod occurs under the low cost assumptions because the "baby-boom" generation is retiring throughout this period, while the assumed higher ultimate fertility rates have not yet had their full effect on the estimated numbers of workers.) If the high cost conditions of alternative III are experienced, substantial deficits are projected to occur for all three subperiods.

To assess the overall financial balance for the long range, it is customary to calculate summarized income rates and cost rates for the full 75-year valuation period. For this purpose, summarized income and cost rates are calculated on a present-value basis, as before. In addition, the summarized income rate is augmented by the value of trust fund assets on hand at the beginning of the period. Similarly, the summarized cost rate is adjusted to include the additional cost of accumulating trust fund assets at the end of the period equal to 100

percent of the following year's expenditures. The results of this calculation are shown in the following table.

Table I.G2.—OASDI Income and Cost Rates for 75-Year Valuation Period

	Income rate	Cost rate	Actuarial balance
Intermediate:			
1999-2073	13.49	15.56	-2.07
Low Cost:			
1999-2073	13.37	13.14	.23
High Cost:			
1999-2073	13.62	18.60	-4.97

The difference between the summarized income and cost rates for the 75-year valuation period is called the "actuarial balance" and ranges from a positive actuarial balance of 0.23 percent of taxable payroll under the low cost assumptions to a deficit of 4.97 percent under the high cost assumptions. Based on the intermediate assumptions, an actuarial deficit of 2.07 percent is projected, representing the difference between the summarized income rate of 13.49 percent and the corresponding cost rate of 15.56 percent.

The estimated actuarial deficit is smaller than the corresponding deficit of 2.19 percent of payroll in last year's report. If the only change for this year's report was to change the long-range valuation period from 1998-2072 to 1999-2073, the deficit for this year's report would have risen to 2.27 percent of payroll. However, there are a number of other changes that have the net effect of more than offsetting the increase in the deficit which results from the change in valuation period. The principal changes contributing to the improved actuarial balance are some slightly more favorable economic assumptions in the long term and stronger economic growth in the near term than was expected in last year's report. See section II.F2g for complete details on the change in actuarial balance from last year's report.

The size of the actuarial balance for any valuation period represents a measure of the program's financial adequacy for that period. The actuarial balance can be interpreted as the amount of change which, if made to the payroll tax rates scheduled under present law for each year in the period, would bring the program into exact actuarial balance. For example, if the 75-year actuarial deficit of 2.07 percent under intermediate assumptions were addressed by raising scheduled tax rates by 1.04 percent for employees and employers, each, and by 2.08 percent for the self-employed, then OASDI assets at the beginning of 1999, together with income from payroll taxes, interest, and other sources, would be just sufficient to meet all expenditures for the

long-range period and leave a trust fund level at the end of the period equal to about 100 percent of the following year's expenditures. Of course, there are numerous other changes to tax rates, revenue provisions, or benefit provisions that could also result in the elimination of the long-range actuarial deficit.

The 75-year actuarial balance is a convenient and widely used measure of the OASDI program's overall financial status. It is important to remember, however, that this summary measure reflects the combined effects of several very different periods, as previously described. Thus, while the use of summary measures such as the actuarial balance is often convenient, such measures should not be used as a substitute for a more complete understanding of the underlying year-by-year outlook.

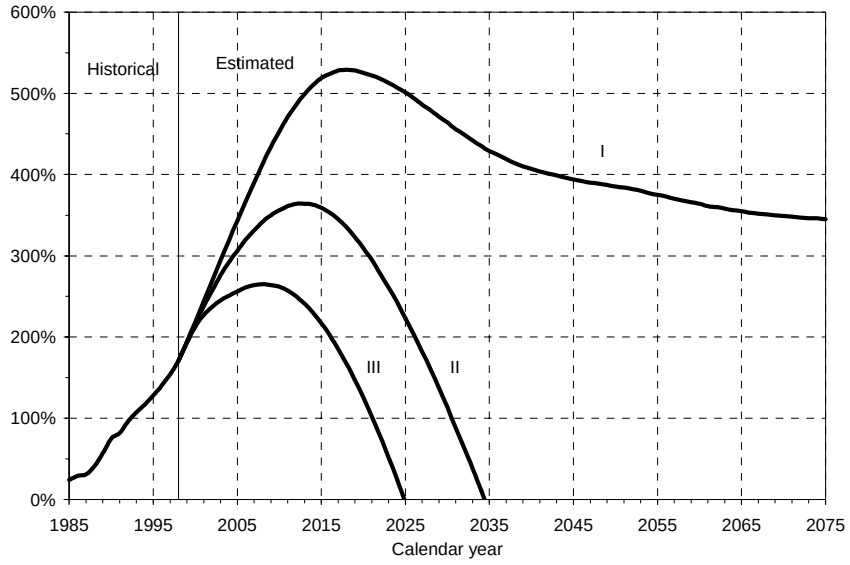
3. Trust Fund Ratios

As noted previously, the total income of the OASDI program currently exceeds total expenditures by a substantial margin. As a result, the assets of the combined trust funds are increasing rapidly. Under the intermediate alternative II assumptions, tax income is expected to exceed expenditures until 2014, when the cost of the program will start to increase more rapidly with the retirement of the "baby-boom" generation. Beginning with 2014, the tax income projected under present law is expected to be insufficient to cover program expenditures, making it necessary to draw upon the annual interest earned on trust fund assets to make up the shortfall. Total income, including interest earnings, is expected to exceed expenditures until 2022. It will then be necessary to draw on accumulated trust fund assets, effectively redeeming assets to make up the shortfall. If no corrective action were taken, trust fund assets would be exhausted by the end of 2034. At that time, the annual tax revenues of the combined trust funds would be sufficient to cover about 71 percent of annual expenditures. The resulting pattern of combined OASI and DI assets, expressed as a percentage of annual expenditures, is illustrated in figure I.G3 under each of the three alternative sets of assumptions.

At the beginning of 1999, the combined assets of the OASI and DI Trust Funds represented about 194 percent of combined expenditures estimated for the year. Based on the intermediate assumptions, assets would accumulate to a peak of 364 percent of expenditures in 2013, and would then decline steadily until exhaustion in 2034. Based on the intermediate estimates in last year's report, the peak fund ratio

for the combined funds was estimated to be 324 percent in 2012 and the year of exhaustion was estimated to be 2032.

Figure I.G3.—Trust Fund Ratios for OASI and DI Trust Funds, Combined
[Assets as a percentage of annual expenditures]



For OASI and DI, separately, the peak fund ratios based on the intermediate assumptions are 415 and 213 percent, respectively, in this year's report and 367 percent and 201 percent, respectively, in last year's report. The following table presents a summary of the projections in this year's report for OASI, DI, and the combined trust funds under the three sets of assumptions for the period 1999 through 2073.

Table I.G3.—OASDI Trust Fund Ratios

	OASI	DI	Combined
Intermediate:			
Maximum trust fund ratio (percent)	415	213	364
Year attained	2014	2004	2013
Year of exhaustion	2036	2020	2034
Low Cost:			
Maximum trust fund ratio (percent)	550	1,439	529
Year attained	2017	2073	2018
Year of exhaustion	—	—	—
High Cost:			
Maximum trust fund ratio (percent)	318	166	265
Year attained	2011	2001	2008
Year of exhaustion	2028	2011	2024

Under the low cost alternative I assumptions, the combined trust fund ratio rises rapidly until the retirement of the "baby-boom" generation and begins declining during the retirement years of the "baby-boom" generation. However, this decline nearly ceases after 2065, even though annual balances remain negative at a level around 1 percent of payroll. This occurs because the projected trust fund interest earnings are high enough to offset the annual deficits and still keep the trust funds growing nearly as fast as annual outgo. For the high cost alternative III, the combined trust fund is permanently exhausted in 2024.

Trust fund assets are generally invested in special Treasury securities so that the excess of cash receipts over expenditures is borrowed from the trust funds by the general fund of the Treasury and used to help meet various Federal outlays, or to reduce the amount of publicly-held Federal debt. These securities are backed by the full faith and credit of the U.S. Government, the same as other public-debt obligations of the U.S. Government. The assets of the trust funds can be redeemed for cash at any time if required to meet program expenditures. The redemption of a Treasury security held by a trust fund requires that the Treasury transfer cash—obtained from another revenue source, such as income taxes or borrowing from the public—to the trust fund. Thus, the investment operations of the trust funds result in various cash flows between the trust funds and the general fund of the Treasury.

Under the intermediate assumptions, the excess of OASDI tax income over outgo during the next 15 years will result in a substantial net cash flow of these amounts to the general fund as they are borrowed from the trust funds. Thereafter, this cash flow is expected to reverse; as more trust fund securities are redeemed to meet benefit payments and other expenditures, the general fund of the Treasury will be drawn upon to provide the necessary cash. The accumulation and subsequent redemption of substantial trust fund assets has important economic and public policy implications that go well beyond the operation of the OASDI program itself. Discussion of these broader issues is not within the scope of this report.

4. Test of Long-Range Close Actuarial Balance

Because the OASI and DI programs, both separately and combined, have actuarial deficits that are more than 5 percent of the corresponding summarized cost rates over the next 75 years under the Trustees'

intermediate (alternative II) assumptions, they do not meet the requirements of the Trustees' formal test for long-range close actuarial balance. (This test is described in detail in section II.F titled "Actuarial Estimates" later in this report.)

H. CONCLUSION

As we have reported for the last several years, the OASDI program is adequately financed over the next 10 years and for many years thereafter, but the program is not in close actuarial balance over the next 75 years. The long-range deficit shown in this report is lower than in the 1998 report, and, if the OASI and DI Trust Funds were combined, the year of exhaustion of the funds is now estimated to be 2034, or 2 years later than in the 1998 report. This improvement is due to some more favorable economic assumptions in the long term and stronger economic growth in the near term than was expected in last year's report.

1. Short-Term Status

At the beginning of 1999, the combined assets of the trust funds represented 194 percent of estimated expenditures in 1999. Under both the intermediate and low cost assumptions, the combined funds, as well as the ratio of fund assets at the beginning of a year to annual expenditures, are projected to grow during the next 10 years and for several years thereafter. However, under the high cost assumptions, while the dollar amount of assets of the combined funds continues to grow throughout the next 10 years, the trust fund ratio increases until 2008 and begins to decline in 2009. Both the OASI and DI Trust Funds separately meet the short-term solvency test.

2. Long-Term Status

Although the combined trust funds are well financed over the next 10 years, the OASDI program is not in close actuarial balance over the full 75-year projection period and therefore does not meet the long-term solvency test. The estimated actuarial balance is a deficit of 2.07 percent of taxable payroll over the next 75 years, based on the intermediate assumptions. The combined OASI and DI Trust Funds would become exhausted in 2034 without corrective legislation. At that time, annual tax revenues of the combined trust funds would be less than expenditures by 5.02 percent of taxable earnings and would be sufficient to cover only 71 percent of annual expenditures.

The intermediate estimates indicate that the combined trust funds would be sufficient to enable the timely payment of benefits for the next 35 years. Relative to annual expenditures, the combined trust funds would continue to grow during the next 14 years, reaching a

peak of about 3.6 times annual expenditures. Considering each fund separately, the OASI Trust Fund would have sufficient funds for the next 37 years, and the DI Trust Fund for the next 21 years, to enable timely payment of benefits. Based on the high cost assumptions, the combined funds would be sufficient to enable the timely payment of benefits only for the next 25 years.

For each of the next 15 years, OASDI income from contributions on taxable earnings and from income taxes on benefits is expected to exceed total expenditures. Starting in about 2010, however, OASDI costs, relative to taxable earnings, are expected to begin increasing rapidly as the "baby-boom" generation reaches retirement age. In contrast, the program's income from contributions payable on taxable earnings and income taxes on benefits will remain a relatively constant percentage of taxable payroll.

Therefore, the OASDI cost rate is estimated to exceed the income rate from 2014 through the end of the projection period, with the shortfall reaching 6.44 percent of taxable earnings by 2073, the last year of the 75-year period. Based on the less favorable conditions assumed for the high cost estimates, the crossover point would be reached in 2009, and the shortfall would grow eventually to be 14.98 percent of taxable earnings by 2073. Similarly, based on the low cost estimates, the crossover point is 2019, and the shortfall reaches a peak of 2.3 percent in 2033 and then declines to 1.0 percent by 2073.

Although OASDI annual balances become negative in 2014 in the intermediate case, the availability of interest earnings results in continued trust fund growth until 2022. Because expenditures are estimated to increase faster than assets, however, OASDI assets would decline relative to annual expenditures, from about 3.6 to about 2.8 times annual expenditures, during the same period.

3. Recommendations

In view of the size of the financial shortfall in the OASDI program over the next 75 years, we again urge that the long-range deficits of both the OASI and DI Trust Funds be addressed in a timely way. Because the DI Trust Fund is expected to be depleted several years earlier than the OASI Trust Fund, and because DI program growth has fluctuated widely in the past, it is essential that the DI program's future experience be monitored closely.

It is important to address both the OASI and DI problems soon to allow time for phasing in any necessary changes and for workers to adjust their retirement plans to take account of those changes. We believe that the public discussion and analysis of the long-range financing problems of the OASDI program over the past year have been useful. We strongly support the bipartisan efforts of the President and the Congress to address these issues.

II. ACTUARIAL ANALYSIS

A. SOCIAL SECURITY AMENDMENTS SINCE THE 1998 REPORT

Since the 1998 Annual Report was transmitted to the Congress on April 28, 1998, there have been no legislative changes enacted that would have a significant effect on the financial status of the OASDI program.

B. DESCRIPTION OF THE TRUST FUNDS

The Federal Old-Age and Survivors Insurance Trust Fund was established on January 1, 1940, as a separate account in the United States Treasury. All the financial operations of the OASI program are handled through this fund. The Federal Disability Insurance Trust Fund is another separate account in the United States Treasury; it was established on August 1, 1956. All the financial operations of the DI program are handled through this fund.

The primary receipts of these two funds are amounts appropriated to each of them under permanent authority on the basis of contributions payable by workers, their employers, and individuals with self-employment income, in work covered by the OASDI program. All employees, and their employers, in covered employment are required to pay contributions with respect to their wages. Employees, and their employers, are also required to pay contributions with respect to cash tips, if the individual's monthly cash tips amount to at least $20. All self-employed persons are required to pay contributions with respect to their covered net earnings from self-employment. In addition to paying the required employer contributions on the wages of covered Federal employees, the Federal Government also pays amounts equivalent to the combined employer and employee contributions that would be paid on deemed wage credits attributable to military service performed after 1956 if such wage credits were covered wages.

In general, an individual's contributions, or taxes, are computed on wages or net earnings from self-employment, or both wages and net self-employment earnings combined, up to a specified maximum annual amount. The contributions are determined first on the wages and then on any net self-employment earnings, such that the total does not exceed the annual maximum amount. An employee who pays contributions on wages in excess of the annual maximum amount (because of employment with two or more employers) is eligible for a refund of the excess employee contributions.

The monthly benefit amount to which an individual (or his or her spouse and children) may become entitled under the OASDI program is based on the individual's taxable earnings during his or her lifetime. For almost all persons who first become eligible to receive benefits in 1979 or later, the earnings used in the computation of benefits are indexed to reflect increases in average wage levels.

The contribution, or tax, rates applicable in each calendar year and the allocation of these rates between the OASI and DI Trust Funds are shown in table II.B1.

For 2000 and later, the rates shown in table II.B1 are those scheduled in present law. (The total contribution rates for the OASDI and Hospital Insurance (HI) programs combined, and for each program separately, are shown in appendix A, table III.A1.) The maximum amount of earnings on which OASDI contributions are payable in a year, which is also the maximum amount of earnings creditable in that year for benefit-computation purposes, is called the contribution and benefit base. The contribution and benefit base for each year through 1999 is also shown in table II.B1.

Table II.B1.—Contribution and Benefit Base and Contribution Rates

Calendar years	Contribution and benefit base	Contribution rates (percent)					
		Employees and employers, each			Self-employed		
		OASDI	OASI	DI	OASDI	OASI	DI
1937-49	$3,000	1.000	1.000	—	—	—	—
1950	3,000	1.500	1.500	—	—	—	—
1951-53	3,600	1.500	1.500	—	2.2500	2.2500	—
1954	3,600	2.000	2.000	—	3.0000	3.0000	—
1955-56	4,200	2.000	2.000	—	3.0000	3.0000	—
1957-58	4,200	2.250	2.000	0.250	3.3750	3.0000	0.3750
1959	4,800	2.500	2.250	.250	3.7500	3.3750	.3750
1960-61	4,800	3.000	2.750	.250	4.5000	4.1250	.3750
1962	4,800	3.125	2.875	.250	4.7000	4.3250	.3750
1963-65	4,800	3.625	3.375	.250	5.4000	5.0250	.3750
1966	6,600	3.850	3.500	.350	5.8000	5.2750	.5250
1967	6,600	3.900	3.550	.350	5.9000	5.3750	.5250
1968	7,800	3.800	3.325	.475	5.8000	5.0875	.7125
1969	7,800	4.200	3.725	.475	6.3000	5.5875	.7125
1970	7,800	4.200	3.650	.550	6.3000	5.4750	.8250
1971	7,800	4.600	4.050	.550	6.9000	6.0750	.8250
1972	9,000	4.600	4.050	.550	6.9000	6.0750	.8250
1973	10,800	4.850	4.300	.550	7.0000	6.2050	.7950
1974	13,200	4.950	4.375	.575	7.0000	6.1850	.8150
1975	14,100	4.950	4.375	.575	7.0000	6.1850	.8150
1976	15,300	4.950	4.375	.575	7.0000	6.1850	.8150
1977	16,500	4.950	4.375	.575	7.0000	6.1850	.8150
1978	17,700	5.050	4.275	.775	7.1000	6.0100	1.0900
1979	22,900	5.080	4.330	.750	7.0500	6.0100	1.0400
1980	25,900	5.080	4.520	.560	7.0500	6.2725	.7775
1981	29,700	5.350	4.700	.650	8.0000	7.0250	.9750
1982	32,400	5.400	4.575	.825	8.0500	6.8125	1.2375
1983	35,700	5.400	4.775	.625	8.0500	7.1125	.9375
1984 [1]	37,800	5.700	5.200	.500	11.4000	10.4000	1.0000
1985 [1]	39,600	5.700	5.200	.500	11.4000	10.4000	1.0000
1986 [1]	42,000	5.700	5.200	.500	11.4000	10.4000	1.0000
1987 [1]	43,800	5.700	5.200	.500	11.4000	10.4000	1.0000
1988 [1]	45,000	6.060	5.530	.530	12.1200	11.0600	1.0600
1989 [1]	48,000	6.060	5.530	.530	12.1200	11.0600	1.0600
1990	51,300	6.200	5.600	.600	12.4000	11.2000	1.2000

Table II.B1.—Contribution and Benefit Base and Contribution Rates (Cont.)

Calendar years	Contribution and benefit base	Contribution rates (percent)					
		Employees and employers, each			Self-employed		
		OASDI	OASI	DI	OASDI	OASI	DI
1991	$53,400	6.200	5.600	0.600	12.4000	11.2000	1.2000
1992	55,500	6.200	5.600	.600	12.4000	11.2000	1.2000
1993	57,600	6.200	5.600	.600	12.4000	11.2000	1.2000
1994	60,600	6.200	5.260	.940	12.4000	10.5200	1.8800
1995	61,200	6.200	5.260	.940	12.4000	10.5200	1.8800
1996	62,700	6.200	5.260	.940	12.4000	10.5200	1.8800
1997	65,400	6.200	5.350	.850	12.4000	10.7000	1.7000
1998	68,400	6.200	5.350	.850	12.4000	10.7000	1.7000
1999	72,600	6.200	5.350	.850	12.4000	10.7000	1.7000
2000 and later . . .	(2)	6.200	5.300	.900	12.4000	10.6000	1.8000

[1] In 1984 only, an immediate credit of 0.3 percent of taxable wages was allowed against the OASDI contributions paid by employees, which resulted in an effective contribution rate of 5.4 percent. The appropriations of contributions to the trust funds, however, were based on the combined employee-employer rate of 11.4 percent, as if the credit for employees did not apply. Similar credits of 2.7 percent, 2.3 percent, and 2.0 percent were allowed against the combined OASDI and Hospital Insurance (HI) contributions on net earnings from self-employment in 1984, 1985, and 1986-89, respectively. Beginning in 1990, self-employed persons are allowed a deduction, for purposes of computing their net earnings, equal to half of the combined OASDI and HI contributions that would be payable without regard to the contribution and benefit base. The OASDI contribution rate is then applied to net earnings after this deduction, but subject to the OASDI base.

[2] Subject to automatic adjustment based on increases in average wages.

All contributions are collected by the Internal Revenue Service and deposited in the general fund of the Treasury. The contributions are immediately and automatically appropriated to the trust funds on an estimated basis. The exact amount of contributions received is not known initially because the OASDI and HI contributions and individual income taxes are not separately identified in collection reports received by the Internal Revenue Service. Periodic adjustments are subsequently made to the extent that the estimates are found to differ from the amounts of contributions actually payable as determined from reported earnings. Adjustments are also made to account for any refunds to employees (with more than one employer) who paid contributions on wages in excess of the contribution and benefit base.

Beginning in 1984, up to one-half of an individual's or couple's OASDI benefits was subject to Federal income taxation under certain circumstances. Effective for taxable years beginning after 1993, the maximum percentage of benefits subject to taxation was increased from 50 percent to 85 percent. The proceeds from taxation of up to 50 percent of benefits are credited to the OASI and DI Trust Funds in advance, on an estimated basis, at the beginning of each calendar quarter, with no reimbursement to the general fund for interest costs attributable to the advance transfers. (The additional tax revenues resulting from the increase to 85 percent are transferred to the HI Trust Fund.) Sub-

sequent adjustments are made based on the actual amounts as shown on annual income tax records. The amounts appropriated from the general fund of the Treasury are allocated to the OASI and DI Trust Funds on the basis of the income taxes paid on the benefits from each fund. (A special provision applies to benefits paid to nonresident aliens. Under Public Law 103-465, effective for taxable years beginning after 1994, a flat-rate tax, usually 25.5 percent, is withheld from the benefits before they are paid and, therefore, remains in the trust funds. From 1984 to 1994 the flat-rate tax that was withheld was usually 15 percent.)

Another source of income to the trust funds is interest received on investments held by the trust funds. That portion of each trust fund which, in the judgment of the Managing Trustee, is not required to meet current expenditures for benefits and administration is invested, on a daily basis, primarily in interest-bearing obligations of the U.S. Government (including special public-debt obligations described below). Investments may also be made in obligations guaranteed as to both principal and interest by the United States, including certain Federally sponsored agency obligations that are designated in the laws authorizing their issuance as lawful investments for fiduciary and trust funds under the control and authority of the United States or any officer of the United States. These obligations may be acquired on original issue at the issue price or by purchase of outstanding obligations at their market price.

The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the trust funds. The Act provides that these obligations shall bear interest at a rate equal to the average market yield (computed on the basis of market quotations as of the end of the calendar month next preceding the date of such issue) on all marketable interest-bearing obligations of the United States then forming a part of the public debt which are not due or callable until after the expiration of 4 years from the end of such calendar month. Beginning January 1999, in calculating the average market yield rate for this purpose, the Treasury incorporates the yield to the call date when a callable bond's market price is above par.

Although the special issues cannot be bought or sold in the open market, they are nonetheless redeemable at all times at par value and thus bear no risk of fluctuations in principal value due to changes in interest rates. Just as in the case of marketable securities, all of the

investments held by the trust funds are backed by the full faith and credit of the U.S. Government.

Income is also affected by provisions of the Social Security Act for (1) transfers between the general fund of the Treasury and the OASI and DI Trust Funds for any adjustments to prior payments for the cost arising from the granting of noncontributory wage credits for military service prior to 1957, according to periodic determinations; (2) annual reimbursements from the general fund of the Treasury to the OASI Trust Fund for any costs arising from the special monthly cash payments to certain uninsured persons—i.e., those who attained age 72 before 1968 and who generally are not eligible for cash benefits under other provisions of the OASDI program; and (3) the receipt of unconditional money gifts or bequests made for the benefit of the trust funds or any activity financed through the funds.

The primary expenditures of the OASI and DI Trust Funds are for (1) OASDI benefit payments, net of any reimbursements from the general fund of the Treasury for unnegotiated benefit checks, and (2) expenses incurred by the Social Security Administration and the Department of the Treasury in administering the OASDI program and the provisions of the Internal Revenue Code relating to the collection of contributions. Such administrative expenses include expenditures for construction, rental and lease, or purchase of office buildings and related facilities for the Social Security Administration. The Social Security Act does not permit expenditures from the OASI and DI Trust Funds for any purpose not related to the payment of benefits or administrative costs for the OASDI program.

The expenditures of the trust funds are also affected by (1) costs of vocational rehabilitation services furnished as an additional benefit to disabled persons receiving cash benefits because of their disabilities where such services contributed to their successful rehabilitation, and (2) the provisions of the Railroad Retirement Act which provide for a system of coordination and financial interchange between the Railroad Retirement program and the Social Security program. Under the latter provisions, transfers between the Railroad Retirement program's Social Security Equivalent Benefit Account and the trust funds are made on an annual basis in order to place each trust fund in the same position in which it would have been if railroad employment had always been covered under Social Security.

The net worth of facilities and other fixed capital assets is not carried in the statements of the operations of the trust funds presented in this

report. This is because the value of fixed capital assets does not represent funds available for the payment of benefits or administrative expenditures, and therefore is not considered in assessing the actuarial status of the trust funds.

C. SUMMARY OF THE OPERATIONS OF THE OLD-AGE AND SURVIVORS INSURANCE AND DISABILITY INSURANCE TRUST FUNDS, FISCAL YEAR 1998

1. Old-Age and Survivors Insurance Trust Fund

A statement of the income and disbursements of the Federal Old-Age and Survivors Insurance Trust Fund in fiscal year 1998, and of the assets of the fund at the beginning and end of the fiscal year, is presented in table II.C1.

During fiscal year 1998, total receipts amounted to $415.7 billion, and total disbursements were $330.0 billion. The assets of the OASI Trust Fund thus increased by $85.7 billion during the year, to a total of $653.1 billion on September 30, 1998.

Included in total receipts during fiscal year 1998 were $366.4 billion in payroll tax contributions appropriated to the fund. These contributions were offset by transfers totaling $1.8 billion to the general fund of the Treasury for the estimated amount of refunds to employees who worked for more than one employer during a year and paid contributions in excess of the contribution and benefit base. In addition, $0.2 billion was received from the general fund of the Treasury representing payment for the taxes that would have been paid on estimated deemed wage credits for military service in 1998 if such credits had been considered to be covered wages. (Included in this payment are adjustments for revised estimates of deemed wage credits in prior years.)

Net contributions thus amounted to $364.9 billion, an increase of 6.6 percent over the amount in the preceding year. The increase in OASI tax contributions from fiscal year 1997 to fiscal year 1998 is due to (1) the increase in the allocation of the OASDI tax rate to OASI that became effective January 1, 1997, (2) increased earnings, and (3) the increases in the contribution and benefit base that became effective on January 1 of each year 1997 and 1998. (Table II.B1 in the preceding section shows the tax rates and contribution and benefit bases in effect for these years.)

Income from taxation of benefits amounted to $8.6 billion, of which 98 percent represented amounts credited to the trust funds in advance, on an estimated basis. The remaining 2 percent of the total income from taxation of benefits represented amounts withheld from the benefits paid to nonresident aliens.

Table II.C1.—Statement of Operations of the OASI Trust Fund During Fiscal Year 1998

[In thousands]

Total assets, September 30, 1997		$567,395,145
Receipts:		
Contributions:		
Employment taxes	$366,406,016	
Payments from the general fund of the Treasury for:		
Contributions subject to refund	-1,778,010	
Employee-employer contributions on deemed wage credits for military service	243,000	
Net contributions		364,871,006
Income from taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	161,829	
All other, not subject to withholding	8,433,000	
Total income from taxation of benefits		8,594,829
Reimbursement from the general fund for costs of payments to uninsured persons who attained age 72 before 1968		1,808
Investment income and interest adjustments:		
Interest on investments	42,197,289	
Interest on transfers to the general fund account for the Supplemental Security Income program due to adjustment in allocation of administrative expenses	1,017	
Interest on interfund transfers due to adjustment in allocation of administrative expenses	-337	
Interest on interfund transfers due to adjustment in allocation of capitalized asset program	103	
Interest on certain reimbursements from the general fund	80	
Net investment income and interest adjustments		42,198,152
Gifts		152
Total receipts		415,665,946
Disbursements:		
Benefit payments:		
Gross benefit payments	323,436,423	
Offset for collected overpayments	874,560	
Reimbursement from the general fund for unnegotiated checks	-54,628	
Net benefit payments		324,256,356
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		3,662,248
Administrative expenses:		
Social Security Administration	1,775,851	
Department of the Treasury	262,043	
Reimbursement from the general fund for costs of furnishing information on deferred vested pension benefits	-1,469	
Offsetting receipts from sales of supplies, materials, etc.	-546	
Reimbursement from the general fund for costs of furnishing information related to the Coal Industry Retiree Health Benefit Act of 1992	-339	
Reimbursement from the general fund for costs associated with union activities	-1,351	
Net administrative expenses		2,034,188
Total disbursements		329,952,792
Net increase in assets		85,713,155
Total assets, September 30, 1998		653,108,300

Note: Totals do not necessarily equal the sums of rounded components.

Special payments are made to uninsured persons who either attained age 72 before 1968, or who attained age 72 after 1967 and had 3 quarters of coverage for each year after 1966 and before the year of attainment of age 72. The costs associated with providing such payments to persons having fewer than 3 quarters of coverage are reimbursable from the general fund of the Treasury. Accordingly, a reimbursement of $1,808,000 was transferred to the OASI Trust Fund in fiscal year 1998, as required by section 228 of the Social Security Act. The reimbursement reflected the costs of payments made in fiscal year 1996.

The OASI Trust Fund was credited with interest netting $42.2 billion which consisted of (1) interest earned on the investments of the trust fund, (2) interest on transfers between the trust fund and the general fund account for the Supplemental Security Income program due to adjustments in the allocation of administrative expenses, (3) interest arising from the revised allocation of administrative expenses among the trust funds, (4) interest arising from the revised allocation of the capitalized asset program, and (5) interest on reimbursements to the trust fund for costs associated with union activities and pension reform. The remaining $151,512 of receipts consisted of gifts received under the provisions authorizing the deposit of money gifts or bequests in the trust funds.

Of the $330.0 billion in total disbursements, $324.3 billion was for net benefit payments. The amount of net benefit payments in fiscal year 1998 represents an increase of 3.6 percent over the corresponding amount in fiscal year 1997. This increase is due primarily to (1) the automatic cost-of-living benefit increases of 2.9 percent and 2.1 percent which became effective for December 1996 and December 1997 respectively, under the automatic-adjustment provisions in section 215(i) of the Social Security Act, (2) an increase in the total number of beneficiaries, and (3) an increase in the average benefit amount resulting from the rising level of earnings.

As described in the preceding section, certain provisions of the Railroad Retirement Act coordinate the Railroad Retirement and OASDI programs and govern the financial interchanges arising from the allocation of costs between the two programs. Under those provisions, the Railroad Retirement Board and the Commissioner of Social Security determined that a transfer of $3.7 billion to the Social Security Equivalent Benefit Account from the OASI Trust Fund was required in June 1998.

The remaining $2.0 billion of disbursements from the OASI Trust Fund represented net administrative expenses. The expenses of administering the OASDI and Medicare programs are allocated and charged directly to each of the various trust funds, through which those programs are financed, on the basis of provisional estimates. Similarly, the expenses of administering the Supplemental Security Income program are also allocated and charged directly to the general fund of the Treasury on a provisional basis. Periodically, as actual experience develops and is analyzed, adjustments to the allocations of administrative expenses for prior periods are effected by interfund transfers and transfers between the OASI Trust Fund and the general fund account for the Supplemental Security Income program, with appropriate interest adjustments.

Section 1131 of the Social Security Act authorizes annual reimbursements from the general fund of the Treasury to the OASI Trust Fund for additional administrative expenses incurred as a result of furnishing information on deferred vested benefits to pension plan participants, as required by the Employee Retirement Income Security Act of 1974 (Public Law 93-406). The reimbursement in fiscal year 1998 amounted to $1,468,643.

The OASI Trust Fund was reimbursed $339,453 for expenses of providing certain information required by the Coal Industry Retiree Health Benefit Act of 1992 (part of the Energy Policy Act of 1992, Public Law 102-486). The fund was also reimbursed $1,351,321 for costs associated with union activities, as authorized by Public Law 105-78.

The assets of the OASI Trust Fund at the end of fiscal year 1998 totaled $653.1 billion, consisting of $653.3 billion in U.S. Government obligations and, as an offset, an extension of credit amounting to $0.2 billion. Table II.C2 shows the total assets of the fund and their distribution at the end of each fiscal year 1997 and 1998.

Table II.C2.—Assets of the OASI Trust Fund, by Type, Interest Rate, and Year of Maturity, at End of Fiscal Year, 1997 and 1998

	September 30, 1997	September 30, 1998
Obligations sold only to the trust funds (special issues):		
Certificates of indebtedness:		
5.375 percent, 1999	—	$16,346,363,000.00
5.75 percent, 1999	—	5,698,144,000.00
6.625 percent, 1998	$28,865,523,000.00	—
Bonds:		
5.875 percent, 2000-01	—	12,338,544,000.00
5.875 percent, 2002-12	—	67,862,003,000.00
5.875 percent, 2013	—	43,258,869,000.00
6.25 percent, 1999	3,150,975,000.00	—
6.25 percent, 2000-06	22,056,825,000.00	22,056,825,000.00
6.25 percent, 2007	3,150,974,000.00	3,150,974,000.00
6.25 percent, 2008	23,350,034,000.00	23,350,034,000.00
6.5 percent, 1999	2,431,254,000.00	—
6.5 percent, 2000-09	24,312,540,000.00	24,312,540,000.00
6.5 percent, 2010	29,742,844,000.00	29,742,844,000.00
6.875 percent, 1999	3,975,270,000.00	—
6.875 percent, 2000-03	15,901,080,000.00	15,901,080,000.00
6.875 percent, 2004-09	23,851,626,000.00	23,851,626,000.00
6.875 percent, 2010-11	7,950,544,000.00	7,950,544,000.00
6.875 percent, 2012	37,089,596,000.00	37,089,596,000.00
7 percent,1999	3,371,481,000.00	1,452,405,000.00
7 percent, 2000-03	13,485,924,000.00	13,485,924,000.00
7 percent, 2004-10	23,600,360,000.00	23,600,360,000.00
7 percent, 2011	33,114,324,000.00	33,114,324,000.00
7.25 percent, 1999-2006	31,692,448,000.00	31,692,448,000.00
7.25 percent, 2007-08	7,923,114,000.00	7,923,114,000.00
7.25 percent, 2009	27,311,591,000.00	27,311,591,000.00
7.375 percent, 1998	2,701,184,000.00	—
7.375 percent, 1999-2000	7,150,946,000.00	7,150,946,000.00
7.375 percent, 2001-06	21,452,844,000.00	21,452,844,000.00
7.375 percent, 2007	20,199,060,000.00	20,199,060,000.00
8.125 percent, 1998	3,611,349,000.00	—
8.125 percent, 1999-2000	7,222,698,000.00	7,222,698,000.00
8.125 percent, 2001-05	18,056,740,000.00	18,056,740,000.00
8.125 percent, 2006	16,623,586,000.00	16,623,586,000.00
8.375 percent, 1998	313,295,000.00	—
8.375 percent, 1999-2000	626,590,000.00	626,590,000.00
8.375 percent, 2001	2,370,396,000.00	2,370,396,000.00
8.625 percent, 1998	1,301,731,000.00	—
8.625 percent, 1999-2001	3,905,193,000.00	3,905,193,000.00
8.625 percent, 2002	3,672,127,000.00	3,672,127,000.00
8.75 percent, 1998	7,099,802,000.00	—
8.75 percent, 1999-2000	14,199,604,000.00	14,199,604,000.00
8.75 percent, 2001-03	21,299,409,000.00	21,299,409,000.00
8.75 percent, 2004-05	26,024,476,000.00	26,024,476,000.00
9.25 percent, 1998	2,240,309,000.00	—
9.25 percent, 1999-2000	4,480,618,000.00	4,480,618,000.00
9.25 percent, 2001-02	4,480,616,000.00	4,480,616,000.00
9.25 percent, 2003	5,912,435,000.00	5,912,435,000.00
10.375 percent, 1998	565,186,000.00	—
10.375 percent, 1999	565,186,000.00	565,186,000.00
10.375 percent, 2000	2,057,101,000.00	2,057,101,000.00
10.75 percent, 1998	1,022,230,000.00	—
13.75 percent, 1998	469,685,000.00	—
13.75 percent, 1999	1,491,915,000.00	1,491,915,000.00
Total investments	567,444,638,000.00	653,281,692,000.00
Undisbursed balances [1]	-49,492,935.68	-173,392,374.92
Total assets	567,395,145,064.32	653,108,299,625.08

[1] Negative figures represent an extension of credit against securities to be redeemed within the following few days.

Note: Special issues are always purchased at par value. Therefore, book value and par value are the same for each special issue, and the common value is shown above. Where the maturity years are grouped, the amount maturing in each year is the amount shown divided by the number of years.

All securities held by the trust funds are backed by the full faith and credit of the United States Government. Those currently held by the OASI Trust Fund are special issues (i.e., securities sold only to the trust funds). These are of two types: short-term certificates of indebtedness and long-term bonds. The certificates of indebtedness are issued through the investment of receipts not required to meet current expenditures, and they mature on the next June 30 following the date of issue. Special-issue bonds, on the other hand, are normally acquired only when special issues of either type mature on June 30. The amount of bonds acquired on June 30 is equal to the amount of special issues maturing, less amounts required to meet expenditures on that day.

The effective annual rate of interest earned by the assets of the OASI Trust Fund during calendar year 1998 was 7.3 percent, as compared to 7.6 percent earned during calendar year 1997. The interest rate on special issues purchased by the trust fund in June 1998 was 5.875 percent, payable semiannually. Special-issue bonds with a total par value of $129.6 billion were purchased in June 1998.

Section 201(d) of the Social Security Act provides that the public-debt obligations issued for purchase by the OASI and DI Trust Funds shall have maturities fixed with due regard for the needs of the funds. The usual practice has been to spread the holdings of special issues, as of each June 30, so that the amounts maturing in each of the next 15 years are approximately equal. Accordingly, the amounts and maturity dates of the OASI special-issue bonds purchased on June 30, 1998, were selected in such a way that the maturity dates of the total portfolio of special issues were spread evenly over the 15-year period 1999-2013.

2. Disability Insurance Trust Fund

A statement of the income and disbursements of the Federal Disability Insurance Trust Fund during fiscal year 1998, and of the assets of the fund at the beginning and end of the fiscal year, is presented in table II.C3.

During fiscal year 1998, total receipts amounted to $62.9 billion, and total disbursements were $49.3 billion. The assets of the trust fund thus increased by $13.6 billion during the year, to a total of $77.1 billion on September 30, 1998.

Included in total receipts were $58.2 billion representing payroll tax contributions appropriated to the fund. These contributions were offset by transfers totaling $0.3 billion to the general fund of the Treasury for the estimated amount of refunds to employees who worked for more than one employer during a year and paid contributions in excess of the contribution and benefit base. In addition, $39,000,000 was received from the general fund of the Treasury representing taxes that would have been paid on estimated deemed wage credits for military service in 1998 if such credits had been considered to be covered wages.

Net contributions amounted to $58.0 billion, an increase of 3.2 percent from the amount in the preceding fiscal year. This increase is attributable to the same factors, insofar as they apply to the DI program, that accounted for the change in contributions to the OASI Trust Fund. However, the reallocation of the OASDI tax rate that accounted for the increase in contributions to the OASI Trust Fund in fiscal year 1998 was an offsetting factor for the DI Trust Fund. Income from the taxation of benefit payments amounted to $0.5 billion in fiscal year 1998.

Interest totaling $4.4 billion consisted of interest on the investments of the fund, interest on amounts of interfund transfers, and interest on reimbursements.

Of the $49.3 billion in total disbursements, $47.6 billion was for net benefit payments. This represents an increase of 4.8 percent over the corresponding amount of benefit payments in fiscal year 1997. This increase is due in part to the same factors that resulted in the net increase in benefit payments from the OASI Trust Fund. The number of persons receiving benefits from the DI Trust Fund increased more rapidly in 1998, however, than those receiving benefits from the OASI Trust Fund.

Table II.C3.—Statement of Operations of the DI Trust Fund During Fiscal Year 1998

[In thousands]

Total assets, September 30, 1997		$63,482,657
Receipts:		
Contributions:		
Employment taxes	$58,236,226	
Payments from the general fund of the Treasury for:		
Contributions subject to refund	-292,790	
Employee-employer contributions on deemed wage credits for military service	39,000	
Net contributions		57,982,436
Income from taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	7,101	
All other, not subject to withholding	519,000	
Total income from taxation of benefits		526,101
Investment income and interest adjustments:		
Interest on investments	4,432,269	
Interest on interfund transfers due to adjustment in allocation of administrative expenses	602	
Interest on interfund transfers due to adjustment in allocation of capitalized asset program	27	
Net interest adjustments on disbursement of funds to certain State Disability Determination Services	1,070	
Interest on reimbursement from the general fund for costs associated with union activity	40	
Total investment income and interest adjustments		4,434,009
Total receipts		62,942,545
Disbursements:		
Benefit payments:		
Gross benefit payments	47,353,912	
Offset for collected overpayments	228,832	
Reimbursement from the general fund for unnegotiated checks	-17,363	
Net benefit payments		47,565,380
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		156,817
Payment for costs of vocational rehabilitation services for disabled beneficiaries		53,291
Administrative expenses:		
Social Security Administration	1,517,263	
Department of the Treasury	46,503	
Demonstration projects and experiments	208	
Reimbursement from the general fund for costs of furnishing information related to the Coal Industry Retiree Health Benefit Act of 1992	-242	
Reimbursement from the general fund for costs associated with union activities	-1,126	
Net administrative expenses		1,562,607
Total disbursements		49,338,095
Net increase in assets		13,604,451
Total assets, September 30, 1998		77,087,107

Note: Totals do not necessarily equal the sums of rounded components.

Provisions governing the financial interchanges between the Railroad Retirement and OASDI programs are described in the preceding section. Under those provisions, $156,817,000 was transferred to the Social Security Equivalent Benefit Account from the DI Trust Fund in June 1998.

The remaining disbursements amounted to $1.6 billion for net administrative expenses (including $207,698 for demonstration projects and experiments to test the effect of alternative methods for assisting disabled beneficiaries' attempts to work), and $53,291,055 for the costs of vocational rehabilitation services furnished to disabled-worker beneficiaries and to those children of disabled workers who were receiving benefits on the basis of disabilities that began before age 22. Reimbursement from the trust funds for the costs of such services is made only in those cases where the services contributed to the successful rehabilitation of the beneficiaries.

The assets of the DI Trust Fund at the end of fiscal year 1998 totaled $77.1 billion, consisting of $77.0 billion in U.S. Government obligations and cash totaling $0.1 billion. Table II.C4 shows the total assets of the fund and their distribution at the end of each fiscal year 1997 and 1998.

The effective annual rate of interest earned by the assets of the DI Trust Fund during calendar year 1998 was 6.8 percent, as compared to 7.0 percent earned during calendar year 1997. The interest rate on public-debt obligations issued for purchase by the trust fund in June 1998 was 5.875 percent, payable semiannually. Special-issue bonds with a total par value of $18.2 billion were purchased in June 1998.

The investment policies and practices described for the OASI Trust Fund apply as well to the investment of the assets of the DI Trust Fund.

Table II.C4.—Assets of the DI Trust Fund, by Type, Interest Rate, and Year of Maturity, at End of Fiscal Year, 1997 and 1998

	September 30, 1997	September 30, 1998
Investments in public-debt obligations:		
Public issues:		
Treasury bonds:		
3.5 percent, 1998	$5,000,000.00	$5,000,000.00
7.625 percent, 2002-07	10,000,000.00	10,000,000.00
8.25 percent, 2000-05	3,750,000.00	3,750,000.00
11.75 percent, 2005-10	30,250,000.00	30,250,000.00
Total investments in public issues at par value, as shown above	49,000,000.00	49,000,000.00
Unamortized premium or discount, net	-110,597.65	-189,886.18
Total investments in public issues at book value	48,889,402.35	48,810,113.82
Obligations sold only to the trust funds (special issues):		
Certificates of indebtedness:		
5.375 percent, 1999	—	2,526,004,000.00
5.75 percent, 1999	—	406,123,000.00
6.625 percent, 1998	4,284,629,000.00	—
6.75 percent, 1998	62,383,000.00	—
Bonds:		
5.875 percent, 2000-12	—	11,911,718,000.00
5.875 percent, 2013	—	5,361,805,000.00
6.5 percent, 1999	2,147,659,000.00	1,059,081,000.00
6.5 percent, 2000-07	17,181,272,000.00	17,181,272,000.00
6.5 percent, 2008	3,064,120,000.00	3,064,120,000.00
6.875 percent, 1998	220,111,000.00	—
6.875 percent, 1999-2002	1,060,996,000.00	1,060,996,000.00
6.875 percent, 2003	265,252,000.00	265,252,000.00
6.875 percent, 2004-07	1,061,000,000.00	1,061,000,000.00
6.875 percent, 2008-09	530,498,000.00	530,498,000.00
6.875 percent, 2010-12	13,336,560,000.00	13,336,560,000.00
7 percent, 1998	1,116,150,000.00	—
7 percent, 1999-2008	11,161,510,000.00	11,161,510,000.00
7 percent, 2009	4,180,271,000.00	4,180,271,000.00
7.375 percent, 2004-06	142,803,000.00	142,803,000.00
7.375 percent, 2007	916,460,000.00	916,460,000.00
8.125 percent, 2004-05	300,322,000.00	300,322,000.00
8.125 percent, 2006	868,859,000.00	868,859,000.00
8.75 percent, 2003	174,477,000.00	174,477,000.00
8.75 percent, 2004-05	1,437,396,000.00	1,437,396,000.00
Total obligations sold only to the trust funds (special issues)	63,512,728,000.00	76,946,527,000.00
Total investments in public-debt obligations (book value [1])	63,561,617,402.35	76,995,337,113.82
Undisbursed balances [2]	-78,960,538.67	91,770,319.42
Total assets (book value [1])	63,482,656,863.68	77,087,107,433.24

[1] Par value, plus unamortized premium or less discount outstanding.

[2] Negative figure represents an extension of credit against securities to be redeemed within the following few days.

Note: Special issues are always purchased at par value. Therefore, book value and par value are the same for each special issue, and the common value is shown above. Where the maturity years are grouped for special issues, the amount maturing in each year is the amount shown divided by the number of years.

3. Old-Age and Survivors Insurance and Disability Insurance Trust Funds, Combined

A statement of the operations of the income and disbursements of the OASI and DI Trust Funds, on a combined basis, is presented in table II.C5. The entries in this table represent the sums of the corresponding values from tables II.C1 and II.C3. For a discussion of the nature of these income and expenditure transactions, reference should be made to the preceding two subsections covering OASI and DI separately.

Table II.C5.—Statement of Operations of the OASI and DI Trust Funds, Combined, During Fiscal Year 1998

[In thousands]

Total assets, September 30, 1997		$630,877,802
Receipts:		
Contributions:		
Employment taxes	$424,642,241	
Payments from the general fund of the Treasury for:		
Contributions subject to refund	-2,070,800	
Employee-employer contributions on deemed wage credits for military service	282,000	
Net contributions		422,853,441
Income from taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	168,929	
All other, not subject to withholding	8,952,000	
Total income from taxation of benefits		9,120,929
Reimbursement from the general fund for costs of payments to uninsured persons who attained age 72 before 1968		1,808
Investment income and interest adjustments:		
Interest on investments	46,629,558	
Interest on transfers to the general fund account for the Supplemental Security Income program due to adjustment in allocation of administrative expenses	1,017	
Interest on interfund transfers due to adjustment in allocation of administrative expenses	265	
Interest on interfund transfers due to adjustment in allocation of capitalized asset program	131	
Interest on certain reimbursements from the general fund	120	
Net interest adjustments on disbursement of funds to certain State Disability Determination Services	1,070	
Total investment income and interest adjustments		46,632,161
Gifts		152
Total receipts		478,608,491
Disbursements:		
Benefit payments:		
Gross benefit payments	370,790,335	
Offset for collected overpayments	1,103,392	
Reimbursement from the general fund for unnegotiated checks	-71,991	
Net benefit payments		371,821,736
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		3,819,065
Payment for costs of vocational rehabilitation services for disabled beneficiaries		53,291

Table II.C5.—Statement of Operations of the OASI and DI Trust Funds, Combined, During Fiscal Year 1998 (Cont.)

[In thousands]

Disbursements: (Cont.)		
Administrative expenses:		
Social Security Administration	$3,293,114	
Department of the Treasury	308,546	
Reimbursement from the general fund for costs of furnishing information on deferred vested pension benefits	-1,469	
Offsetting receipts from sales of supplies, materials, etc.	-546	
Reimbursement from the general fund for costs of furnishing information related to the Coal Industry Retiree Health Benefit Act of 1992	-581	
Reimbursement from the general fund for costs associated with union activities	-2,477	
Demonstration projects and experiments	208	
Net administrative expenses		$3,596,795
Total disbursements		379,290,886
Net increase in assets		99,317,605
Total assets, September 30, 1998		730,195,407

Note: Totals do not necessarily equal the sums of rounded components.

Table II.C6 compares past estimates of contributions and benefit payments for fiscal year 1998, as shown in the 1994-98 Annual Reports, with the corresponding actual amounts in 1998. The estimates shown are the ones based on the alternative II assumptions.

A number of factors can contribute to differences between estimates and subsequent actual amounts, including actual values for key economic, demographic, and other variables that differ from assumed levels. In addition, amendments to the Social Security Act can cause actual taxes or benefits to vary from earlier estimates. For example, the reallocation of the OASDI tax rate, enacted in October 1994, makes comparison of tax estimates in the 1994 Annual Report with actual taxes in fiscal year 1998 meaningless for OASI and DI taken separately. Estimates of OASI benefit payments were generally close to actual payments in 1998. The actual amount of DI benefit payments in 1998, however, was significantly below estimates in the 1994-97 reports, due to slower-than-expected growth in the number of disabled workers.

Table II.C6.—Comparison of Actual and Estimated Operations of the OASI and DI Trust Funds, Fiscal Year 1998

[Amounts in millions]

	Net contributions [1]		Benefit payments [2]	
	Amount	Difference from actual (percent)	Amount	Difference from actual (percent)
OASI Trust Fund:				
Estimate in 1994 report	$378,188	3.6	$335,916	3.6
Estimate in 1995 report	361,256	-1.0	331,735	2.3
Estimate in 1996 report	352,240	-3.5	328,800	1.4
Estimate in 1997 report	353,695	-3.1	326,932	0.8
Estimate in 1998 report	364,499	-0.1	323,698	-0.2
Actual amount	364,871	—	324,256	—
DI Trust Fund:				
Estimate in 1994 report	40,526	-30.1	52,926	11.1
Estimate in 1995 report	57,376	-1.0	51,714	8.6
Estimate in 1996 report	55,945	-3.5	50,688	6.4
Estimate in 1997 report	56,185	-3.1	49,975	4.9
Estimate in 1998 report	57,911	-0.1	48,274	1.4
Actual amount	57,982	—	47,619	—
OASI and DI Trust Funds, combined:				
Estimate in 1994 report	418,714	-1.0	388,841	4.6
Estimate in 1995 report	418,632	-1.0	383,449	3.1
Estimate in 1996 report	408,185	-3.5	379,488	2.0
Estimate in 1997 report	409,880	-3.1	376,907	1.4
Estimate in 1998 report	422,410	-0.1	371,972	(3)
Actual amount	422,853	—	371.875	—

[1] "Actual" contributions for 1998 reflect adjustments for prior fiscal years (see preceding section for description of these adjustments). "Estimated" contributions also include such adjustments, but on an estimated basis.

[2] Includes payments, if any, for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities.

[3] Less than 0.05 percent.

At the end of fiscal year 1998, about 44.2 million persons were receiving monthly benefits under the OASDI program. Of these persons, about 37.9 million and 6.3 million were receiving monthly benefits from the OASI Trust Fund and the DI Trust Fund, respectively. The number of persons receiving benefits from the OASI and DI Trust Funds grew by 0.3 percent and 2.9 percent, respectively, during the fiscal year. The estimated distribution of benefit payments in fiscal years 1997 and 1998, by type of beneficiary, is shown in table II.C7 for each trust fund separately.

Table II.C7.—Estimated Distribution of Benefit Payments From the OASI and DI Trust Funds, by Type of Beneficiary or Payment, Fiscal Years 1997 and 1998

[Amounts in millions]

	Fiscal year 1997		Fiscal year 1998	
	Amount	Percentage of total	Amount	Percentage of total
Total OASDI benefit payments	$358,232	100.0	$371,894	100.0
OASI benefit payments	312,862	87.3	324,311	87.2
DI benefit payments	45,371	12.7	47,583	12.8
OASI benefit payments, total	312,862	100.0	324,311	100.0
Monthly benefits:				
Retired workers and auxiliaries	240,665	76.9	250,606	77.3
Retired workers	220,761	70.6	230,331	71.0
Wives and husbands	18,042	5.8	18,345	5.7
Children	1,861	0.6	1,930	0.6
Survivors of deceased workers	71,981	23.0	73,484	22.7
Aged widows and widowers	57,789	18.5	58,891	18.2
Disabled widows and widowers	1,142	0.4	1,213	0.4
Parents	30	(1)	29	(1)
Children	11,552	3.7	11,897	3.7
Widowed mothers and fathers caring for child beneficiaries	1,468	0.5	1,454	0.4
Uninsured persons generally aged 72 before 1968	1	(1)	(2)	(1)
Lump-sum death payments	216	0.1	220	0.1
DI benefit payments, total	45,371	100.0	47,583	100.0
Disabled workers	40,798	89.9	42,871	90.1
Wives and husbands	487	1.1	464	1.0
Children	4,086	9.0	4,247	8.9

[1] Less than 0.05 percent.

[2] Less than $500,000.

Note: Totals do not necessarily equal the sums of rounded components.

Net administrative expenses charged to the OASI and DI Trust Funds in fiscal year 1998 totaled $3.6 billion. This amount represented 0.9 percent of contribution income and 1.0 percent of expenditures for benefit payments. Corresponding percentages for each trust fund separately and for the OASDI program as a whole are shown in table II.C8 for each of the last 5 years.

Table II.C8.—Net Administrative Expenses as a Percentage of Contribution Income and of Benefit Payments, by Trust Fund, Fiscal Years 1994-98

	OASI Trust Fund		DI Trust Fund		OASI and DI Trust Funds, combined	
Fiscal year	Contribution income	Benefit payments	Contribution income	Benefit payments	Contribution income	Benefit payments
1994	0.6	0.7	3.1	2.8	0.8	0.9
1995	.6	.6	1.6	2.7	.8	.9
1996	.6	.6	1.9	2.5	.8	.8
1997	.6	.6	2.2	2.7	.8	.9
1998	.6	.6	2.7	3.3	.9	1.0

Tables II.C2 and II.C4, presented in the two preceding subsections, showed the assets of the OASI and DI Trust Funds at the end of fiscal years 1997 and 1998. The changes in the invested assets of the funds between those two dates are a result of the acquisition and disposition of securities during fiscal year 1998. Table II.C9 presents these investment transactions for each trust fund separately and combined. All amounts shown in the table are at par value.

Table II.C9.—Investment Transactions of the OASI and DI Trust Funds in Fiscal Year 1998

[In thousands]

	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Invested assets, September 30, 1997	$567,444,638	$63,561,728	$631,006,366
Acquisitions:			
Special issues:			
Certificates of indebtedness	399,891,197	61,646,719	461,537,916
Bonds	129,628,688	18,189,809	147,818,497
Public issues:			
Treasury bonds	—	—	—
Total acquisitions	529,519,885	79,836,528	609,356,413
Dispositions:			
Special issues:			
Certificates of indebtedness	406,712,213	63,061,604	469,773,817
Bonds	36,970,618	3,341,125	40,311,743
Public issues:			
Treasury bonds	—	—	—
Total dispositions	443,682,831	66,402,729	510,085,560
Net increase in invested assets	85,837,054	13,433,799	99,270,853
Invested assets, September 30, 1998	653,281,692	76,995,527	730,277,219

Note: All investments are shown at par value.

D. PRINCIPAL ECONOMIC AND DEMOGRAPHIC ASSUMPTIONS

The future income and outgo of the OASDI program depend on many economic and demographic factors, including gross domestic product, labor force, unemployment, average earnings, productivity, inflation, fertility, mortality, net immigration, marriage, divorce, retirement patterns, and disability incidence and termination. The income will depend on how these factors affect the size and composition of the working population and the level and distribution of earnings. Similarly, the outgo will depend on how these factors affect the size and composition of the beneficiary population and the general level of benefits.

Because projections of these variables are inherently uncertain, estimates are shown in this report on the basis of three plausible sets of assumptions, designated as intermediate (alternative II), low cost (alternative I), and high cost (alternative III). The intermediate set, alternative II, represents the Board's best estimate of the future course of the population and the economy. In terms of the net effect on the status of the OASDI program, the low cost alternative I is the most optimistic, and the high cost alternative III is the most pessimistic.

The economic and demographic assumptions used in this report are reexamined each year in light of recent experience and new information about future trends, and are revised if warranted. This year, there was a particular need for such a review because of changes in the calculation of the CPI by the Bureau of Labor Statistics (BLS). These changes were announced last April, too late to incorporate into the 1998 report.

Although the three sets of economic and demographic assumptions have been developed using the best available information, the resulting estimates should be interpreted with care. The estimates are not intended to be predictions of the future financial status of the OASDI program, but rather, they are intended to be indicators of the expected trend and likely range of future income and outgo, under a variety of plausible economic and demographic conditions.

The values for each of the economic and demographic factors are assumed to move from recently experienced levels or trends, toward long-range ultimate values over the next 5 to 30 years. The ultimate values assumed after the first 5 to 30 years for both the economic and

the demographic variables are intended to represent average experience or growth rates. Actual future values will exhibit fluctuations or cyclical patterns, as in the past.

1. Economic Assumptions

The principal economic assumptions are summarized in table II.D1. Alternatives I, II, and III represent a range of economic assumptions designed to produce variation in Social Security's financial status that should encompass most of the possibilities that might be encountered. The intermediate assumptions (alternative II) reflect the Trustees' consensus expectation of moderate economic growth throughout the projection period. The low cost assumptions (alternative I) represent a more optimistic outlook, with relatively stronger economic growth. The high cost assumptions (alternative III) represent a relatively pessimistic forecast, with weaker economic growth and two recessions in the short-range period. Economic cycles are not included in assumptions beyond the first 5 to 10 years of the projection period because they have little effect on the long-range estimates of financial status.

a. GDP, Labor Productivity, and Labor Force Growth

For alternative II, the annual growth in real GDP is assumed to average 2.0 percent over the short-range projection period (1999-2008), a slower rate than the 2.4 percent average observed over the most recent historical ten-year period (1989-98). This 0.4 percent slowdown is mostly due to slower projected growth in labor force and employment. For alternative I, the annual growth rate in the real GDP is assumed to average 2.6 percent over the next 10 years. The relatively faster growth is due mostly to a higher assumed rate of growth in worker productivity. For alternative III, relatively weak economic growth and an increased inflation rate are assumed for the first 3 quarters of 1999. A recession begins in the fourth quarter of 1999, lasts 3 quarters, and results in a total decline in real GDP of 1.4 percent. After 8 quarters of recovery, a second recession, with a total decline in real GDP of 3.0 percent, is assumed to begin in the third quarter of 2002, lasting 4 quarters. After the second recession, a moderate economic recovery is assumed through 2005, with continued modest economic growth thereafter.

After 2008, the projected rates of growth in real GDP, for all three alternatives, are determined by the assumed rates of growth in employment, average hours worked, and labor productivity. The

Trustees assume an intermediate trend growth rate of labor productivity of 1.3 percent per year, roughly in line with the average rate of growth of productivity over the last 30 years.

The Trustees project much slower growth in the working age population in the future based on the natural consequence of the "baby-boom" generation approaching retirement and the succeeding lower-birth-rate cohorts reaching working age. The projected slowdown in labor force growth also reflects the cessation of relatively rapid growth in labor force participation rates, particularly by women, by about 2010. The annual rate of growth in total labor force decreased from an average of about 2 percent per year during the 1970s and 1980s to about 1.1 percent from 1990 to 1998. After 1998 the labor force is projected to increase at about 0.9 percent per year, on average, through 2008, and to increase much more slowly after that, ultimately reaching 0.1 percent toward the end of the 75-year projection period.

Thus, the projected growth of real GDP falls toward trend productivity growth because of the Trustees projected decline in labor force growth over the long term. With productivity growth at 1.3 percent and labor force growth slowing to essentially zero, ultimately trend GDP growth slows to about 1.3 percent as well.

b. Unemployment Rate

Unemployment rates through 2008 are presented in the most commonly cited form, the civilian rate, which is determined by the difference between aggregate civilian labor force and aggregate civilian employment. For years after 2008, however, total age-sex adjusted rates are presented. These include the military and are age-sex adjusted to the 1997 labor force. Such total rates better represent the population covered by the OASDI program. In addition, these rates adjust for the changing age-sex distribution of the labor force, which can obscure the comparison of unemployment rates across time periods.

Ultimate unemployment rates have been lowered by 0.5 percentage point from the values assumed in the 1998 report. This reflects, in part, a general view that the Non-Accelerating Inflation Unemployment Rate has dropped significantly over the last 5 years or so and can be expected to remain at lower levels than had been assumed in the past. The ultimate age-sex adjusted unemployment rate for each alternative is assumed to be reached in 2009. The ultimate levels are 4.5, 5.5, and 6.5 for alternatives I, II and III, respectively.

c. Inflation

The annual rate of increase in the CPI (Consumer Price Index for Urban Wage Earners and Clerical Workers) was 1.3 percent in 1998. For alternative II, the annual change in the CPI increases from 1.9 percent in 1999 to the assumed ultimate rate of 3.3 percent, reached in 2007. For alternative I, CPI changes range from 1.8 percent in 1999 to the assumed ultimate rate of 2.3 percent in 2003. For alternative III, the rate of change in the CPI is projected to increase from 2.5 percent in 1999 to the assumed ultimate rate of 4.3 percent in 2005. Ultimate rates of increase in the CPI are 0.2 percentage point lower than in the 1998 report, reflecting the changes announced by the BLS in April 1998. The Trustees also project GDP price inflation, as measured by the GDP deflator, to be 0.1 percentage point lower than CPI-measured inflation, based on the fact that methodological differences in the construction of the two indices suggest a differential of this magnitude is likely to persist in the future.

d. Growth in Wages

For alternative II, the annual rate of change in the average wage in covered employment is assumed to drop from the estimated 5.7 percent increase for 1998, to a projected rate of 2.9 percent for 1999, and then to average about 3.7 percent for the period 1999 through 2008. Growth in the average wage does not reach its ultimate assumed rate of 4.2 percent until after 2010, primarily because price inflation in the early years of the period is assumed to average less than its ultimate level through this period.

The real-wage differential (i.e., the difference between the annual rates of change in the average wage in covered employment and in the CPI) was 4.4 percent in 1998, based on preliminary data. The assumed real-wage differential in the future is a direct result of the rates of change in several economic factors, including productivity growth and inflation. After 1998, under the intermediate assumptions, the real-wage differential is projected to be between 0.9 and 1.0 percent for the years 1999 through 2010, and thereafter remain at the ultimate assumed differential of 0.9 percent—4.2 percent nominal wage growth less 3.3 percent CPI inflation. This is a direct result of the Trustees' decisions with respect to their projection of trend labor productivity and the "wedge" between CPI-measured inflation and GDP-measured price inflation.

For the low cost alternative I, the real-wage differential is assumed to be in the range of 1.3 percent to 1.6 percent between 1999 and 2011, remaining at the ultimate assumed real-wage differential of 1.4 percent thereafter. For the high cost alternative III, the real-wage differential for the short-range period is projected to fluctuate between -1.7 and 1.4 percent, eventually stabilizing at 0.4 percent in 2040 and later.

e. Trust Fund Interest Rate

The average annual nominal interest rate for securities newly issued to the trust funds decreased from 6.6 percent in 1997 to 5.6 percent in 1998. Under the intermediate assumptions it is projected to be below 6.0 percent from 1999 to 2004, reflecting the low projected rate of inflation, and then to move up gradually, reaching the ultimate assumed level of 6.3 percent in 2007, the same rate assumed last year. For the low cost alternative I assumptions, the average annual nominal interest rate is assumed to reach an ultimate level of 6.0 percent in 2009. In the high cost alternative III, it is assumed to peak at 8.0 percent in 2002, and then decline to an ultimate rate of 6.5 percent in 2009.

The assumed ultimate nominal interest rate is based on assumed real interest rates of 3.0 percent for the intermediate assumptions, and 3.7 percent and 2.2 percent for alternatives I and III, respectively. These real interest rates are 0.2 percentage point higher than last year, reflecting the effect of the reduction in the CPI inflation assumption adopted for this year's report.

Table II.D1.—Selected Economic Assumptions by Alternative, Calendar Years 1960-2075

Calendar year	Average annual percentage change in— Real GDP [1]	Average annual wage in covered employment	Consumer Price Index [2]	Real-wage differential [3] (percent)	Average annual interest rate [4] (percent)	Average annual unemployment rate [5] (percent)	Average annual percentage increase in labor force [6]
Historical data:							
1960-64	4.6	3.4	1.2	2.2	3.7	5.7	1.3
1965-69	4.2	6.1	3.9	2.2	5.2	3.8	2.1
1970-74	3.4	6.6	6.2	.4	6.7	5.4	2.3
1975	-.4	6.7	9.1	-2.4	7.4	8.5	1.9
1976	5.4	8.5	5.7	2.8	7.1	7.7	2.4
1977	4.7	6.8	6.5	.3	7.1	7.1	2.9
1978	5.4	11.6	7.7	3.9	8.2	6.1	3.2
1979	2.8	9.8	11.4	-1.6	9.1	5.8	2.6
1980	-.3	6.7	13.4	-6.7	11.0	7.1	1.9
1981	2.3	10.8	10.3	.6	13.3	7.6	1.6
1982	-2.1	6.3	6.0	.3	12.8	9.7	1.5
1983	4.0	4.2	3.0	1.2	11.0	9.6	1.2
1984	7.0	6.0	3.5	2.5	12.4	7.5	1.8
1985	3.6	6.0	3.5	2.6	10.8	7.2	1.7
1986	3.1	4.6	1.6	3.0	8.0	7.0	2.0
1987	2.9	4.6	3.6	1.0	8.4	6.2	1.7
1988	3.8	5.3	4.0	1.3	8.8	5.5	1.5
1989	3.4	3.9	4.8	-.9	8.7	5.3	1.7
1990	1.2	5.1	5.2	-.1	8.6	5.6	1.6
1991	-.9	3.0	4.1	-1.1	8.0	6.8	.4
1992	2.7	4.9	2.9	2.0	7.1	7.5	1.2
1993	2.3	1.9	2.8	-.9	6.1	6.9	.7
1994	3.5	[7] 3.4	2.5	1.0	7.1	6.1	1.3
1995	2.3	[7] 4.0	2.9	1.1	6.9	5.6	.9
1996	3.4	[7] 4.5	2.9	1.6	6.6	5.4	1.2
1997	3.9	[7] 5.7	2.3	3.4	6.6	4.9	1.7
1998	[7] 3.9	[7] 5.7	1.3	4.4	5.6	4.5	1.0
Intermediate:							
1999	2.6	2.9	1.9	1.0	4.7	4.6	1.2
2000	2.0	3.0	2.1	.9	4.9	4.9	1.0
2001	2.0	3.4	2.5	.9	5.2	5.1	1.1
2002	2.0	3.5	2.6	.9	5.4	5.3	.9
2003	2.0	3.7	2.7	1.0	5.6	5.4	.8
2004	2.0	3.9	3.0	.9	5.8	5.4	.8
2005	2.0	4.1	3.1	1.0	6.0	5.5	.9
2006	2.0	4.1	3.2	.9	6.1	5.5	.8
2007	2.0	4.2	3.3	1.0	6.3	5.5	.8
2008	1.9	4.3	3.3	1.0	6.3	5.5	.7
2010	1.8	4.3	3.3	1.0	6.3	5.5	.6
2020	1.4	4.2	3.3	.9	6.3	5.5	.2
2030	1.4	4.2	3.3	.9	6.3	5.5	.2
2040	1.4	4.2	3.3	.9	6.3	5.5	.2
2050	1.3	4.2	3.3	.9	6.3	5.5	.1
2060	1.3	4.2	3.3	.9	6.3	5.5	.1
2070	1.3	4.2	3.3	.9	6.3	5.5	.1
2075	1.2	4.2	3.3	.9	6.3	5.5	.1

Table II.D1.—Selected Economic Assumptions by Alternative, Calendar Years 1960-2075 (Cont.)

Calendar year	Average annual percentage change in— Real GDP [1]	Average annual wage in covered employment	Consumer Price Index [2]	Real-wage differential [3] (percent)	Average annual interest rate [4] (percent)	Average annual unemployment rate [5] (percent)	Average annual percentage increase in labor force [6]
Low Cost:							
1999	3.4	3.4	1.8	1.6	4.7	4.4	1.3
2000	2.5	3.3	1.9	1.4	4.8	4.5	1.2
2001	2.5	3.5	2.1	1.5	5.1	4.5	1.1
2002	2.5	3.4	2.2	1.3	5.3	4.6	1.1
2003	2.5	3.6	2.3	1.4	5.4	4.6	1.0
2004	2.5	3.7	2.3	1.4	5.6	4.6	1.0
2005	2.5	3.6	2.3	1.3	5.6	4.5	1.0
2006	2.5	3.6	2.3	1.3	5.7	4.5	1.0
2007	2.5	3.8	2.3	1.5	5.8	4.5	.9
2008	2.4	3.8	2.3	1.5	5.8	4.5	.8
2010	2.3	3.8	2.3	1.5	6.0	4.5	.8
2020	1.9	3.7	2.3	1.4	6.0	4.5	.3
2030	2.0	3.7	2.3	1.4	6.0	4.5	.5
2040	2.2	3.7	2.3	1.4	6.0	4.5	.6
2050	2.1	3.7	2.3	1.4	6.0	4.5	.5
2060	2.2	3.7	2.3	1.4	6.0	4.5	.6
2070	2.2	3.7	2.3	1.4	6.0	4.5	.6
2075	2.1	3.7	2.3	1.4	6.0	4.5	.6
High Cost:							
1999	2.1	3.2	2.5	.7	5.0	4.6	1.1
2000	-.7	2.8	3.7	-.9	5.6	5.7	.7
2001	2.6	6.5	5.4	1.1	7.1	5.6	.9
2002	1.3	6.3	6.0	.3	8.0	5.6	1.0
2003	-1.7	2.4	4.1	-1.7	7.9	7.2	.4
2004	3.0	5.5	4.2	1.4	7.3	7.0	.7
2005	2.4	5.4	4.3	1.1	6.8	6.5	1.0
2006	1.6	4.8	4.3	.6	6.9	6.5	.8
2007	1.5	4.7	4.3	.4	6.8	6.5	.8
2008	1.5	4.7	4.3	.4	6.8	6.5	.8
2010	1.3	4.8	4.3	.5	6.5	6.5	.5
2020	.9	4.8	4.3	.5	6.5	6.5	.1
2030	.8	4.7	4.3	.4	6.5	6.5	.0
2040	.7	4.7	4.3	.4	6.5	6.5	-.1
2050	.4	4.7	4.3	.4	6.5	6.5	-.3
2060	.3	4.7	4.3	.4	6.5	6.5	-.4
2070	.3	4.7	4.3	.4	6.5	6.5	-.5
2075	.3	4.7	4.3	.4	6.5	6.5	-.5

[1] The real GDP (gross domestic product) is the value of total output of goods and services, expressed in 1992 dollars.

[2] The Consumer Price Index is the annual average value for the calendar year of the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

[3] The real-wage differential is the difference between the percentage increases, before rounding, in the average annual wage in covered employment, and the average annual Consumer Price Index.

[4] The average annual interest rate is the average of the nominal interest rates, which, in practice, are compounded semiannually, for special public-debt obligations issuable to the trust funds in each of the 12 months of the year.

[5] Through 2008, the rates shown are unadjusted civilian unemployment rates. After 2008, the rates are total rates (including military), adjusted by age and sex based on the average labor force for 1997.

[6] Labor force is the total for the United States (including military personnel) and reflects the average of the monthly numbers of persons in the labor force for each year.

[7] Preliminary. Wages in covered employment are considered preliminary for several years primarily due to uncertainty associated with estimates of amounts above the benefit and contribution base. Estimated real GDP for 1998 is subject to revision; the value for the intermediate assumption is shown.

2. Demographic Assumptions

The principal demographic assumptions for the three alternatives are shown in table II.D2.

a. Fertility Rate

For the intermediate projection, the assumed ultimate total fertility rate of 1.9 children per woman is attained in 2023 after a gradual decline from the preliminary estimate for 1998 of 2.04 children per woman. Under the low cost alternative I, the total fertility rate is assumed to rise to an ultimate average level of 2.2 children per woman by 2023. For the high cost alternative III, the total fertility rate is assumed to decrease to an ultimate level of 1.6 children per woman by 2023.

The ultimate total fertility rates, as shown in table II.D2, are unchanged from last year's report. Due to the higher-than-expected level of additional data for the years 1996 and 1997, the total fertility rates during the first 25 years of the projection period are, generally, slightly higher than those in last year's report.

b. Death Rate and Life Expectancy

Under the intermediate assumptions, the age-sex-adjusted death rate is assumed to decrease steadily during the entire projection period, with a total reduction of 34 percent from the 1998 level by 2073. Life expectancies at birth are 79.6 years for men and 84.1 years for women based on mortality projected for 2075, compared to 73.4 and 79.4 years, respectively, based on 1998 mortality. Life expectancies at age 65 for 2075 mortality are projected to be 18.9 years for men and 22.1 years for women, compared to 15.7 and 19.2 years, respectively, for 1998 mortality.

The age-sex-adjusted death rate for the low cost alternative I is assumed to decrease more slowly than for the intermediate alternative II, with the total reduction from the 1998 level being 14 percent by 2073. Life expectancies at birth based on mortality projected for 2075 are 76.6 years for men and 81.2 years for women, while at age 65 they are 16.7 and 19.7 years, respectively.

For the high cost alternative III, the age-sex-adjusted death rate is assumed to decrease more rapidly than for alternative II, with the total reduction from the 1998 level being 54 percent by 2073. Life

expectancies at birth for 2075 mortality are 83.5 years for men and 88.0 years for women, while at age 65 they are 21.9 and 25.2 years, respectively.

The life expectancies shown in table II.D2 are based on the concept of a "period" life table. The "period" life expectancy at a given age for any year represents the average number of years of life remaining if all persons at that age in the population were to experience the mortality rates by age observed in, or assumed for, that year. Thus, the life expectancies are not based on the concept of a "cohort" life table; i.e., they do not represent the effects of mortality rates observed in, or assumed for, each later year of that cohort's remaining lifetime.

Mortality values shown in table II.D2 are different from values in last year's report. Inclusion of additional data for the years 1995-97 resulted in the estimation of lower mortality rates overall for the starting year 1997 and slightly higher rates of mortality reduction during the first 25 years of the projection period. The ultimate rates of reduction in mortality are the same as those used in last year's report.

c. Immigration

Total net immigration is assumed to be 900,000 persons per year for the intermediate projection. The assumed level of net annual immigration is the combination of 600,000 net legal immigrants per year and 300,000 net other-than-legal immigrants per year. For the low cost alternative I, total net immigration is assumed to be 1,150,000 persons per year. The assumed level of net annual immigration is the combination of 700,000 net legal immigrants and 450,000 net other-than-legal immigrants. Under the high cost alternative III, total net immigration is assumed to be 750,000 persons per year, the combination of 550,000 net legal immigrants per year and 200,000 net other-than-legal immigrants.

Table II.D2.—Selected Demographic Assumptions by Alternative, Calendar Years 1940-2075

Calendar year	Total fertility rate [1]	Age-sex-adjusted death rate [2] (per 100,000)	Life expectancy [3]			
			At birth		At age 65	
			Male	Female	Male	Female
Historical data:						
1940	2.23	1,672.6	61.4	65.7	11.9	13.4
1945	2.42	1,488.6	62.9	68.4	12.6	14.4
1950	3.03	1,339.9	65.6	71.1	12.8	15.1
1955	3.50	1,243.0	66.7	72.8	13.1	15.6
1960	3.61	1,237.9	66.7	73.2	12.9	15.9
1965	2.88	1,210.8	66.8	73.8	12.9	16.3
1970	2.43	1,138.4	67.2	74.9	13.1	17.1
1975	1.77	1,020.9	68.7	76.6	13.7	18.0
1976	1.74	1,010.1	69.1	76.8	13.8	18.1
1977	1.80	981.8	69.4	77.2	13.9	18.3
1978	1.76	976.3	69.6	77.3	14.0	18.3
1979	1.82	944.8	70.0	77.7	14.2	18.6
1980	1.85	961.1	69.9	77.5	14.0	18.4
1981	1.83	934.5	70.4	77.9	14.2	18.6
1982	1.83	906.4	70.8	78.2	14.5	18.8
1983	1.81	916.0	70.9	78.1	14.3	18.6
1984	1.80	909.2	71.1	78.2	14.4	18.7
1985	1.84	912.3	71.1	78.2	14.4	18.6
1986	1.84	904.8	71.1	78.3	14.5	18.7
1987	1.87	895.6	71.3	78.4	14.6	18.7
1988	1.93	906.0	71.2	78.3	14.6	18.7
1989	2.01	882.4	71.5	78.6	14.8	18.9
1990	2.07	865.8	71.8	78.9	15.0	19.0
1991	2.07	854.7	71.9	79.0	15.1	19.1
1992	2.06	843.6	72.2	79.2	15.2	19.2
1993	2.04	863.3	72.0	78.9	15.1	19.0
1994	2.04	852.3	72.2	79.0	15.3	19.0
1995	2.02	849.9	72.4	79.0	15.3	19.0
1996	2.03	837.0	72.8	79.1	15.4	19.0
1997 [4]	2.04	807.4	73.6	79.3	15.9	19.1
1998 [4]	2.04	811.7	73.4	79.4	15.7	19.2
Intermediate:						
1999	2.03	804.6	73.6	79.5	15.8	19.2
2000	2.03	797.8	73.8	79.6	15.8	19.2
2005	2.00	768.2	74.6	80.1	16.1	19.4
2010	1.97	746.3	75.2	80.4	16.3	19.5
2015	1.94	725.8	75.7	80.7	16.5	19.6
2020	1.92	704.8	76.0	81.0	16.7	19.8
2025	1.90	684.4	76.4	81.4	16.9	20.0
2030	1.90	665.0	76.8	81.7	17.1	20.2
2035	1.90	646.5	77.1	82.0	17.3	20.5
2040	1.90	629.0	77.4	82.3	17.5	20.7
2045	1.90	612.3	77.8	82.5	17.7	20.9
2050	1.90	596.4	78.1	82.8	17.9	21.1
2055	1.90	581.2	78.4	83.1	18.1	21.3
2060	1.90	566.7	78.7	83.4	18.3	21.5
2065	1.90	552.9	79.0	83.6	18.5	21.7
2070	1.90	539.7	79.3	83.9	18.7	21.9
2075	1.90	527.1	79.6	84.1	18.9	22.1

Table II.D2.—Selected Demographic Assumptions by Alternative, Calendar Years 1940-2075 (Cont.)

Calendar year	Total fertility rate [1]	Age-sex-adjusted death rate [2] (per 100,000)	Life expectancy [3]			
			At birth		At age 65	
			Male	Female	Male	Female
Low Cost:						
1999	2.05	811.1	73.5	79.4	15.7	19.1
2000	2.06	810.6	73.6	79.4	15.7	19.1
2005	2.08	807.7	74.0	79.5	15.7	18.9
2010	2.11	808.9	74.2	79.5	15.8	18.8
2015	2.15	800.9	74.6	79.6	15.8	18.8
2020	2.18	791.0	74.8	79.8	15.9	18.8
2025	2.20	780.8	75.0	79.9	16.0	18.9
2030	2.20	770.9	75.2	80.1	16.0	19.0
2035	2.20	761.3	75.3	80.2	16.1	19.1
2040	2.20	752.1	75.5	80.3	16.2	19.1
2045	2.20	743.2	75.7	80.5	16.3	19.2
2050	2.20	734.6	75.8	80.6	16.3	19.3
2055	2.20	726.3	76.0	80.7	16.4	19.4
2060	2.20	718.2	76.1	80.9	16.5	19.4
2065	2.20	710.4	76.3	81.0	16.5	19.5
2070	2.20	702.9	76.4	81.1	16.6	19.6
2075	2.20	695.5	76.6	81.2	16.7	19.7
High Cost:						
1999	2.01	798.7	73.7	79.6	15.8	19.3
2000	1.99	786.3	73.9	79.8	15.9	19.4
2005	1.91	733.6	75.1	80.6	16.4	19.8
2010	1.83	694.1	76.0	81.3	16.8	20.1
2015	1.74	660.4	76.6	81.8	17.2	20.5
2020	1.65	627.2	77.3	82.4	17.6	20.9
2025	1.60	595.5	77.9	82.9	18.0	21.3
2030	1.60	565.6	78.5	83.5	18.4	21.7
2035	1.60	537.6	79.1	84.0	18.8	22.1
2040	1.60	511.3	79.7	84.6	19.1	22.5
2045	1.60	486.6	80.2	85.1	19.5	22.9
2050	1.60	463.4	80.8	85.6	19.9	23.3
2055	1.60	441.5	81.3	86.1	20.3	23.7
2060	1.60	421.0	81.9	86.6	20.7	24.0
2065	1.60	401.6	82.4	87.1	21.1	24.4
2070	1.60	383.3	82.9	87.6	21.5	24.8
2075	1.60	366.2	83.5	88.0	21.9	25.2

[1] The total fertility rate for any year is the average number of children who would be born to a woman in her lifetime if she were to experience the birth rates by age observed in, or assumed for, the selected year, and if she were to survive the entire childbearing period. The ultimate total fertility rate is assumed to be reached in 2023.

[2] The age-sex-adjusted death rate is the crude rate that would occur in the enumerated total population as of April 1, 1990, if that population were to experience the death rates by age and sex observed in, or assumed for, the selected year.

[3] The life expectancy for any year is the average number of years of life remaining for a person if that person were to experience the death rates by age observed in, or assumed for, the selected year.

[4] Preliminary or estimated.

In addition to the assumptions discussed above, many other factors are necessary to prepare the estimates presented in this report. Section II.H includes a discussion of a number of those factors.

E. AUTOMATIC ADJUSTMENTS

The Social Security Act specifies that certain program amounts affecting the determination of OASDI benefits are to be adjusted annually, in general, to reflect changes in the economy. The law prescribes specific formulas that, when applied to reported statistics, produce "automatic" revisions in these program amounts and hence in the benefit-computation procedures.

In this section, values are shown for program amounts that are subject to automatic adjustment, from the time that such adjustments became effective through 2008. Projected values for future years are based on the economic assumptions described in the preceding section of this report. Appendix F, in addition to providing the most recent determinations of program amounts under the automatic adjustment provisions, also provides a more complete description of such amounts.

Under the automatic-adjustment provisions affecting cost-of-living increases, benefits generally are increased once a year. These provisions were originally enacted in 1972 and first became effective with the benefit increase effective for June 1975. The 1983 amendments changed the effective month to December for years after 1982. For persons becoming eligible for benefits in 1979 and later, the increases generally begin with the year in which the worker reaches age 62, or becomes disabled or dies, if earlier. An automatic cost-of-living benefit increase of 1.3 percent, effective for December 1998, was announced in October 1998, as described in appendix F. The automatic cost-of-living benefit increase for any year is normally based on the change in the CPI from the third quarter of the previous year to the third quarter of the current year.[1]

Under section 215(b)(3) of the Social Security Act, the national average wage index[2] for each year after 1950 is used to index the earnings of most workers first becoming eligible for benefits in 1979 or later. This procedure converts a worker's past earnings to approximately their equivalent values near the time of the worker's retirement or

---

[1] If the combined assets of the OASI and DI Trust Funds at the beginning of a year represent less than 20 percent of annual expenditures for that year, then the automatic benefit increase for December is limited to the lesser of the increase in wages or prices. This "stabilizer" provision has not affected any benefit increases since its enactment in 1983. Based on the projected operations of the trust funds shown in this report under the alternative sets of assumptions, the stabilizer provision is unlikely to affect any future OASDI benefit increases under present law.

[2] The average wage indexed is defined in the Code of Federal Regulations (Title 20, Chapter III, section 404.211(c)).

other eligibility, and these indexed values are used to calculate the worker's benefit. The average wage index is also used to adjust most of the program amounts that are subject to the automatic-adjustment provisions. Table II.E1 shows the average wage index as determined for each year 1951 through 1997.

Table II.E1.—Average Wage Index, Calendar Years 1951-97

Year	Amount	Year	Amount	Year	Amount
1951	$2,799.16	1971	$6,497.08	1991	$21,811.60
1952	2,973.32	1972	7,133.80	1992	22,935.42
1953	3,139.44	1973	7,580.16	1993	23,132.67
1954	3,155.64	1974	8,030.76	1994	23,753.53
1955	3,301.44	1975	8,630.92	1995	24,705.66
1956	3,532.36	1976	9,226.48	1996	25,913.90
1957	3,641.72	1977	9,779.44	1997	27,426.00
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	1985	16,822.51		
1966	4,938.36	1986	17,321.82		
1967	5,213.44	1987	18,426.51		
1968	5,571.76	1988	19,334.04		
1969	5,893.76	1989	20,099.55		
1970	6,186.24	1990	21,027.98		

The law provides for an automatic increase in the OASDI program's contribution and benefit base, based on the increase in the average wage index, for the year following a year in which an automatic benefit increase became effective. As described in appendix F, the contribution and benefit base for 1999 was determined to be $72,600.

Under the retirement earnings test, earnings below certain amounts are exempted from the withholding of benefits payable to beneficiaries under age 70. Different exempt amounts apply for beneficiaries under the normal retirement age (currently, age 65) and for those at this age and above, up to age 69. The automatic adjustment provisions require that such exempt amounts be increased in the year following a year in which an automatic cost-of-living benefit increase becomes effective. Generally, increases in the exempt amounts are based on increases in the average wage index. Public Law 104-121, however, mandates a fixed series of exempt amounts for persons aged 65 to 69, for years 1996-2002. After 2002, the exempt amounts are indexed.

Table II.E2 shows historical automatic cost-of-living benefit increases for the years 1975-98 and assumed increases through 2008. The table also shows historical year-to-year percentage increases in the average wage index for 1975-97 and assumed increases through 2008. As

noted above, the OASDI contribution and benefit base and the retirement test exempt amounts for those under the normal retirement age are adjusted on the basis of such wage increases. After 2002, the retirement test exempt amounts for those between the normal retirement age and age 70 are also indexed based on increases in the average wage index. The historical and projected amounts for this base and the exempt amounts are also shown in table II.E2. The projections are shown under the three alternative sets of economic assumptions described in the previous section.

Table II.E2.—Cost-of-Living Benefit Increases, Average Wage Index Increases, OASDI Contribution and Benefit Bases, and Retirement Earnings Test Exempt Amounts, by Alternative, 1975-2008

Calendar year	OASDI benefit increases[1] (percent)	Increase in average wage index[2] (percent)	OASDI contribution and benefit base[3]	Retirement earnings test exempt amount	
				Under NRA[4]	NRA[4] and over[5]
Historical data:					
1975	8.0	7.5	$14,100	$2,520	$2,520
1976	6.4	6.9	15,300	2,760	2,760
1977	5.9	6.0	16,500	3,000	3,000
1978	6.5	7.9	17,700	3,240	4,000
1979	9.9	8.7	22,900	3,480	4,500
1980	14.3	9.0	25,900	3,720	5,000
1981	11.2	10.1	29,700	4,080	5,500
1982	7.4	5.5	32,400	4,440	6,000
1983	3.5	4.9	35,700	4,920	6,600
1984	3.5	5.9	37,800	5,160	6,960
1985	3.1	4.3	39,600	5,400	7,320
1986	1.3	3.0	42,000	5,760	7,800
1987	4.2	6.4	43,800	6,000	8,160
1988	4.0	4.9	45,000	6,120	8,400
1989	4.7	4.0	48,000	6,480	8,880
1990	5.4	4.6	51,300	6,840	9,360
1991	3.7	3.7	53,400	7,080	9,720
1992	3.0	5.2	55,500	7,440	10,200
1993	2.6	.9	57,600	7,680	10,560
1994	2.8	2.7	60,600	8,040	11,160
1995	2.6	4.0	61,200	8,160	11,280
1996	2.9	4.9	62,700	8,280	12,500
1997	2.1	5.8	65,400	8,640	13,500
1998	1.3	[6] 5.4	68,400	9,120	14,500
Intermediate:					
1999	1.9	2.9	[7] 72,600	[7] 9,600	15,500
2000	2.2	3.0	76,200	10,080	17,000
2001	2.5	3.3	78,600	10,440	25,000
2002	2.6	3.5	81,000	10,680	30,000
2003	2.8	3.7	83,700	11,040	30,960
2004	3.0	3.9	86,400	11,520	32,040
2005	3.2	4.0	89,700	11,880	33,240
2006	3.2	4.0	93,300	12,360	34,560
2007	3.2	4.1	96,900	12,840	35,880
2008	3.3	4.2	100,800	13,320	37,320

Table II.E2.—Cost-of-Living Benefit Increases, Average Wage Index Increases, OASDI Contribution and Benefit Bases, and Retirement Earnings Test Exempt Amounts, by Alternative, 1975-2008 (Cont.)

Calendar year	OASDI benefit increases[1] (percent)	Increase in average wage index[2] (percent)	OASDI contribution and benefit base[3]	Retirement earnings test exempt amount	
				Under NRA[4]	NRA[4] and over[5]
Low Cost:					
1999	1.8	3.4	[7] $72,600	[7] $9,600	$15,500
2000	2.0	3.2	76,500	10,080	17,000
2001	2.0	3.5	78,900	10,440	25,000
2002	2.2	3.4	81,600	10,800	30,000
2003	2.3	3.5	84,300	11,160	31,080
2004	2.3	3.6	87,300	11,520	32,040
2005	2.3	3.5	90,300	12,000	33,240
2006	2.3	3.5	93,600	12,360	34,440
2007	2.3	3.7	96,900	12,840	35,640
2008	2.3	3.7	100,200	13,320	36,960
High Cost:					
1999	2.7	3.2	[7] 72,600	[7] 9,600	15,500
2000	3.8	2.8	75,900	10,080	17,000
2001	5.7	6.3	78,600	10,440	25,000
2002	6.0	6.2	80,700	10,680	30,000
2003	3.8	2.5	85,800	11,400	31,920
2004	4.2	5.4	91,200	12,120	33,840
2005	4.4	5.3	93,300	12,360	34,680
2006	4.3	4.8	98,400	13,080	36,600
2007	4.3	4.6	103,500	13,800	38,520
2008	4.3	4.7	108,600	14,400	40,320

[1] Effective with benefits payable for June in each year 1975-82, and for December in each year after 1982.

[2] Increase in the average wage index from prior year to the year shown. See footnote 6 below and table III.B1 for projected dollar amounts of the average wage index.

[3] Amounts for 1979-81 were specified by Public Law 95-216. The bases for years after 1989 were increased slightly by changes to the indexing procedure, as required by Public Law 101-239. Prior to 1991, the Hospital Insurance (HI) contribution base was the same as the OASDI contribution and benefit base. Higher HI bases of $125,000, $130,200, and $135,000 applied for 1991-93, respectively. Public Law 103-66 repealed the HI contribution base.

[4] Normal retirement age.

[5] In 1955-82, the retirement earnings test did not apply at ages 72 and over; beginning in 1983, it does not apply at ages 70 and over. Amounts for 1978-82 specified by Public Law 95-216; for 1996-2002, Public Law 104-121.

[6] Based on an estimated average wage index of $28,893.68 for 1998.

[7] Actual amount, as determined and announced in October 1998.

Other wage-indexed amounts are shown in table II.E3. The table provides historical values from 1978, when the amount of earnings required for a quarter of coverage was first indexed, through 1999, and also shows projected amounts under the intermediate assumptions through 2008. These other wage-indexed program amounts are described in the following paragraphs.

As noted earlier, a worker who becomes eligible for benefits in 1979 or later generally receives a benefit based on his or her indexed earnings. These indexed earnings are used to calculate the worker's Average Indexed Monthly Earnings (AIME). The basic formula used to

compute the Primary Insurance Amount (PIA) for workers who reach age 62, become disabled, or die in 1999 is:

90 percent of the first $505 of AIME, plus
32 percent of AIME in excess of $505
but not in excess of $3,043, plus
15 percent of AIME in excess of $3,043.

The amounts separating the individual's AIME into intervals—the "bend points"—are adjusted automatically by the changes in average wages as specified in section 215(a)(1)(B) of the Social Security Act.

A similar formula is used to compute the maximum total amount of monthly benefits payable on the basis of the earnings of a retired or deceased individual. This formula is a function of the individual's PIA, and is shown below for workers who first became eligible for benefits, or who died before becoming eligible, in 1999:

150 percent of the first $645 of PIA, plus
272 percent of the PIA in excess of $645
but not in excess of $931, plus
134 percent of the PIA in excess of $931
but not in excess of $1,214, plus
175 percent of the PIA in excess of $1,214.

These PIA-interval bend points are adjusted automatically in accordance with section 203(a)(2) of the Act.

An individual's insured status depends on the number of quarters of coverage he or she has earned while in covered employment. The 1977 amendments specified the amount of earnings required in 1978 to be credited with a quarter of coverage and provided for automatic adjustment of this amount for years thereafter.

The law provides for the determination of the OASDI contribution and benefit bases that would have been in effect in each year after 1978 under the automatic-adjustment provisions as in effect before the enactment of the 1977 amendments. This "old-law base" is used in determining special-minimum benefits for certain workers who have many years of low earnings in covered employment.[1] Beginning in 1986, the old-law base is also used in the calculation of OASDI benefits for certain workers who are eligible to receive pensions based on

[1] For special minimum purposes, "low earnings" means earnings of at least 15 percent of the old-law base. Prior to 1991, the definition required earnings of at least 25 percent of the old-law base.

noncovered employment. In addition, it is used for certain purposes under the Railroad Retirement program and the Employee Retirement Income Security Act of 1974.

Table II.E3.—Selected OASDI Program Amounts[1] Determined Under the Automatic-Adjustment Provisions, Calendar Years 1978-99, and Projected Future Amounts, Calendar Years 2000-08, on the Basis of the Intermediate Set of Assumptions

Calendar year	AIME "bend points" in PIA formula		PIA "bend points" in maximum-family-benefit formula			Earnings required for a quarter of coverage[2]	"Old law" contribution and benefit base[3]
	First	Second	First	Second	Third		
Historical data:							
1978	(4)	(4)	(4)	(4)	(4)	[5] $250	(4)
1979	[5] $180	[5] $1,085	[5] $230	[5] $332	[5] $433	260	$18,900
1980	194	1,171	248	358	467	290	20,400
1981	211	1,274	270	390	508	310	22,200
1982	230	1,388	294	425	554	340	24,300
1983	254	1,528	324	468	610	370	26,700
1984	267	1,612	342	493	643	390	28,200
1985	280	1,691	358	517	675	410	29,700
1986	297	1,790	379	548	714	440	31,500
1987	310	1,866	396	571	745	460	32,700
1988	319	1,922	407	588	767	470	33,600
1989	339	2,044	433	626	816	500	35,700
1990	356	2,145	455	656	856	520	38,100
1991	370	2,230	473	682	890	540	39,600
1992	387	2,333	495	714	931	570	41,400
1993	401	2,420	513	740	966	590	42,900
1994	422	2,545	539	779	1,016	620	45,000
1995	426	2,567	544	785	1,024	630	45,300
1996	437	2,635	559	806	1,052	640	46,500
1997	455	2,741	581	839	1,094	670	48,600
1998	477	2,875	609	880	1,147	700	50,700
1999	505	3,043	645	931	1,214	740	53,700
Estimates:							
2000	532	3,206	680	981	1,279	780	56,700
2001	547	3,299	699	1,009	1,316	810	58,200
2002	564	3,398	720	1,040	1,356	830	60,000
2003	582	3,511	744	1,074	1,401	860	62,100
2004	603	3,633	770	1,112	1,450	890	64,200
2005	625	3,766	798	1,152	1,503	920	66,600
2006	649	3,912	829	1,197	1,561	960	69,300
2007	675	4,068	862	1,245	1,624	990	72,000
2008	702	4,233	897	1,295	1,689	1,030	75,000

[1] Other program amounts determined under automatic-adjustment provisions have negligible implications for the financial operations of the trust funds. These amounts are the substantial gainful activity amount for blind beneficiaries, the coverage threshold for domestic workers, and, for years after 1999, the coverage threshold for election workers.

[2] See appendix F for a description of quarter-of-coverage requirements prior to 1978.

[3] Contribution and benefit base that would have been determined automatically under the law in effect prior to enactment of the Social Security Amendments of 1977. The bases for years after 1989 were increased slightly by changes to the indexing procedure to determine the base, as required by Public Law 101-239.

[4] No provision in law for this amount in this year.

[5] Amount specified for first year by Social Security Amendments of 1977; amounts for subsequent years subject to automatic-adjustment provisions.

In addition to the program amounts affecting the determination of OASDI benefits that reflect changes in the economy, there are certain legislated changes that have affected, and will affect, benefits. One such change, the scheduled increases in the retirement test exempt amount for beneficiaries aged 65 to 69 over the years 1996-2002, was shown in table II.E2. Other important changes are the scheduled increases in the normal retirement age and in the delayed retirement credits. Table II.E4 shows the scheduled changes in these two important items and their effect on benefits expressed as a percentage of PIA.

Table II.E4.—Increases in Normal Retirement Age and Delayed Retirement Credits, With Resulting Benefit, as a Percentage of PIA, Payable at Selected Ages, for Persons Reaching Age 62 in Each Year 1986 and Later

Year of birth	Year of attainment of age 62	Normal retirement age (NRA)	Credit for each year of delayed retirement after NRA (percent)	Benefit, as a percentage of PIA, beginning at age —				
				62	65	66	67	70
1924	1986	65	3	80	100	103	106	115
1925	1987	65	3 1/2	80	100	103 1/2	107	117 1/2
1926	1988	65	3 1/2	80	100	103 1/2	107	117 1/2
1927	1989	65	4	80	100	104	108	120
1928	1990	65	4	80	100	104	108	120
1929	1991	65	4 1/2	80	100	104 1/2	109	122 1/2
1930	1992	65	4 1/2	80	100	104 1/2	109	122 1/2
1931	1993	65	5	80	100	105	110	125
1932	1994	65	5	80	100	105	110	125
1933	1995	65	5 1/2	80	100	105 1/2	111	127 1/2
1934	1996	65	5 1/2	80	100	105 1/2	111	127 1/2
1935	1997	65	6	80	100	106	112	130
1936	1998	65	6	80	100	106	112	130
1937	1999	65	6 1/2	80	100	106 1/2	113	132 1/2
1938	2000	65, 2 mo	6 1/2	79 1/6	98 8/9	105 5/12	111 11/12	131 5/12
1939	2001	65, 4 mo	7	78 1/3	97 7/9	104 2/3	111 2/3	132 2/3
1940	2002	65, 6 mo	7	77 1/2	96 2/3	103 1/2	110 1/2	131 1/2
1941	2003	65, 8 mo	7 1/2	76 2/3	95 5/9	102 1/2	110	132 1/2
1942	2004	65, 10 mo	7 1/2	75 5/6	94 4/9	101 1/4	108 3/4	131 1/4
1943-54	2005-16	66	8	75	93 1/3	100	108	132
1955	2017	66, 2 mo	8	74 1/6	92 2/9	98 8/9	106 2/3	130 2/3
1956	2018	66, 4 mo	8	73 1/3	91 1/9	97 7/9	105 1/3	129 1/3
1957	2019	66, 6 mo	8	72 1/2	90	96 2/3	104	128
1958	2020	66, 8 mo	8	71 2/3	88 8/9	95 5/9	102 2/3	126 2/3
1959	2021	66, 10 mo	8	70 5/6	87 7/9	94 4/9	101 1/3	125 1/3
1960 & later	2022 & later	67	8	70	86 2/3	93 1/3	100	124

F. ACTUARIAL ESTIMATES

Section 201(c)(2) of the Social Security Act requires the Board of Trustees to report annually to the Congress on the operations and status of the OASI and DI Trust Funds during the preceding fiscal year and on the expected operations and status of those trust funds during the ensuing 5 fiscal years. Section 201(c) of the Act also requires that the annual report include "a statement of the actuarial status of the Trust Funds."

The required information for the fiscal year that ended September 30, 1998, is presented in section II.C of this report. Estimates of the operations and status of the trust funds during fiscal years 1999-2008 are presented in this section. In addition, similar estimates for calendar years 1999-2008 are presented. A description of the actuarial status of the trust funds over the next 75 years, including long-range estimates of program income and program costs over that period, is also included in this section. The methods used to estimate the short-range operations of the trust funds and the long-range actuarial status are described in section II.H.

A number of different measures are useful in evaluating the financial status of the trust funds over the next 75 years. In addition to actuarial balance, and summarized income and cost rates, which are described in detail below, these measures include (1) the levels of future annual income and outgo, both in terms of dollars and relative to annual taxable earnings or payroll, including the pattern and ultimate values of such levels; (2) the annual differences between income and outgo, i.e., the annual balances, in dollars and relative to taxable payroll; (3) the size of future fund accumulations, in dollars and relative to future annual expenditures; and (4) the year in which trust fund exhaustion is estimated to occur. Estimates of all these indicators are presented in this section or in the appendices of this report. However, more attention is focused on certain elements of these measures, as described below.

In the short range, the adequacy of the trust fund level is generally measured by the "trust fund ratio," which is defined to be the assets at the beginning of the year expressed as a percentage of the outgo during the year. (For the years 1984-90, the assets at the beginning of the year also included advance tax transfers for the month of January. Assets at the beginning of subsequent years include advance tax transfers only if such transfers are needed to enable the timely payment of benefits.) The trust fund ratio represents the proportion of a

year's outgo which can be paid with the funds available at the beginning of the year. During periods when trust fund disbursements exceed income, as might happen during an economic recession, trust fund assets are used to meet the shortfall. In the event of recurring shortfalls for an extended period, the trust funds can allow sufficient time for the development, enactment, and implementation of legislation to restore financial stability to the program.

The test of financial adequacy over the short-range projection period (the next 10 years) is applicable to each of the OASI and DI Trust Funds, separately, as well as to the combined funds. The requirements of this test are as follows: If the estimated trust fund ratio for a fund is at least 100 percent at the beginning of the projection period, then it must be projected to remain at or above 100 percent throughout the 10-year projection period. Alternatively, if the ratio is initially less than 100 percent, then it must be projected to reach a level of at least 100 percent by the beginning of the sixth year and to remain at or above 100 percent throughout the remainder of the 10-year period. In addition, the fund's estimated assets at the beginning of each month of the 10-year period must be sufficient to cover that month's disbursements. This test is applied on the basis of the intermediate (alternative II) estimates. Failure to meet this test by either trust fund is an indication that solvency of the program over the next 10 years is in question and that Congressional action is needed to improve the short-range financial adequacy of the program.

Basic to the discussion of the long-range actuarial status are the concepts of "income rate" and "cost rate," each of which is expressed as a percentage of taxable payroll. The annual income rate is the ratio of income from revenues (payroll tax contributions and income from the taxation of benefits) to the OASDI taxable payroll for the year. The OASDI taxable payroll consists of the total earnings which are subject to OASDI taxes, with some relatively small adjustments. [1] Because the taxable payroll reflects these adjustments, the annual income rate can be defined to be the sum of the OASDI combined employee-employer contribution rate (or the payroll-tax rate) scheduled in the law and the rate of income from taxation of benefits (which is, in turn, expressed as a percentage of taxable payroll). As such, it excludes reimbursements from the general fund of the Treasury for the costs

[1] Adjustments are made to include, after 1982, deemed wage credits based on military service, and to reflect the lower effective tax rates (as compared to the combined employee-employer rate) which apply to multiple-employer "excess wages," and which did apply, before 1984, to net earnings from self-employment and, before 1988, to income from tips.

associated with special monthly payments to certain uninsured persons who attained age 72 before 1968 and who have fewer than 3 quarters of coverage, transfers under the interfund borrowing provisions, and net investment income.

The annual cost rate is the ratio of the cost (or outgo, expenditures, or disbursements) of the program to the taxable payroll for the year. In this context, the outgo is defined to include benefit payments, special monthly payments to certain uninsured persons who have 3 or more quarters of coverage (and whose payments are therefore not reimbursable from the general fund of the Treasury), administrative expenses, net transfers from the trust funds to the Railroad Retirement program under the financial-interchange provisions, and payments for vocational rehabilitation services for disabled beneficiaries; it excludes special monthly payments to certain uninsured persons whose payments are reimbursable from the general fund of the Treasury (as described above), and transfers under the interfund borrowing provisions. For any year, the income rate minus the cost rate is referred to as the "balance" for the year. (In this context, the term "balance" does not represent the assets of the trust funds, which are sometimes referred to as the "balance" in the trust funds.)

The long-range actuarial status of the trust funds has generally been summarized by the calculation of the "actuarial balance." The actuarial balance for a specified valuation period is defined as the difference between the summarized income rate and the summarized cost rate over that period. The summarized income rate over a period of years is equal to the ratio of (a) the sum of the trust fund balance at the beginning of the period plus the present value of the total income (excluding interest earnings) during the period to (b) the present value of the taxable payroll for the years in the period. The summarized cost rate is equal to the ratio of (a) the sum of the present value of the outgo during the period plus the present value of a targeted trust fund level at the end of the period equal to the following year's outgo to (b) the present value of the taxable payroll for the years in the period. A targeted ending trust fund level of 1 year's expenditures is considered to be an adequate reserve for unforeseen contingencies; thus, in addition to the total outgo during the projection period, the summarized cost rate includes the cost of reaching and maintaining a target trust fund ratio of 100 percent through the end of the projection period.

The present-value calculations take account of the effect of interest on future income and outgo. In calculating the present value of future

income, for example, the income in each year of the projection period is discounted to the beginning of the period using the interest rate assumed for calculating the interest earnings of the trust funds during the period. Thus, the calculations of the summarized income and cost rates are consistent with the estimates of trust fund operations over the projection period.

If the program is in exact actuarial balance for a particular period (that is, if the actuarial balance is zero), then the present value of estimated future income for all years in the period, plus the beginning trust fund balance, is exactly equal to the present value of estimated future expenditures for all years in the period, plus the present value of targeted trust fund assets at the end of the period in the amount of the next year's estimated outgo. A negative actuarial balance indicates that future estimated income and the beginning trust fund balance together are not sufficient to accumulate to the level of the targeted assets while also covering all estimated expenditures in the period. A positive actuarial balance indicates that in addition to covering all estimated expenditures in the period, the estimated ending trust fund assets are more than the targeted level.

The size of the actuarial balance represents a measure of the program's financial adequacy for the period in question. If the actuarial balance is a deficit, the size of the deficit can be interpreted as that amount which, if added to the combined employee-employer contribution rate scheduled under present law for each of the next 75 years, would bring the program into exact actuarial balance. Of course, there are any number of different ways to increase taxes or to reduce expenditures, as well as different combinations of such changes, that would have an equivalent effect on the actuarial balance. Any one of these different sets of changes would, therefore, bring the program into exact actuarial balance.

The long-range test of close actuarial balance applies to a set of valuation periods beginning with the first 10 years and continuing through the first 11 years, the first 12 years, etc., up to and including the full 75-year projection period. Under the long-range test, summarized income rates and cost rates are calculated for each of the 66 valuation periods in the full 75-year long-range projection period, with the first of these periods consisting of the next 10 years. Each succeeding period becomes longer by 1 year, culminating with the period consisting of the next 75 years. The long-range test is met if, for each of the 66 time periods, the actuarial balance is not less than zero or is nega-

tive by, at most, a specified percentage of the summarized cost rate for the same time period. The percentage allowed for a negative actuarial balance is 5 percent for the full 75-year period. For shorter periods, the allowable percentage begins with zero for the first 10 years and increases uniformly for longer periods, until it reaches the maximum percentage of 5 percent allowed for the 75-year period. The criterion for meeting the test is less stringent for the longer periods in recognition of the greater uncertainty associated with estimates for more distant years.

When a negative actuarial balance in excess of the allowable percentage of the summarized cost rate is projected for one or more of the 66 separate valuation periods, the program fails the long-range test of close actuarial balance. Being out of close actuarial balance indicates that the program is expected to experience financial problems in the future and that ways of improving the financial status of the program should be considered. The sooner the actuarial balance is less than the minimum allowable balance, expressed as a percentage of the summarized cost rate, the more urgent is the need for corrective action. However, it is recognized that necessary changes in program financing or benefit provisions should not be put off until the last possible moment if future beneficiaries and workers are to be able to effectively plan for their retirement.

It was noted earlier in this section that in addition to the measures used in the tests of the overall financial condition of the program, other financial measures are also presented in this report. All of these measures are important factors in arriving at a full understanding of the financial position of the OASDI program.

1. Operations and Status of the Trust Funds During the Period October 1, 1998, to December 31, 2008

This subsection presents estimates of the operations and financial status of the OASI and DI Trust Funds for the period October 1, 1998, to December 31, 2008, based on the assumptions described in the preceding two sections. No changes are assumed to occur in the present statutory provisions and regulations under which the OASDI program operates. [1]

These estimates indicate that the assets of the OASI Trust Fund would continue to increase throughout the next 10 years, rapidly under the intermediate and low cost assumptions and less rapidly under the high cost assumptions. The estimates indicate that the assets of the DI Trust Fund would also continue to increase throughout the next 10 years under the intermediate and low cost assumptions, at a slightly lower rate than for the OASI Trust Fund. Under the high cost assumptions, DI assets would increase for a few years before declining. Although not shown in these estimates, DI assets would become insufficient to permit the timely payment of benefits in 2011 under the high cost assumptions.

As will be shown later in this subsection, the OASI and DI Trust Funds, both individually and combined, meet the requirements of the Trustees' test of short-range financial adequacy.

[1] The estimates shown in this subsection reflect 12 months of benefit payments in each year of the short-range projection period. In practice, 13 benefit payments have been made in certain years, with the next year having only 11 payments. This situation resulted from the statutory requirement that benefit checks be delivered early when the normal check delivery date is a Saturday, Sunday, or legal public holiday. For example, the benefit checks for December 1998 would normally have been delivered on January 3, 1999; however, because that day was a Sunday, and the two preceding days a Saturday and a holiday, the checks were actually delivered on December 31, 1998. The annual benefit figures are shown as if those benefit checks were delivered on the usual date. Whenever this situation occurs, only the portion of benefits payable on January 3 would be delivered in December. The benefits payable later in January due to payment cycling, which began in June 1997, would still be paid in January.

a. OASI Trust Fund Operations

Estimates of the operations and status of the OASI Trust Fund during calendar years 1999-2008 are shown in table II.F1 based on each of the three alternative sets of assumptions. Actual operations for calendar year 1998 are also shown in the table.

The increases in estimated income shown in table II.F1 under each set of assumptions reflect increases in estimated taxable earnings and growth in interest earnings on the invested assets of the trust fund. For each alternative, employment and earnings are assumed to increase in every year through 2008 (with the exception that employment is estimated to decline temporarily during the economic recessions assumed under alternative III). The number of persons with taxable earnings would increase on the basis of alternatives I, II, and III from 148 million during calendar year 1998 to about 164 million, 161 million, and 158 million, respectively, in 2008. The total annual amount of taxable earnings is projected to increase from $3,512 billion in 1998 to $5,531 billion, $5,427 billion, and $5,775 billion, in 2008, on the basis of alternatives I, II, and III, respectively. (In 1998 dollars—taking account of assumed increases in the CPI from 1998 to 2008 under each alternative—the estimated amounts of taxable earnings in 2008 are $4,466 billion, $4,131 billion, and $3,789 billion, respectively.) These increases in taxable earnings are due primarily to (1) projected increases in employment levels and average earnings in covered employment, (2) increases in the contribution and benefit base in 1999-2008 under the automatic adjustment provisions, and (3) various provisions enacted in 1983 and later, including extensions of coverage to additional categories of workers.

Growth in interest earnings represents a significant component of the overall increase in trust fund income during this period. Although interest rates payable on trust fund investments are not assumed to change substantially from current levels, the continuing rapid increase in OASI assets will result in a corresponding increase in interest income. By 2008, interest income to the OASI Trust Fund is projected to be about 17 percent of total trust fund income (for all three alternatives), as compared to 10.5 percent in 1998.

Table II.F1.—Estimated Operations of the OASI Trust Fund by Alternative, Calendar Years 1998-2008

[Amounts in billions]

Calendar year	Income	Expenditures	Net increase in fund	Fund at end of year	Trust fund	
					Amount [1]	Ratio [2]
1998 [3]	$424.8	$332.3	$92.5	$681.6	$589.1	177
Intermediate:						
1999	450.0	341.2	108.8	790.5	681.6	200
2000	463.2	352.4	110.8	901.3	790.5	224
2001	485.7	366.3	119.5	1,020.7	901.3	246
2002	509.1	382.4	126.7	1,147.4	1,020.7	267
2003	534.9	399.5	135.4	1,282.8	1,147.4	287
2004	563.1	418.5	144.6	1,427.5	1,282.8	307
2005	595.8	439.7	156.1	1,583.6	1,427.5	325
2006	629.9	463.1	166.8	1,750.4	1,583.6	342
2007	668.0	488.3	179.7	1,930.1	1,750.4	358
2008	707.1	516.0	191.1	2,121.2	1,930.1	374
Low Cost:						
1999	452.0	340.8	111.2	792.8	681.6	200
2000	469.9	351.3	118.6	911.5	792.8	226
2001	495.5	363.8	131.6	1,043.1	911.5	251
2002	521.4	377.5	143.9	1,187.1	1,043.1	276
2003	549.0	392.2	156.8	1,343.8	1,187.1	303
2004	578.8	408.5	170.3	1,514.1	1,343.8	329
2005	611.9	426.0	186.0	1,700.1	1,514.1	355
2006	646.0	444.4	201.6	1,901.7	1,700.1	383
2007	684.1	464.3	219.8	2,121.4	1,901.7	410
2008	722.9	486.3	236.6	2,358.0	2,121.4	436
High Cost:						
1999	450.5	341.6	109.0	790.6	681.6	200
2000	460.5	356.0	104.5	895.1	790.6	222
2001	494.9	376.1	118.7	1,013.9	895.1	238
2002	534.5	405.2	129.3	1,143.2	1,013.9	250
2003	552.8	437.4	115.4	1,258.6	1,143.2	261
2004	591.5	462.8	128.7	1,387.2	1,258.6	272
2005	633.4	491.7	141.7	1,528.9	1,387.2	282
2006	672.9	523.5	149.5	1,678.4	1,528.9	292
2007	715.1	557.3	157.8	1,836.2	1,678.4	301
2008	757.6	594.7	162.9	1,999.1	1,836.2	309

[1] Represents assets at beginning of year.

[2] Represents amounts shown in preceding column as a percentage of expenditures during the year. See text concerning interpretation of these ratios.

[3] Figures for 1998 represent actual experience.

Note: Totals do not necessarily equal the sums of rounded components.

Rising expenditures during 1999-2008 reflect automatic benefit increases as well as the upward trend in the numbers of beneficiaries and in the average monthly earnings underlying benefits payable by the program. The growth in the number of beneficiaries in the past and the expected growth in the future result both from the increase in the aged population and from the increase in the proportion of the population which is eligible for benefits. The latter increase is primarily due to various amendments enacted after 1950 which modified eligibility provisions and extended coverage to additional categories of employment.

Growth has also occurred, and will continue to occur, in the proportion of eligible persons who, in fact, receive benefits. This growth is due to several factors, among which are (1) the amendments enacted since 1950 which affect the conditions governing the receipt of benefits and (2) the increasing percentage of eligible persons who are aged 70 and over and who therefore may receive benefits regardless of earnings.

The estimates shown in table II.F1 indicate that income to the OASI Trust Fund would substantially exceed expenditures in every year of the short-range projection period, under each of the three sets of assumptions used in this report. The assets of the OASI Trust Fund at the beginning of 1998 were equal to 177 percent of the fund's expenditures in 1998. As described in the introduction to this section, this ratio is known as the "trust fund ratio;" it provides a useful measure of the relative level of trust fund assets. During 1998, income exceeded disbursements by $92.5 billion. As a result, the trust fund ratio increased to about 200 percent at the beginning of 1999.

Assets are estimated to increase substantially in each year of the short-range projection period, based on each of the three alternative sets of assumptions. The increase in the trust fund ratio from 200 percent at the beginning of 1999 to the range of 309-436 percent at the beginning of 2008 is due, in part, to the increases in the OASI tax rate that became effective in 1988 and 1990 (even though much of the increase was reallocated to the DI Trust Fund in 1994). Asset growth is also assisted by growth in taxable earnings that is projected to exceed the growth in benefit payments throughout the short-range projection period (except for certain years under alternative III).

As noted in section II.B, the portion of the OASI Trust Fund that is not needed to meet day-to-day expenditures is used to purchase investments, generally in special public-debt obligations of the U.S. Government. The cash used to make these purchases becomes part of the general fund of the Treasury and is used to meet various Federal outlays. Interest is paid to the trust fund on these securities and, when the securities mature or are redeemed prior to maturity, general fund revenues are used to repay the principal to the trust fund. Thus, the investment operations of the trust fund result in various cash flows between the trust fund and the general fund of the Treasury.

Currently, the excess of tax income to the OASI Trust Fund over the fund's expenditures results in a substantial net cash flow from the trust fund to the general fund. Sometime after the turn of the century, as shown in the following subsection, this cash flow will reverse; as

trust fund securities are redeemed to meet benefit payments and other expenditures, revenue from the general fund of the Treasury will be drawn upon to provide the necessary cash. The accumulation and subsequent redemption of substantial trust fund assets has important public policy and economic implications that extend well beyond the operation of the OASDI program itself. Discussion of these broader issues is not within the scope of this report.

Based on the intermediate (alternative II) assumptions, the assets of the OASI Trust Fund would continue to exceed 100 percent of annual expenditures by a steadily increasing amount through the end of 2008. Consequently, the OASI Trust Fund satisfies the test of short-range financial adequacy by a wide margin. The estimates in table II.F1 also indicate that the short-range test would be satisfied even under the high cost assumptions.

In interpreting the trust fund ratios in table II.F1, it should be noted that at the beginning of any month there must be sufficient assets on hand to meet the benefit payments that are payable at the beginning of that month. The specific minimum amount of assets required for this purpose depends on a number of factors and varies somewhat from month to month. Currently, assets of roughly 8 to 9 percent of annual expenditures are sufficient for this purpose, although this minimum requirement will decline very gradually in the future as payment cycling is phased in. If the assets of either the OASI or DI Trust Fund at the end of a month fall below the minimum amount needed to meet the benefits payable at the beginning of the next month, section 201(a) of the Social Security Act provides for an advance transfer to the trust fund of all the taxes that are expected to be received by the fund in the next month. Thus, the difference between (1) the sum of the estimated trust fund ratios shown in table II.F1 and the advance tax transfers for January expressed as a percentage of total expenditures in the year and (2) the minimum level required to pay benefits on time, represents the reserve available to handle adverse contingencies.

b. DI Trust Fund Operations

The estimated operations and financial status of the DI Trust Fund during calendar years 1999-2008 under the three sets of assumptions are shown in table II.F2, together with figures on actual experience in 1998. Income is generally projected to increase steadily under each alternative, reflecting most of the same factors described previously in

connection with the OASI Trust Fund. Interest income was 7.5 percent of overall income to the DI Trust Fund in 1998; it is projected to increase to roughly 11 percent of annual trust fund income by 2008 on the basis of the intermediate assumptions.

Expenditures are estimated to increase because of automatic benefit increases and projected increases in the amounts of average monthly earnings on which benefits are based. In addition, under all three sets of assumptions, the number of DI beneficiaries in current-payment status is projected to continue increasing throughout the short-range projection period, at somewhat higher levels than anticipated in last year's report. The projected annual average growth rate in the number of DI worker beneficiaries is roughly 4.6 percent over the period 1998-2008. Growth is attributable to several factors, including (1) a gradually increasing trend in the estimated number of individuals insured for disability benefits, and (2) program dynamics which result in a greater number of insured workers awarded benefits than disabled workers whose benefits terminate as a result of death, recovery, or conversion to old-age benefit payments.

The proportion of insured workers who apply for and are awarded disability benefits in a given year is referred to as the "disability incidence rate." This rate has fluctuated substantially in past years and the causes for the variation have not been precisely determined. Incidence rates increased during 1970-75, declined during 1976-82, increased again during 1983-85, and remained steady in 1986-89. During 1990-92 the incidence rate resumed increasing, with unusually rapid increases (on a relative basis) of 8, 12, and 17 percent in those 3 years. In 1993-97, the observed incidence rate declined from the 1992 level, before increasing slightly in 1998.

The rapid increases in disability benefit applications and awards during 1990-92 appear to be attributable, in part, to the rise in unemployment associated with the 1990-91 economic recession (although the evidence is not conclusive). Other explanatory factors may include changes to the conditions governing receipt of disability benefits, as introduced through recent legislation, regulations, and court decisions, and increased awareness of the DI program by the public.

These and other factors were discussed at some length in a report issued December 1992, titled "The Social Security Disability Insurance Program: An Analysis" prepared by the Department of Health and Human Services at the request of the Board of Trustees. Subsequent to that report, the Social Security Administration, together

with the Office of the Assistant Secretary for Planning and Evaluation in the Department of Health and Human Services, commissioned a series of studies attempting to quantify some of the reasons for the rapid growth in the DI program in the early 1990s. Reference should be made to these studies for further details on the possible factors contributing to the increases in disability incidence rates observed in the period 1990-92, and the subsequent changes observed since 1992.

Due to the substantial variation exhibited by incidence rates in the past and the difficulty in determining reliable explanatory factors for this variation, any projection of future incidence rates necessarily will be uncertain. The 1998 disability incidence rate (calculated on an age-sex-adjusted basis) was 4.74 awards per 1,000 insured workers. This figure was about 6 percent lower than the average incidence rate of 5.04 per thousand that was experienced during the period 1970-98. Under the intermediate assumptions, incidence rates are assumed to decrease by 1 percent in 1999 and then to increase gradually for the remainder of the short-range projection period, to only slightly above the average level experienced over that 29-year historical period. Under the low cost alternative, incidence rates decline by about 9 percent during 1999-2008, staying under the 1970-98 average over the next 10 years. The high cost alternative assumes that incidence rates increase by 23 percent over the next 10 years.

The proportion of DI beneficiaries whose benefits terminate in a given year has also fluctuated significantly in the past. Over the last 20 years, the rates of benefit termination due to death or conversion to retirement benefits (at attainment of normal retirement age) have declined very gradually. This trend is attributable, in part, to the lower average age of new beneficiaries. However, some recent program changes and health trends have also led to improved mortality experience among the DI disabled workers. These changes include legislation to eliminate drug addicts and alcoholics from the DI rolls; the rapidly diminishing impact of AIDS on DI; continued increases in mental-impairment disabilities; and a rising number of awards to older workers, which are based on vocational factors. The termination rate due to recovery has been much more volatile. Currently, the proportion of disabled beneficiaries whose benefits cease because of their recovery from disability is very low in comparison to levels experienced throughout the 1970s and early 1980s.

Table II.F2.—Estimated Operations of the DI Trust Fund by Alternative, Calendar Years 1998-2008

[Amounts in billions]

Calendar year	Income	Expenditures	Net increase in fund	Fund at end of year	Trust fund	
					Amount [1]	Ratio [2]
1998 [3]	$64.4	$49.9	$14.4	$80.8	$66.4	133
Intermediate:						
1999	68.3	52.8	15.5	96.3	80.8	153
2000	74.9	56.7	18.2	114.6	96.3	170
2001	78.8	60.8	18.0	132.6	114.6	188
2002	82.6	65.7	16.9	149.5	132.6	202
2003	86.8	71.2	15.5	165.0	149.5	210
2004	91.1	77.5	13.6	178.6	165.0	213
2005	95.9	84.4	11.5	190.0	178.6	212
2006	100.6	92.0	8.6	198.6	190.0	207
2007	105.7	100.2	5.5	204.1	198.6	198
2008	110.5	108.6	1.9	206.1	204.1	188
Low Cost:						
1999	68.7	52.1	16.6	97.4	80.8	155
2000	76.1	55.3	20.9	118.3	97.4	176
2001	80.6	58.6	22.0	140.3	118.3	202
2002	85.0	62.4	22.6	162.9	140.3	225
2003	89.6	66.6	23.0	185.9	162.9	244
2004	94.5	71.5	23.0	208.8	185.9	260
2005	99.7	76.7	23.0	231.8	208.8	272
2006	104.9	82.2	22.7	254.5	231.8	282
2007	110.6	88.1	22.5	276.9	254.5	289
2008	116.2	94.0	22.2	299.2	276.9	295
High Cost:						
1999	68.4	53.9	14.5	95.3	80.8	150
2000	74.1	59.5	14.6	109.9	95.3	160
2001	80.0	66.1	13.8	123.8	109.9	166
2002	86.0	74.7	11.3	135.1	123.8	166
2003	88.1	84.3	3.8	138.9	135.1	160
2004	93.3	93.3	([4])	138.9	138.9	149
2005	98.7	103.3	-4.6	134.3	138.9	134
2006	103.3	114.2	-10.9	123.4	134.3	118
2007	107.7	125.7	-18.0	105.4	123.4	98
2008	111.6	137.7	-26.1	79.2	105.4	77

[1] Represents assets at beginning of year.

[2] Represents amounts shown in preceding column as a percentage of expenditures during the year. See text concerning interpretation of these ratios.

[3] Figures for 1998 represent actual experience.

[4] Less than $50 million.

Note: Totals do not necessarily equal the sums of rounded components.

In this report, termination rates due to attainment of normal retirement age are estimated to continue their downward trend through 2002. This rate would drop in 2003 and remain at a depressed level for 5 more years as a result of the increase in the normal retirement age which begins in that year. Age-specific death rates for disabled beneficiaries are assumed to decline gradually from the current experience levels. Although actual recovery terminations for 1998 were slightly higher than expected, projected levels for this year's report remain consistent with last year's report. Although assumptions with regard to funding continuing disability reviews have not changed

since authorized under Public Law 104-121, the expected regulatory increase in the substantial gainful activity amount is expected to reduce annual recoveries slightly. The overall termination rate (reflecting all causes) is projected under all three alternatives to decline gradually during 1998-2002. The overall rate then declines in 2003 due largely to the increase in the normal retirement age cited above.

The continuing spread of Acquired Immunodeficiency Syndrome (AIDS) had contributed somewhat to increases in DI awards in the early 1990s; however, revised downward estimates of both historical and projected awards due to HIV impairments has been the trend over the last several reports. In addition, due to the higher mortality rates of affected individuals, the total number of disabled workers currently receiving benefits has not increased greatly as a result of AIDS, and has actually decreased in recent years. Although many aspects of the AIDS pandemic are well understood, there remains considerable uncertainty regarding future medical advances and future incidence of HIV infection. To reflect this uncertainty, the projected numbers of benefit awards to AIDS patients are varied by alternative. Under the intermediate assumptions, benefit awards to persons with AIDS are projected to continue recent declines through the remainder of the short-range period. Under the low cost assumptions, the number of new awards also declines throughout the projection period, but at a somewhat more rapid rate, while the number projected under the high cost assumptions increases slightly through 2002 before beginning to decline.

At the beginning of calendar year 1998, the assets of the DI Trust Fund represented 133 percent of annual expenditures. During 1998, DI income exceeded DI expenditures by $14.4 billion, with the result that the trust fund ratio for the beginning of 1999 increased to about 153 percent. Under the intermediate and low cost sets of assumptions, total income is estimated to exceed expenditures in each year of the short-range projection period. The increase in the trust fund ratio from 133 percent at the beginning of 1998 to 153 percent at the beginning of 1999, and the further increase to 213 percent at the beginning of 2004 on the basis of the intermediate assumptions, are largely due to the tax rate reallocation enacted in 1994. The decline in the trust fund ratio to 188 percent at the beginning of 2008 is an early warning of trouble for the DI Trust Fund soon after the short-range period.

Under the low cost assumptions, the trust fund ratio would increase rapidly to 295 percent at the beginning of 2008. Under the high cost assumptions, the assets of the DI Trust Fund would increase through 2003, decline steadily thereafter, and would be exhausted in 2011.

Because DI assets were greater than 1 year's expenditures at the beginning of 1999 and would remain above that level in 2000 and later under the intermediate assumptions, the DI Trust Fund satisfies the Trustees' short-range test of financial adequacy. However, as indicated above, under the high cost assumptions not only does DI fail to meet the short-range test of financial adequacy, but the DI Trust Fund is exhausted soon after the short-range projection period.

c. Combined OASI and DI Trust Fund Operations

The estimated operations and status of the OASI and DI Trust Funds, combined, during calendar years 1999-2008 on the basis of the three alternatives, are shown in table II.F3, together with figures on actual experience in 1998. These amounts are the sums of the corresponding figures shown in tables II.F1 and II.F2.

Table II.F3.—Estimated Operations of the OASI and DI Trust Funds, Combined, by Alternative, Calendar Years 1998-2008

[Amounts in billions]

Calendar year	Income	Expenditures	Net increase in funds	Funds at end of year	Trust fund	
					Amount [1]	Ratio [2]
1998 [3]	$489.2	$382.3	$106.9	$762.5	$655.5	171
Intermediate:						
1999	518.3	394.0	124.3	886.8	762.5	194
2000	538.1	409.1	129.0	1,015.8	886.8	217
2001	564.5	427.1	137.5	1,153.3	1,015.8	238
2002	591.7	448.2	143.6	1,296.9	1,153.3	257
2003	621.7	470.7	150.9	1,447.8	1,296.9	276
2004	654.2	496.0	158.2	1,606.0	1,447.8	292
2005	691.7	524.1	167.6	1,773.6	1,606.0	306
2006	730.5	555.1	175.4	1,949.0	1,773.6	320
2007	773.6	588.4	185.2	2,134.2	1,949.0	331
2008	817.6	624.6	193.0	2,327.2	2,134.2	342
Low Cost:						
1999	520.6	392.9	127.8	890.2	762.5	194
2000	546.0	406.5	139.5	1,029.7	890.2	219
2001	576.0	422.4	153.6	1,183.4	1,029.7	244
2002	606.4	439.8	166.6	1,350.0	1,183.4	269
2003	638.6	458.9	179.7	1,529.7	1,350.0	294
2004	673.2	480.0	193.2	1,722.9	1,529.7	319
2005	711.6	502.7	208.9	1,931.8	1,722.9	343
2006	751.0	526.7	224.3	2,156.1	1,931.8	367
2007	794.7	552.5	242.2	2,398.4	2,156.1	390
2008	839.1	580.3	258.9	2,657.2	2,398.4	413
High Cost:						
1999	518.9	395.5	123.5	885.9	762.5	193
2000	534.6	415.5	119.1	1,005.1	885.9	213
2001	574.8	442.3	132.6	1,137.6	1,005.1	227
2002	620.5	479.9	140.6	1,278.3	1,137.6	237
2003	640.9	521.7	119.2	1,397.5	1,278.3	245
2004	684.8	556.1	128.7	1,526.1	1,397.5	251
2005	732.2	595.0	137.1	1,663.3	1,526.1	256
2006	776.2	637.7	138.5	1,801.8	1,663.3	261
2007	822.7	683.0	139.7	1,941.5	1,801.8	264
2008	869.2	732.4	136.8	2,078.3	1,941.5	265

[1] Represents assets at beginning of year.

[2] Represents amounts shown in preceding column as a percentage of expenditures during the year. See text concerning interpretation of these ratios.

[3] Figures for 1998 represent actual experience.

Note: Totals do not necessarily equal the sums of rounded components.

At the beginning of 1998, the trust fund ratio for the OASI and DI Trust Funds combined was 171 percent, as shown in table II.F3. During 1998, total income to the two trust funds was $106.9 billion higher than total expenditures. As a result of this increase, combined OASDI assets at the beginning of 1999 represented about 194 percent of estimated combined expenditures for the year. Based on the intermediate assumptions, the trust fund ratio for the combined funds is projected to increase substantially, to 342 percent by 2008. The ratio would grow at an even faster rate under the low cost assumptions, reaching 413 percent at the beginning of 2008. Under the high cost assump-

tions, assets would grow more slowly, reaching 265 percent at the beginning of 2008.

Under the intermediate assumptions, the total assets of the OASI and DI Trust Funds would remain above 100 percent of annual OASDI expenditures throughout the short-range projection period. Therefore, the combined trust funds meet the requirements of the short-range test of financial adequacy. Under the high cost assumptions, the fund ratio for OASI and DI combined would still remain above 100 percent through 2008 (although, as indicated in the section on long-range projections, the ratio would fall below this level shortly thereafter). Thus, even under adverse conditions the combined funds would satisfy the short-range test of financial adequacy, although by a narrower margin.

Section 215(i) of the Social Security Act includes a provision to stabilize automatic benefit increases in the event of high inflation at a time when the combined assets of the OASI and DI Trust Funds are at very low levels (see section II.E of this report). Under all three alternatives, the level of OASDI assets during 1999-2008 would substantially exceed the applicable threshold. Thus, the stabilizer provision would not be triggered during the short-range projection period under any of the sets of assumptions used in this report.

Figure II.F1 presents the estimated total assets of the OASI and DI Trust Funds at the end of each year 1999-2008, based on the three sets of assumptions (together with actual assets at the end of each year 1988-98). Figure II.F2 illustrates the pattern of actual past and estimated future OASDI trust fund ratios under the three alternatives. Trust fund ratios for selected years prior to 1999, and estimates for 1999-2008 under the three alternatives, are shown in table II.F4 for OASI, DI, and both funds combined. In evaluating the ratios shown in figure II.F2 and table II.F4, it should be recalled that a minimum of roughly 8 to 9 percent is currently needed to meet monthly cash-flow requirements. The shaded area in figure II.F2 depicts this requirement.

Figure II.F1.—Estimated Assets at End of Year, for OASI and DI Trust Funds Combined, by Alternative, Calendar Years 1988-2008
[In billions]

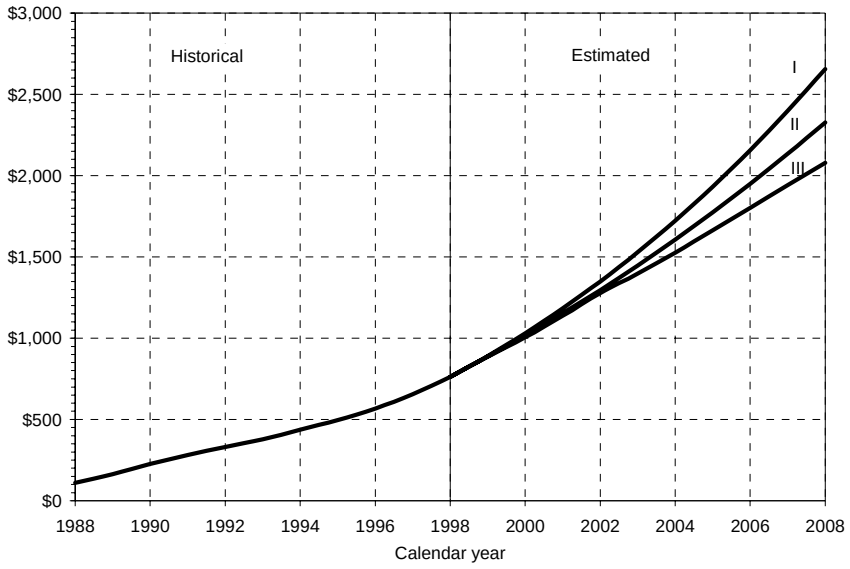


Figure II.F2.—Estimated Trust Fund Ratios, for OASI and DI Trust Funds Combined, by Alternative, Calendar Years 1988-2008
[Assets as a percentage of annual expenditures]

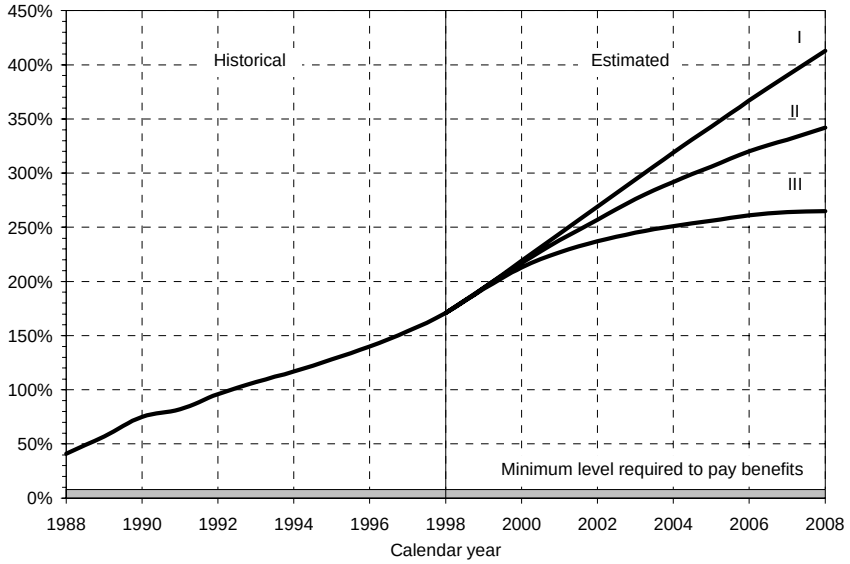


Table II.F4.—Trust Fund Ratios [1] by Trust Fund, Selected Calendar Years 1950-98, and Estimated Future Ratios by Alternative, Calendar Years 1999-2008
[In percent]

Calendar year	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Historical data:			
1950	1,156	—	1,156
1955	405	—	405
1960	180	304	186
1965	109	121	110
1970	101	126	103
1975	63	92	66
1980	23	35	25
1985	24	27	24
1990	79	40	75
1991	87	39	82
1992	103	40	96
1993	117	35	107
1994	130	23	117
1995	139	55	128
1996	149	83	140
1997	160	113	154
1998	177	133	171
Intermediate:			
1999	200	153	194
2000	224	170	217
2001	246	188	238
2002	267	202	257
2003	287	210	276
2004	307	213	292
2005	325	212	306
2006	342	207	320
2007	358	198	331
2008	374	188	342

Table II.F4.—Trust Fund Ratios [1] by Trust Fund, Selected Calendar Years 1950-98, and Estimated Future Ratios by Alternative, Calendar Years 1999-2008 (Cont.)
[In percent]

Calendar year	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Low Cost:			
1999	200	155	194
2000	226	176	219
2001	251	202	244
2002	276	225	269
2003	303	244	294
2004	329	260	319
2005	355	272	343
2006	383	282	367
2007	410	289	390
2008	436	295	413
High Cost:			
1999	200	150	193
2000	222	160	213
2001	238	166	227
2002	250	166	237
2003	261	160	245
2004	272	149	251
2005	282	134	256
2006	292	118	261
2007	301	98	264
2008	309	77	265

[1] Represents assets at beginning of year as a percentage of expenditures during the year. For 1985 and 1990, assets at beginning of year for each trust fund and the combined funds include the respective OASI and DI advance tax transfers for January.

The factors underlying the changes in the intermediate estimates for the OASI Trust Fund from last year's annual report to this report are analyzed in table II.F5. In the 1998 Annual Report, the trust fund ratio for OASI was estimated to reach 323 percent at the beginning of 2007—the tenth projection year from that report. The corresponding ratio shown in this report for the tenth projection year (2008) is 374 percent. If there had been no changes to the projections, then the estimated ratio at the beginning of 2008 would have been 12 percentage points higher than at the beginning of 2007. There were changes, however, to reflect the latest actual data, as well as adjustments to the assumptions for future years. The cumulative net effects of changes in economic assumptions (including re-estimates of future tax revenue consistent with recent revisions to historical data) resulted in an increase in the trust fund ratio of 35 percentage points by the beginning of 2008. In addition, the tenth year trust fund ratio showed a small net change due to the effects of revised population projections, as well as revised assumptions regarding future average benefit levels and projected numbers of old-age and survivor beneficiaries.

Corresponding estimates of the factors underlying the changes in the financial projections for the DI Trust Fund, and for the OASI and DI

Trust Funds combined, are also shown in table II.F5. As was the case for OASI, the key factor affecting the new estimates for the DI Trust Fund was the cumulative effect of changes in assumptions related to economic performance. The one other significant factor affecting DI in this year's report is the impact of mortality improvement trends among the disabled as discussed above.

Table II.F5.—Change in OASI and DI Trust Fund Ratios at the Beginning of the Tenth Year of Projection, Based on the Intermediate Assumptions, by Reason for Change

[In percent]

Item	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Trust fund ratio shown in last year's report for calendar year 2007	323	187	301
Change in trust fund ratio due to changes in:			
Valuation period	12	-9	8
Demographic assumptions	2	(1)	1
Economic assumptions	35	23	32
Programmatic assumptions	2	-13	(1)
Total change in trust fund ratio	51	1	41
Trust fund ratio shown in this report for calendar year 2008	374	188	342

[1] Between -0.5 and 0.5 percent.

Note: Totals do not necessarily equal the sums of rounded components.

Table II.F6 shows that total expenditures in calendar year 1998 from the OASI and DI Trust Funds decreased to 10.92 percent of taxable payroll for the year—1.76 percentage points less than the income rate of 12.68 percent. This decrease in the total cost rate for OASDI is primarily attributable to the growth of the OASDI taxable payroll, as described previously. Under the intermediate assumptions, the OASDI cost rate would decline for a few years before increasing gradually during the remainder of the short-range projection period, to 11.55 percent in 2008. Based on the low cost assumptions, the cost rate is estimated to decline steadily before increasing slightly at the end of the short-range projection period, reaching 10.52 percent in 2008. The high cost alternative indicates a significant increase, to 12.72 percent in 2008.

These cost rate projections are shown in table II.F6 for both trust funds, separately and combined. Table II.F6 also shows a comparison of the cost rates with the corresponding income rates. As explained previously, the income rate represents the sum of the combined employee-employer payroll tax rate and the income derived from the Federal income taxation of OASDI benefits, expressed as a percentage of taxable payroll. The difference between the income rate and the cost rate for a year is referred to as the "balance" for that year.

Table II.F6.—Comparison of Income Rates and Cost Rates, by Trust Fund, Selected Calendar Years 1950-98, and Estimated Rates by Alternative, Calendar years 1999-2008

[As a percentage of taxable payroll]

Calendar year	OASI Trust Fund			DI Trust Fund			OASI and DI, combined		
	Income rate [1]	Cost rate	Balance	Income rate [1]	Cost rate	Balance	Income rate [1]	Cost rate	Balance
Historical data:									
1950	3.00	1.17	1.83	—	—	—	3.00	1.17	1.83
1955	4.00	3.34	.66	—	—	—	4.00	3.34	.66
1960	5.50	5.59	-.09	0.50	0.30	0.20	6.00	5.89	.11
1965	6.75	7.23	-.48	.50	.70	-.20	7.25	7.93	-.68
1970	7.30	7.31	-.01	1.10	.81	.29	8.40	8.12	.28
1975	8.75	9.29	-.54	1.15	1.36	-.21	9.90	10.64	-.74
1980	9.04	9.33	-.29	1.12	1.38	-.26	10.16	10.71	-.55
1985	10.71	9.92	.79	1.07	1.13	-.06	11.79	11.05	.73
1990	11.32	9.66	1.66	1.17	1.09	.09	12.49	10.74	1.75
1991	11.44	10.15	1.29	1.21	1.18	.03	12.65	11.33	1.32
1992	11.43	10.27	1.16	1.21	1.27	-.06	12.64	11.54	1.10
1993	11.40	10.37	1.03	1.21	1.35	-.14	12.61	11.73	.88
1994	10.70	10.22	.48	1.89	1.40	.49	12.59	11.62	.97
1995	10.70	10.22	.48	1.88	1.44	.44	12.59	11.66	.93
1996	10.73	10.05	.68	1.89	1.48	.41	12.62	11.53	1.10
1997	10.93	9.81	1.11	1.71	1.43	.28	12.64	11.25	1.39
1998	10.96	9.49	1.47	1.72	1.43	.29	12.68	10.92	1.76
Intermediate:									
1999	10.98	9.35	1.63	1.72	1.45	.27	12.70	10.80	1.90
2000	10.83	9.30	1.54	1.82	1.49	.32	12.65	10.79	1.86
2001	10.86	9.29	1.57	1.82	1.54	.28	12.67	10.83	1.85
2002	10.86	9.31	1.55	1.82	1.60	.22	12.68	10.91	1.76
2003	10.86	9.33	1.54	1.82	1.66	.16	12.68	10.99	1.69
2004	10.87	9.35	1.52	1.82	1.73	.09	12.69	11.08	1.61
2005	10.88	9.38	1.50	1.82	1.80	.02	12.70	11.18	1.52
2006	10.88	9.42	1.47	1.82	1.87	-.05	12.71	11.29	1.42
2007	10.89	9.47	1.42	1.82	1.94	-.12	12.71	11.41	1.31
2008	10.90	9.54	1.36	1.83	2.01	-.18	12.73	11.55	1.18
Low Cost:									
1999	10.98	9.26	1.72	1.72	1.41	.30	12.70	10.67	2.03
2000	10.82	9.11	1.71	1.82	1.43	.38	12.63	10.54	2.10
2001	10.85	9.02	1.83	1.82	1.45	.36	12.67	10.48	2.19
2002	10.85	8.95	1.90	1.82	1.48	.34	12.67	10.43	2.23
2003	10.85	8.91	1.95	1.82	1.51	.30	12.67	10.42	2.25
2004	10.86	8.87	1.99	1.82	1.55	.27	12.67	10.42	2.25
2005	10.86	8.84	2.02	1.82	1.59	.23	12.68	10.43	2.25
2006	10.87	8.81	2.05	1.82	1.63	.19	12.68	10.45	2.24
2007	10.87	8.80	2.07	1.82	1.67	.15	12.69	10.47	2.22
2008	10.88	8.82	2.06	1.82	1.70	.12	12.70	10.52	2.18
High Cost:									
1999	10.98	9.35	1.63	1.72	1.47	.24	12.70	10.82	1.88
2000	10.87	9.50	1.36	1.82	1.59	.23	12.68	11.09	1.59
2001	10.86	9.39	1.47	1.82	1.65	.17	12.68	11.05	1.63
2002	10.86	9.49	1.37	1.82	1.75	.07	12.68	11.24	1.44
2003	10.89	10.08	.81	1.82	1.94	-.12	12.71	12.02	.68
2004	10.89	10.02	.87	1.82	2.02	-.20	12.71	12.04	.67
2005	10.89	10.02	.87	1.82	2.11	-.28	12.72	12.13	.59
2006	10.90	10.09	.81	1.83	2.20	-.37	12.73	12.29	.44
2007	10.91	10.20	.72	1.83	2.30	-.47	12.74	12.50	.25
2008	10.93	10.33	.60	1.83	2.39	-.56	12.76	12.72	.04

[1] Income rates for 1985, 1990, 1995, and 2000 are modified to include adjustments to the lump-sum payments received in 1983 from the general fund of the Treasury for the cost of noncontributory wage credits for military service in 1940-56.

Notes:
1. Historical taxable payroll data are subject to revision.
2. The income rate excludes interest income and certain transfers from the general fund of the Treasury.
3. Totals do not necessarily equal the sums of rounded components.

Estimates of the operations of the trust funds during calendar years 1999-2008 have been presented in the preceding tables on the basis of three different sets of economic assumptions, because of the uncertainty of future economic and demographic developments. Under the provisions of the Social Security Act, estimates of the expected operations and status of the trust funds during the next 5 *fiscal* years are required to be shown in this report. Accordingly, detailed estimates of the expected operations and status of the trust funds during fiscal years 1999-2003 are shown in the remaining tables of this section for the intermediate assumptions (alternative II) only. Similar detailed estimates are also shown for 5 additional fiscal years (2004-08) and on a calendar-year basis for 1999-2008.

Data on the actual operations of the OASI Trust Fund for selected years during 1940-98, and estimates of the expected operations of the trust fund during 1999-2008 on the basis of the intermediate assumptions, are shown in tables II.F7 and II.F8 on a fiscal- and calendar-year basis, respectively. Corresponding figures on the operations of the DI Trust Fund are shown in tables II.F9 and II.F10. Operations of both trust funds combined are shown in tables II.F11 and II.F12. (Data relating to the operations of the two trust funds for years not shown in tables II.F7-II.F12 are contained in past annual reports.) The figures shown in tables II.F8, II.F10, and II.F12 for 1987, 1988, 1992, 1993, 1998, and 1999 are adjusted to reflect 12 months of benefit payments in each year.

Table II.F7.—Operations of the OASI Trust Fund During Selected Fiscal Years 1940-98 and Estimated Future Operations During Fiscal Years 1999-2008, on the Basis of the Intermediate Set of Assumptions

[In millions]

Fiscal year [1]	Income				
	Total	Net contributions [2]	Income from taxation of benefits	Payments from the general fund of the Treasury [3]	Net interest [4]
Historical data:					
1940	$592	$550	—	—	$42
1945	1,434	1,310	—	—	124
1950	2,367	2,106	—	$4	257
1955	5,525	5,087	—	—	438
1960	10,360	9,843	—	—	517
1965	16,443	15,857	—	—	586
1970	31,746	29,955	—	442	1,350
1975	58,757	56,017	—	447	2,292
1980	100,051	97,608	—	557	1,886
1985	179,881	175,305	$3,151	105	1,321
1986	195,331	187,007	3,329	2,293	2,701
1987	206,846	199,554	3,323	69	3,900
1988	235,720	226,409	3,335	55	5,922
1989	260,457	247,116	3,638	43	9,660
1990	278,607	261,506	2,924	34	14,143
1991	293,288	270,841	5,790	-2,089	18,746
1992	307,102	278,506	6,019	19	22,557
1993	319,298	287,569	5,893	14	25,822
1994	342,263	308,397	5,351	10	28,505
1995	326,067	289,529	5,114	7	31,417
1996	356,843	317,157	5,785	-124	34,026
1997	386,465	342,312	6,462	3	37,689
1998	415,666	364,871	8,595	2	42,198
Estimates:					
1999	446,152	388,420	11,091	1	46,640
2000	459,974	399,868	9,629	([5])	50,477
2001	478,434	414,195	10,027	-827	55,039
2002	502,099	431,068	10,535	([5])	60,496
2003	526,552	448,600	11,136	([5])	66,816
2004	552,909	467,289	11,859	([5])	73,761
2005	588,501	493,950	12,700	([5])	81,852
2006	619,410	514,777	13,671	([5])	90,961
2007	656,403	540,610	14,736	([5])	101,057
2008	694,192	565,933	15,926	([5])	112,333

[1] Under the Congressional Budget Act of 1974 (Public Law 93-344), fiscal years 1977 and later consist of the 12 months ending on September 30 of each year. Fiscal years prior to 1977 consisted of the 12 months ending on June 30 of each year.

[2] Beginning in 1983, includes transfers from general fund of Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 and later, if such credits were considered to be covered wages.

[3] Includes payments (1) in 1947-52 and in 1967 and later, for costs of noncontributory wage credits for military service performed before 1957; (2) in 1972-83, for costs of deemed wage credits for military service performed after 1956; and (3) in 1969 and later, for costs of benefits to certain uninsured persons who attained age 72 before 1968.

[4] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust fund on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in October 1973, the figures shown include relatively small amounts of gifts to the fund. Net interest for 1983-86 reflects payments from a borrowing trust fund to a lending trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-91, interest paid from the trust fund to the general fund on advance tax transfers is reflected. The amounts shown for 1985 and 1986 include interest adjustments of $76.5 million and $11.5 million, respectively, on unnegotiated checks issued before April 1985.

[5] Less than $500,000.

Table II.F7.—Operations of the OASI Trust Fund During Selected Fiscal Years 1940-98 and Estimated Future Operations During Fiscal Years 1999-2008, on the Basis of the Intermediate Set of Assumptions (Cont.)

[In millions]

Fiscal year	Expenditures				Assets	
	Total	Benefit payments [1]	Administrative expenses	Transfers to Railroad Retirement program	Net increase during year	Amount at end of period
Historical data:						
1940	$28	$16	$12	—	$564	$1,745
1945	267	240	27	—	1,167	6,613
1950	784	727	57	—	1,583	12,893
1955	4,427	4,333	103	-$10	1,098	21,141
1960	11,073	10,270	202	600	-713	20,829
1965	15,962	15,226	300	436	482	20,180
1970	27,321	26,268	474	579	4,425	32,616
1975	56,676	54,847	848	982	2,081	39,948
1980	103,228	100,626	1,160	1,442	-3,177	24,566
1985	169,210	165,310	1,589	2,310	[2] 6,308	33,877
1986	178,534	174,340	1,609	2,585	[2] 3,642	37,519
1987	186,101	182,003	1,541	2,557	20,745	58,265
1988	197,021	192,502	1,729	2,790	38,700	96,964
1989	209,102	204,600	1,657	2,845	51,355	148,319
1990	223,481	218,948	1,564	2,969	55,126	203,445
1991	241,316	236,195	1,746	3,375	51,972	255,417
1992	256,239	251,268	1,823	3,148	50,862	306,280
1993	269,934	264,561	2,021	3,353	49,364	355,644
1994	281,572	276,278	1,874	3,420	60,691	416,335
1995	294,456	288,607	1,797	4,052	31,611	447,946
1996	305,311	299,968	1,788	3,554	51,533	499,479
1997	318,548	312,862	1,998	3,688	67,916	567,395
1998	329,953	324,256	2,034	3,662	85,713	653,108
Estimates:						
1999	338,906	333,135	2,166	3,606	107,245	760,353
2000	349,433	343,934	2,018	3,481	110,541	870,894
2001	362,655	357,263	1,987	3,406	115,779	986,673
2002	378,376	372,819	2,073	3,484	123,723	1,110,396
2003	395,159	389,561	2,121	3,477	131,393	1,241,789
2004	413,658	408,025	2,158	3,475	139,251	1,381,040
2005	434,357	428,670	2,191	3,495	154,145	1,535,185
2006	457,178	451,518	2,222	3,437	162,232	1,697,417
2007	481,908	476,080	2,254	3,575	174,494	1,871,911
2008	508,839	502,928	2,286	3,624	185,353	2,057,264

[1] Beginning in 1967, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for unnegotiated benefit checks.

[2] Reflects offset for repayment from the OASI Trust Fund of amounts borrowed from the DI and HI Trust Funds in 1982. The amount repaid in 1985 was $4,364 million; in 1986, the amount was $13,155 million.

Note: Totals do not necessarily equal the sums of rounded components.

Table II.F8.—Operations of the OASI Trust Fund During Selected Calendar Years 1940-98 and Estimated Future Operations During Calendar Years 1999-2008, on the Basis of the Intermediate Set of Assumptions

[In millions]

Calendar year	Income				
	Total	Net contributions [1]	Income from taxation of benefits	Payments from the general fund of the Treasury [2]	Net interest [3]
Historical data:					
1940	$368	$325	—	—	$43
1945	1,420	1,285	—	—	134
1950	2,928	2,667	—	$4	257
1955	6,167	5,713	—	—	454
1960	11,382	10,866	—	—	516
1965	16,610	16,017	—	—	593
1970	32,220	30,256	—	449	1,515
1975	59,605	56,619	—	622	2,364
1980	105,841	103,355	—	641	1,845
1985	184,239	176,958	$3,208	2,203	1,871
1986	197,393	190,741	3,424	160	3,069
1987	210,736	202,735	3,257	55	4,690
1988	240,770	229,775	3,384	43	7,568
1989	264,653	250,195	2,439	34	11,985
1990	286,653	267,530	4,848	-2,089	16,363
1991	299,286	272,574	5,864	19	20,829
1992	311,162	280,992	5,852	14	24,303
1993	323,277	290,905	5,335	10	27,027
1994	328,271	293,323	4,995	7	29,946
1995	342,801	304,620	5,490	-129	32,820
1996	363,741	321,557	6,471	7	35,706
1997	397,169	349,946	7,426	2	39,795
1998	424,848	371,207	9,149	1	44,491
Estimates:					
1999	449,995	391,154	10,314	(4)	48,527
2000	463,239	401,675	9,716	-827	52,674
2001	485,735	417,918	10,135	(4)	57,683
2002	509,102	434,865	10,669	(4)	63,567
2003	534,889	453,382	11,293	(4)	70,213
2004	563,141	473,407	12,051	(4)	77,683
2005	595,847	496,625	12,919	(4)	86,303
2006	629,895	520,059	13,926	(4)	95,911
2007	667,965	546,344	15,011	(4)	106,610
2008	707,062	572,473	16,242	(4)	118,347

[1] Beginning in 1983, includes transfers from general fund of Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 and later, if such credits were considered to be covered wages.

[2] Includes payments (1) in 1947-51 and in 1966 and later, for costs of noncontributory wage credits for military service performed before 1957; (2) in 1971-82, for costs of deemed wage credits for military service performed after 1956; and (3) in 1968 and later, for costs of benefits to certain uninsured persons who attained age 72 before 1968.

[3] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust fund on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in October 1973, the figures shown include relatively small amounts of gifts to the fund. Net interest for 1983-86 reflects payments from a borrowing trust fund to a lending trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-90, interest paid from the trust fund to the general fund on advance tax transfers is reflected. The amount shown for 1985 includes an interest adjustment of $88 million on unnegotiated checks issued before April 1985.

[4] Less than $500,000.

Table II.F8.—Operations of the OASI Trust Fund During Selected Calendar Years 1940-98 and Estimated Future Operations During Calendar Years 1999-2008, on the Basis of the Intermediate Set of Assumptions (Cont.)

[In millions]

Calendar year	Expenditures				Assets	
	Total	Benefit payments [1]	Administrative expenses	Transfers to Railroad Retirement program	Net increase during year	Amount at end of period
Historical data:						
1940	$62	$35	$26	—	$306	$2,031
1945	304	274	30	—	1,116	7,121
1950	1,022	961	61	—	1,905	13,721
1955	5,079	4,968	119	-$7	1,087	21,663
1960	11,198	10,677	203	318	184	20,324
1965	17,501	16,737	328	436	-890	18,235
1970	29,848	28,798	471	579	2,371	32,454
1975	60,395	58,517	896	982	-789	36,987
1980	107,678	105,082	1,154	1,442	-1,837	22,824
1985	171,150	167,248	1,592	2,310	[2] 8,725	35,842
1986	181,000	176,813	1,601	2,585	[2] 3,239	39,081
1987	187,668	183,587	1,524	2,557	23,068	62,149
1988	200,020	195,454	1,776	2,790	40,750	102,899
1989	212,489	207,971	1,673	2,845	52,164	155,063
1990	227,519	222,987	1,563	2,969	59,134	214,197
1991	245,634	240,467	1,792	3,375	53,652	267,849
1992	259,861	254,883	1,830	3,148	51,301	319,150
1993	273,104	267,755	1,996	3,353	50,173	369,322
1994	284,133	279,068	1,645	3,420	44,138	413,460
1995	297,760	291,630	2,077	4,052	45,041	458,502
1996	308,217	302,861	1,802	3,554	55,524	514,026
1997	322,073	316,257	2,128	3,688	75,096	589,121
1998	332,324	326,762	1,899	3,662	92,524	681,645
Estimates:						
1999	341,167	335,330	2,232	3,606	108,827	790,473
2000	352,428	346,938	2,009	3,481	110,811	901,284
2001	366,277	360,859	2,012	3,406	119,458	1,020,742
2002	382,420	376,849	2,087	3,484	126,682	1,147,424
2003	399,469	393,860	2,132	3,477	135,420	1,282,844
2004	418,508	412,865	2,168	3,475	144,633	1,427,477
2005	439,730	434,034	2,200	3,495	156,117	1,583,594
2006	463,103	457,434	2,232	3,437	166,792	1,750,387
2007	488,266	482,428	2,263	3,575	179,699	1,930,086
2008	515,994	510,074	2,295	3,624	191,068	2,121,154

[1] Beginning in 1966, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for unnegotiated benefit checks.

[2] Reflects offset for repayment from the OASI Trust Fund of amounts borrowed from the DI and HI Trust Funds in 1982. The amount repaid in 1985 was $4,364 million; in 1986, the amount was $13,155 million.

Note: Totals do not necessarily equal the sums of rounded components.

Table II.F9.—Operations of the DI Trust Fund During Selected Fiscal Years 1960-98 and Estimated Future Operations During Fiscal Years 1999-2008, on the Basis of the Intermediate Set of Assumptions

[In millions]

Fiscal year [1]	Income				
	Total	Net contributions [2]	Income from taxation of benefits	Payments from the general fund of the Treasury [3]	Net interest [4]
Historical data:					
1960	$1,034	$987	—	—	$47
1965	1,237	1,175	—	—	62
1970	4,380	4,141	—	$16	223
1975	7,920	7,356	—	52	512
1980	17,376	16,805	—	118	453
1985	17,984	16,876	$217	—	891
1986	20,130	18,139	229	1,017	746
1987	20,047	19,324	[5] -16	—	738
1988	22.369	21,736	56	—	577
1989	24,479	23,694	135	—	650
1990	28,215	27,291	158	—	766
1991	29,322	28,953	131	-775	1,014
1992	31,168	29,871	218	—	1,080
1993	32,056	30,822	268	—	966
1994	34,044	33,041	305	—	699
1995	70,209	67,987	335	—	1,888
1996	59,220	56,571	370	-203	2,482
1997	60,088	56,162	400	—	3,526
1998	62,943	57,982	526	—	4,434
Estimates:					
1999	67,578	61,692	694	—	5,192
2000	73,204	66,715	612	—	5,877
2001	77,702	70,344	660	-8	6,706
2002	81,531	73,198	718	—	7,615
2003	85,493	76,175	787	—	8,530
2004	89,608	79,354	871	—	9,383
2005	95,014	83,879	968	—	10,168
2006	99,379	87,419	1,078	—	10,882
2007	104,443	91,801	1,201	—	11,441
2008	109,273	96,102	1,335	—	11,836

[1] Under the Congressional Budget Act of 1974 (Public Law 93-344), fiscal years 1977 and later consist of the 12 months ending on September 30 of each year. Fiscal years prior to 1977 consisted of the 12 months ending on June 30 of each year.

[2] Beginning in 1983, includes transfers from general fund of Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 and later, if such credits were considered to be covered wages.

[3] Includes payments (1) in 1967 and later, for costs of noncontributory wage credits for military service performed before 1957; and (2) in 1972-83, for costs of deemed wage credits for military service performed after 1956.

[4] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust fund on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in July 1974, the figures shown include relatively small amounts of gifts to the fund. Net interest for 1983-86 reflects payments from a borrowing trust fund to a lending trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-91, interest paid from the trust fund to the general fund on advance tax transfers is reflected. The amount shown for 1985 includes an interest adjustment of $14.8 million on unnegotiated checks issued before April 1985.

[5] Reflects $195 million in transfers from the DI Trust Fund to the general fund of the Treasury to correct estimated amounts transferred for calendar years 1984 and 1985.

Table II.F9.—Operations of the DI Trust Fund During Selected Fiscal Years 1960-98 and Estimated Future Operations During Fiscal Years 1999-2008, on the Basis of the Intermediate Set of Assumptions (Cont.)

[In millions]

Fiscal year	Expenditures				Assets	
	Total	Benefit payments [1]	Administrative expenses	Transfers to Railroad Retirement program	Net increase during year	Amount at end of period
Historical data:						
1960	$533	$528	$32	-$27	$501	$2,167
1965	1,495	1,392	79	24	-257	2,007
1970	2,954	2,795	149	10	1,426	5,104
1975	7,982	7,701	253	29	-62	8,191
1980	15,320	14,998	334	-12	2,056	7,680
1985	19,294	18,648	603	43	[2] 1,230	5,873
1986	20,196	19,529	600	68	[2] 2,475	8,348
1987	21,222	20,427	738	57	-1,175	7,173
1988	22,269	21,405	803	61	100	7,273
1989	23,389	22,550	751	88	1,090	8,363
1990	25,124	24,327	717	80	3,091	11,455
1991	27,780	26,909	789	82	1,543	12,997
1992	31,285	30,382	845	58	-116	12,881
1993	34,632	33,615	935	83	-2,576	10,305
1994	37,979	36,851	1,022	106	-3,935	6,370
1995	41,374	40,234	1,072	68	28,835	35,206
1996	44,343	43,266	1,074	2	14,877	50,083
1997	46,689	45,419	1,211	59	13,399	63,483
1998	49,338	47,619	1,563	157	13,604	77,087
Estimates:						
1999	51,920	50,307	1,507	106	15,658	92,746
2000	55,728	54,070	1,540	118	17,476	110,221
2001	59,716	58,100	1,527	89	17,986	128,208
2002	64,495	62,770	1,602	123	17,036	145,244
2003	69,816	67,999	1,684	133	15,677	160,921
2004	75,903	73,985	1,774	143	13,705	174,626
2005	82,646	80,619	1,871	156	12,368	186,994
2006	90,062	87,941	1,974	147	9,317	196,311
2007	98,111	95,844	2,084	182	6,333	202,644
2008	106,496	104,097	2,202	197	2,777	205,421

[1] Beginning in 1967, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for unnegotiated benefit checks.

[2] Reflects repayment from the OASI Trust Fund of amounts borrowed from the DI Trust Fund in 1982. The amount repaid in 1985 was $2,540 million; in 1986, the amount was $2,541 million.

Note: Totals do not necessarily equal the sums of rounded components.

Table II.F10.—Operations of the DI Trust Fund During Selected Calendar Years 1960-98 and Estimated Future Operations During Calendar Years 1999-2008, on the Basis of the Intermediate Set of Assumptions

[In millions]

Calendar year	Income				
	Total	Net contributions [1]	Income from taxation of benefits	Payments from the general fund of the Treasury [2]	Net interest [3]
Historical data:					
1960	$1,063	$1,010	—	—	$53
1965	1,247	1,188	—	—	59
1970	4,774	4,481	—	$16	277
1975	8,035	7,444	—	90	502
1980	13,871	13,255	—	130	485
1985	19,301	17,191	$222	1,017	870
1986	19,439	18,399	238	—	803
1987	20,303	19,691	[4] -36	—	648
1988	22,699	22,039	61	—	600
1989	24,795	23,993	95	—	707
1990	28,791	28,539	144	-775	883
1991	30,390	29,137	190	—	1,063
1992	31,430	30,136	232	—	1,062
1993	32,301	31,185	281	—	835
1994	52,841	51,373	311	—	1,157
1995	56,696	54,401	341	-203	2,158
1996	60,710	57,325	373	—	3,012
1997	60,499	56,037	470	—	3,992
1998	64,357	58,966	558	—	4,832
Estimates:					
1999	68,338	62,160	648	—	5,529
2000	74,882	67,992	623	-8	6,276
2001	78,814	70,977	673	—	7,164
2002	82,644	73,832	733	—	8,079
2003	86,764	76,989	806	—	8,969
2004	91,069	80,394	893	—	9,782
2005	95,861	84,333	993	—	10,535
2006	100,599	88,317	1,107	—	11,174
2007	105,662	92,773	1,233	—	11,656
2008	110,524	97,212	1,369	—	11,943

[1] Beginning in 1983, includes transfers from general fund of Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 and later, if such credits were considered to be covered wages.

[2] Includes payments (1) in 1966 and later, for costs of noncontributory wage credits for military service performed before 1957; and (2) in 1971-82, for costs of deemed wage credits for military service performed after 1956.

[3] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust fund on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in July 1974, the figures shown include relatively small amounts of gifts to the fund. Net interest for 1983-86 reflects payments from a borrowing trust fund to a lending trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-90, interest paid from the trust fund to the general fund on advance tax transfers is reflected. The amount shown for 1985 includes an interest adjustment of $14.8 million on unnegotiated checks issued before April 1985.

[4] Reflects $195 million in transfers from the DI Trust Fund to the general fund of the Treasury to correct estimated amounts transferred for calendar years 1984 and 1985.

Table II.F10.—Operations of the DI Trust Fund During Selected Calendar Years 1960-98 and Estimated Future Operations During Calendar Years 1999-2008, on the Basis of the Intermediate Set of Assumptions (Cont.)

[In millions]

Calendar year	Expenditures				Assets	
	Total	Benefit payments [1]	Administrative expenses	Transfers to Railroad Retirement program	Net increase during year	Amount at end of period
Historical data:						
1960	$600	$568	$36	-$5	$464	$2,289
1965	1,687	1,573	90	24	-440	1,606
1970	3,259	3,085	164	10	1,514	5,614
1975	8,790	8,505	256	29	-754	7,354
1980	15,872	15,515	368	-12	-2,001	3,629
1985	19,478	18,827	608	43	[2] 2,363	6,321
1986	20,522	19,853	600	68	[2] 1,459	7,780
1987	21,425	20,519	849	57	-1,122	6,658
1988	22,494	21,695	737	61	206	6,864
1989	23,753	22,911	754	88	1,041	7,905
1990	25,616	24,829	707	80	3,174	11,079
1991	28,571	27,695	794	82	1,819	12,898
1992	32,004	31,112	834	58	-574	12,324
1993	35,662	34,613	966	83	-3,361	8,963
1994	38,879	37,744	1,029	106	13,962	22,925
1995	42,055	40,923	1,064	68	14,641	37,566
1996	45,351	44,189	1,160	2	15,359	52,924
1997	47,034	45,695	1,280	59	13,465	66,389
1998	49,931	48,207	1,567	157	14,425	80,815
Estimates:						
1999	52,817	51,226	1,486	106	15,521	96,335
2000	56,656	55,001	1,537	118	18,227	114,562
2001	60,814	59,181	1,544	89	18,000	132,562
2002	65,744	64,000	1,621	123	16,900	149,462
2003	71,240	69,401	1,705	133	15,524	164,986
2004	77,489	75,549	1,797	143	13,580	178,566
2005	84,396	82,345	1,895	156	11,465	190,032
2006	91,989	89,843	2,000	147	8,609	198,641
2007	100,168	97,874	2,112	182	5,493	204,135
2008	108,598	106,170	2,231	197	1,926	206,061

[1] Beginning in 1966, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for unnegotiated benefit checks.

[2] Reflects repayment from the OASI Trust Fund of amounts borrowed from the DI Trust Fund in 1982. The amount repaid in 1985 was $2,540 million; in 1986, the amount was $2,541 million.

Note: Totals do not necessarily equal the sums of rounded components.

Table II.F11.—Operations of the OASI and DI Trust Funds, Combined, During Selected Fiscal Years 1960-98 and Estimated Future Operations During Fiscal Years 1999-2008, on the Basis of the Intermediate Set of Assumptions

[In millions]

Fiscal year [1]	Income				
	Total	Net contributions [2]	Income from taxation of benefits	Payments from the general fund of the Treasury [3]	Net interest [4]
Historical data:					
1960	$11,394	$10,830	—	—	$564
1965	17,681	17,032	—	—	648
1970	36,127	34,096	—	$458	1,572
1975	66,677	63,374	—	499	2,804
1980	117,427	114,413	—	675	2,339
1985	197,865	192,181	$3,368	105	2,211
1986	215,461	205,146	3,558	3,310	3,447
1987	226,893	218,878	3,307	69	4,638
1988	258,090	248,145	3,390	55	6,500
1989	284,936	270,811	3,772	43	10,310
1990	306,822	288,797	3,081	34	14,909
1991	322,611	299,794	5,921	-2,864	19,759
1992	338,270	308,377	6,237	19	23,637
1993	351,354	318,391	6,161	14	26,788
1994	376,307	341,438	5,656	10	29,203
1995	396,276	357,516	5,449	7	33,304
1996	416,064	373,728	6,155	-327	36,508
1997	446,553	398,474	6,862	3	41,215
1998	478,608	422,853	9,121	2	46,632
Estimates:					
1999	513,730	450,112	11,785	1	51,832
2000	533,178	466,583	10,241	([5])	56,354
2001	556,136	484,539	10,687	-835	61,745
2002	583,630	504,266	11,252	([5])	68,111
2003	612,044	524,775	11,923	([5])	75,346
2004	642,517	546,643	12,729	([5])	83,145
2005	683,516	577,829	13,667	([5])	92,019
2006	718,789	602,196	14,750	([5])	101,843
2007	760,846	632,411	15,937	([5])	112,498
2008	803,465	662,035	17,260	([5])	124,169

[1] Under the Congressional Budget Act of 1974 (Public Law 93-344), fiscal years 1977 and later consist of the 12 months ending on September 30 of each year. Fiscal years prior to 1977 consisted of the 12 months ending on June 30 of each year.

[2] Beginning in 1983, includes transfers from general fund of Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 and later, if such credits were considered to be covered wages.

[3] Includes payments (1) in 1947-52 and in 1967 and later, for costs of noncontributory wage credits for military service performed before 1957; (2) in 1972-83, for costs of deemed wage credits for military service performed after 1956; and (3) in 1969 and later, for costs of benefits to certain uninsured persons who attained age 72 before 1968.

[4] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust funds on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in October 1973, the figures shown include relatively small amounts of gifts to the funds. Net interest for 1983-86 reflects payments from a borrowing trust fund to a lending trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-91, interest paid from the trust funds to the general fund on advance tax transfers is reflected. The amounts shown for 1985 and 1986 include interest adjustments of $91.3 million and $11.5 million, respectively, on unnegotiated checks issued before April 1985.

[5] Less than $500,000.

Table II.F11.—Operations of the OASI and DI Trust Funds, Combined, During Selected Fiscal Years 1960-98 and Estimated Future Operations During Fiscal Years 1999-2008, on the Basis of the Intermediate Set of Assumptions (Cont.)

[In millions]

Fiscal year	Expenditures				Assets	
	Total	Benefit payments [1]	Administrative expenses	Transfers to Railroad Retirement program	Net increase during year	Amount at end of period
Historical data:						
1960	$11,606	$10,798	$234	$574	-$212	$22,996
1965	17,456	16,618	379	459	224	22,187
1970	30,275	29,063	623	589	5,851	37,720
1975	64,658	62,547	1,101	1,010	2,018	48,138
1980	118,548	115,624	1,494	1,430	-1,121	32,246
1985	188,504	183,959	2,192	2,353	[2] 7,538	39,750
1986	198,730	193,869	2,209	2,653	[2] 6,117	45,867
1987	207,323	202,430	2,279	2,614	19,570	65,437
1988	219,290	213,907	2,532	2,851	38,800	104,237
1989	232,491	227,150	2,407	2,934	52,445	156,682
1990	248,605	243,275	2,280	3,049	58,217	214,900
1991	269,096	263,104	2,535	3,457	53,515	268,415
1992	287,524	281,650	2,668	3,206	50,746	319,161
1993	304,566	298,176	2,955	3,435	46,788	365,949
1994	319,551	313,129	2,896	3,526	56,757	422,706
1995	335,830	328,841	2,870	4,120	60,446	483,152
1996	349,654	343,235	2,862	3,556	66,410	549,562
1997	365,238	358,281	3,210	3,747	81,316	630,878
1998	379,291	371,875	3,597	3,819	99,318	730,195
Estimates:						
1999	390,826	383,442	3,673	3,711	122,903	853,099
2000	405,162	398,004	3,558	3,599	128,017	981,116
2001	422,371	415,362	3,514	3,495	133,765	1,114,881
2002	442,871	435,589	3,675	3,607	140,759	1,255,640
2003	464,975	457,559	3,805	3,610	147,070	1,402,710
2004	489,561	482,010	3,933	3,619	152,956	1,555,666
2005	517,003	509,289	4,063	3,651	166,513	1,722,179
2006	547,240	539,459	4,196	3,584	171,549	1,893,728
2007	580,019	571,924	4,338	3,757	180,827	2,074,555
2008	615,335	607,026	4,489	3,821	188,130	2,262,685

[1] Beginning in 1967, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for unnegotiated benefit checks.

[2] Reflects offset for repayment from the OASI Trust Fund of amounts borrowed from the HI Trust Fund in 1982. The amount repaid in 1985 was $1,824 million; in 1986, the amount was $10,613 million.

Note: Totals do not necessarily equal the sums of rounded components.

Table II.F12.—Operations of the OASI and DI Trust Funds, Combined, During Selected Calendar Years 1960-98 and Estimated Future Operations During Calendar Years 1999-2008, on the Basis of the Intermediate Set of Assumptions

[In millions]

Calendar year	Income				
	Total	Net contributions [1]	Income from taxation of benefits	Payments from the general fund of the Treasury [2]	Net interest [3]
Historical data:					
1960	$12,445	$11,876	—	—	$569
1965	17,857	17,205	—	—	651
1970	36,993	34,737	—	$465	1,791
1975	67,640	64,259	—	515	2,866
1980	119,712	116,711	—	670	2,330
1985	203,540	194,149	$3,430	3,220	2,741
1986	216,833	209,140	3,662	160	3,871
1987	231,039	222,425	3,221	55	5,338
1988	263,469	251,814	3,445	43	8,168
1989	289,448	274,189	2,534	34	12,692
1990	315,443	296,070	4,992	-2,864	17,245
1991	329,676	301,711	6,054	19	21,892
1992	342,591	311,128	6,084	14	25,365
1993	355,578	322,090	5,616	10	27,862
1994	381,111	344,695	5,306	7	31,103
1995	399,497	359,021	5,831	-332	34,977
1996	424,451	378,881	6,844	7	38,718
1997	457,668	405,984	7,896	2	43,787
1998	489,204	430,174	9,707	1	49,323
Estimates:					
1999	518,332	453,314	10,962	(4)	54,056
2000	538,121	469,667	10,339	-835	58,950
2001	564,550	488,895	10,807	(4)	64,847
2002	591,747	508,697	11,403	(4)	71,646
2003	621,652	530,371	12,100	(4)	79,182
2004	654,210	553,801	12,944	(4)	87,465
2005	691,708	580,958	13,912	(4)	96,838
2006	730,494	608,376	15,033	(4)	107,085
2007	773,627	639,117	16,244	(4)	118,266
2008	817,586	669,685	17,610	(4)	130,290

[1] Beginning in 1983, includes transfers from general fund of Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 and later, if such credits were considered to be covered wages.

[2] Includes payments (1) in 1947-51 and in 1966 and later, for costs of noncontributory wage credits for military service performed before 1957; (2) in 1971-82, for costs of deemed wage credits for military service performed after 1956; and (3) in 1968 and later, for costs of benefits to certain uninsured persons who attained age 72 before 1968.

[3] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust funds on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in October 1973, the figures shown include relatively small amounts of gifts to the funds. Net interest for 1983-86 reflects payments from a borrowing trust fund to a lending trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-90, interest paid from the trust funds to the general fund on advance tax transfers is reflected. The amount shown for 1985 includes an interest adjustment of $102.8 million on unnegotiated checks issued before April 1985.

[4] Less than $500,000.

Table II.F12.—Operations of the OASI and DI Trust Funds, Combined, During Selected Calendar Years 1960-98 and Estimated Future Operations During Calendar Years 1999-2008, on the Basis of the Intermediate Set of Assumptions (Cont.)

[In millions]

Calendar year	Expenditures				Assets	
	Total	Benefit payments [1]	Administrative expenses	Transfers to Railroad Retirement program	Net increase during year	Amount at end of period
Historical data:						
1960	$11,798	$11,245	$240	$314	$647	$22,613
1965	19,187	18,311	418	459	-1,331	19,841
1970	33,108	31,884	635	589	3,886	38,068
1975	69,184	67,022	1,152	1,010	-1,544	44,342
1980	123,550	120,598	1,522	1,430	-3,838	26,453
1985	190,628	186,075	2,200	2,353	[2] 11,088	42,163
1986	201,522	196,667	2,202	2,653	[2] 4,698	46,861
1987	209,093	204,106	2,373	2,614	21,946	68,807
1988	222,514	217,149	2,513	2,851	40,955	109,762
1989	236,242	230,882	2,427	2,934	53,206	162,968
1990	253,135	247,816	2,270	3,049	62,309	225,277
1991	274,205	268,162	2,587	3,457	55,471	280,747
1992	291,865	285,995	2,664	3,206	50,726	331,473
1993	308,766	302,368	2,963	3,435	46,812	378,285
1994	323,011	316,812	2,674	3,526	58,100	436,385
1995	339,815	332,554	3,141	4,120	59,683	496,068
1996	353,569	347,050	2,962	3,556	70,883	566,950
1997	369,108	361,952	3,409	3,747	88,560	655,510
1998	382,255	374,969	3,467	3,819	106,950	762,460
Estimates:						
1999	393,984	386,556	3,717	3,711	124,348	886,808
2000	409,083	401,938	3,546	3,599	129,038	1,015,846
2001	427,091	420,040	3,557	3,495	137,458	1,153,304
2002	448,164	440,849	3,708	3,607	143,583	1,296,887
2003	470,709	463,261	3,837	3,610	150,944	1,447,830
2004	495,997	488,414	3,965	3,619	158,213	1,606,044
2005	524,126	516,379	4,096	3,651	167,583	1,773,626
2006	555,092	547,277	4,232	3,584	175,402	1,949,028
2007	588,435	580,303	4,375	3,757	185,192	2,134,220
2008	624,591	616,244	4,526	3,821	192,994	2,327,215

[1] Beginning in 1966, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for unnegotiated benefit checks.

[2] Reflects offset for repayment from the OASI Trust Fund of amounts borrowed from the HI Trust Fund in 1982. The amount repaid in 1985 was $1,824 million; in 1986, the amount was $10,613 million.

Note: Totals do not necessarily equal the sums of rounded components.

2. Long-Range Actuarial Status of the Trust Funds

Historically, the actuarial balance (described earlier in this section) has been used as the principal measure of the actuarial status of the OASDI program. Actuarial balances have traditionally been computed for the 25-year valuation period encompassing 1999-2023, the 50-year valuation period covering 1999-2048, and the entire long-range (75-year) valuation period, 1999-2073.

Beginning with the 1991 Annual Report, actuarial balances have also been computed based on the intermediate (alternative II) assumptions for valuation periods that are 10 years, 11 years, and continuing through 75 years in length. This series of actuarial balances provides the basis for the test of long-range close actuarial balance, described earlier in this section.

In addition to these actuarial balances, other indicators of the financial condition of the program are shown in this report. One is the series of projected annual balances (that is, the differences between the projected annual income rates and annual cost rates), with particular attention being paid to the level of the annual balances at the end of the long-range period and the time at which the annual balances may change from positive to negative values. Another is the pattern of projected trust fund ratios, with particular attention being paid to the amount and year of maximum fund ratio accumulation, to the year of exhaustion of the funds, and to stability of the trust fund ratio in cases where the ratio remains positive at the end of the long-range period. These additional indicators are defined in the introduction to this section.

The estimates are sensitive to changes in the underlying economic and demographic assumptions. The degree of sensitivity, however, varies considerably among the various assumptions. For example, variations in assumed fertility rates have little effect on the estimates for the early years, because almost all of the covered workers and beneficiaries projected for the early years were born prior to the start of the projection period. However, lower fertility rates have large impacts on the actuarial balance in the later years. Variations in economic factors, such as interest rates and increases in wages and prices, have significant effects on the estimates for the short term, as well as for the long term. In general, the degree of confidence that can be placed in the assumptions and estimates is greater for the earlier years than for the later years. Nonetheless, even for the earlier years, the estimates are only an indication of the expected trend and general

range of future program experience. Section II.G contains a more detailed discussion of the effects on the estimates of varying certain economic and demographic assumptions.

a. Annual Income Rates, Cost Rates, and Balances

Table II.F13 presents a comparison of the estimated annual income rates and cost rates by trust fund and alternative. As previously mentioned, the annual income rate excludes net interest income, as well as certain other transfers from the general fund of the Treasury. Detailed long-range projections of trust fund operations, in nominal dollar amounts, are shown in appendix B.

The projections for OASDI under the intermediate alternative II assumptions show income rates that increase slowly and steadily due to the combination of the flat payroll tax rate and the gradually increasing effect of the taxation of benefits. The pattern followed by the cost rates is much different. Initially, they are projected to rise slowly with faster increases by 2010; for about the next 20 years thereafter (through about 2030), they increase rather rapidly, as the "baby-boom" generation reaches retirement age. Cost rates continue to rise, but more slowly, through 2037 and then decline slightly for the next 6 years as the "baby-boom" generation ages and begins to diminish, and the relatively small birth cohorts of the late 1970s reach retirement age. Thereafter, they rise steadily, but slowly, reflecting projected increases in life expectancy. The cost rates during the third 25-year subperiod rise to a level over 19 percent of taxable payroll under the intermediate alternative II assumptions. The income rate during the third 25-year subperiod is over 13 percent of taxable payroll under alternative II.

Projected income rates under the low cost and high cost sets of assumptions (alternatives I and III, respectively) are very similar to those projected for alternative II as they are largely a reflection of the tax rates specified in the law. OASDI combined cost rates for alternatives I and III differ significantly in size from those projected for alternative II, but follow generally similar patterns. For the low cost alternative I, cost rates decline somewhat for the first 5 years, and then rise, reaching the current level around 2010 and a peak of 15.27 percent of payroll in 2033. Thereafter, cost rates decline gradually, reaching a level of 14.04 percent of payroll in 2073. For the high cost alternative III, cost rates rise throughout the 75-year period. They rise at a relatively fast pace during the next 5 years, due to the two

assumed economic recessions, and between 2010 and 2030, because of the aging of the "baby-boom" generation. During the third 25-year subperiod, the projected cost rate continues rising and reaches 28.78 percent of payroll in 2073.

The projected pattern of the OASDI annual balances (that is, the difference between the income rates and the cost rates) is important in the analysis of the financial condition of the program. Under the alternative II assumptions the annual balances are positive for 15 years (through 2013) and are negative thereafter. This annual deficit rises rapidly, reaching over 2 percent of taxable payroll by 2020, and continues rising thereafter, to a level of 6.44 percent of taxable payroll for 2073.

Under alternative I projected OASDI annual balances are positive for 20 years (through 2018) and thereafter are negative. Deficits under alternative I rise to a peak of 2.26 percent of taxable payroll in 2033, but decline thereafter, as the effect of the "baby-boom" generation diminishes and the assumed higher fertility rates increase the work force. Deficits under alternative I decline to 0.97 percent of payroll by 2073. Under the more pessimistic alternative III, however, the OASDI balances are projected to be positive for only 10 years (through 2008) and to be negative thereafter, with deficits of 3.89 percent in 2020, 10.02 percent in 2050, and 14.98 percent of payroll in 2073.

Table II.F13.—Comparison of Estimated Income Rates and Cost Rates by Trust Fund and Alternative, Calendar Years 1999-2075

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Combined		
	Income rate [1]	Cost rate	Balance	Income rate [1]	Cost rate	Balance	Income rate [1]	Cost rate	Balance
Intermediate:									
1999	10.98	9.35	1.63	1.72	1.45	0.27	12.70	10.80	1.90
2000	10.83	9.30	1.54	1.82	1.49	.32	12.65	10.79	1.86
2001	10.86	9.29	1.57	1.82	1.54	.28	12.67	10.83	1.85
2002	10.86	9.31	1.55	1.82	1.60	.22	12.68	10.91	1.76
2003	10.86	9.33	1.54	1.82	1.66	.16	12.68	10.99	1.69
2004	10.87	9.35	1.52	1.82	1.73	.09	12.69	11.08	1.61
2005	10.88	9.38	1.50	1.82	1.80	.02	12.70	11.18	1.52
2006	10.88	9.42	1.47	1.82	1.87	-.05	12.71	11.29	1.42
2007	10.89	9.47	1.42	1.82	1.94	-.12	12.71	11.41	1.31
2008	10.90	9.54	1.36	1.83	2.01	-.18	12.73	11.55	1.18
2010	10.92	9.82	1.10	1.83	2.09	-.26	12.75	11.91	.84
2015	10.99	11.05	-.06	1.83	2.22	-.39	12.82	13.26	-.45
2020	11.08	12.75	-1.66	1.83	2.28	-.45	12.91	15.03	-2.12
2025	11.18	14.24	-3.06	1.83	2.39	-.55	13.01	16.62	-3.61
2030	11.25	15.31	-4.05	1.84	2.41	-.57	13.09	17.71	-4.62
2035	11.31	15.83	-4.52	1.84	2.37	-.53	13.15	18.19	-5.05
2040	11.33	15.80	-4.47	1.84	2.38	-.54	13.17	18.18	-5.00
2045	11.35	15.68	-4.33	1.84	2.47	-.63	13.19	18.15	-4.96
2050	11.37	15.75	-4.38	1.84	2.53	-.68	13.22	18.28	-5.06
2055	11.40	16.07	-4.67	1.85	2.57	-.73	13.25	18.64	-5.39
2060	11.44	16.49	-5.06	1.85	2.56	-.71	13.29	19.05	-5.77
2065	11.47	16.82	-5.35	1.85	2.55	-.70	13.32	19.37	-6.05
2070	11.49	17.07	-5.58	1.85	2.56	-.71	13.34	19.63	-6.29
2075	11.51	17.30	-5.79	1.85	2.59	-.74	13.36	19.90	-6.53

Table II.F13.—Comparison of Estimated Income Rates and Cost Rates by Trust Fund and Alternative, Calendar Years 1999-2075 (Cont.)

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Combined		
	Income rate [1]	Cost rate	Balance	Income rate [1]	Cost rate	Balance	Income rate [1]	Cost rate	Balance
Low Cost:									
1999	10.98	9.26	1.72	1.72	1.41	0.30	12.70	10.67	2.03
2000	10.82	9.11	1.71	1.82	1.43	.38	12.63	10.54	2.10
2001	10.85	9.02	1.83	1.82	1.45	.36	12.67	10.48	2.19
2002	10.85	8.95	1.90	1.82	1.48	.34	12.67	10.43	2.23
2003	10.85	8.91	1.95	1.82	1.51	.30	12.67	10.42	2.25
2004	10.86	8.87	1.99	1.82	1.55	.27	12.67	10.42	2.25
2005	10.86	8.84	2.02	1.82	1.59	.23	12.68	10.43	2.25
2006	10.87	8.81	2.05	1.82	1.63	.19	12.68	10.45	2.24
2007	10.87	8.80	2.07	1.82	1.67	.15	12.69	10.47	2.22
2008	10.88	8.82	2.06	1.82	1.70	.12	12.70	10.52	2.18
2010	10.89	9.02	1.87	1.82	1.72	.10	12.71	10.74	1.97
2015	10.95	10.05	.90	1.82	1.72	.10	12.77	11.77	1.00
2020	11.02	11.50	-.47	1.82	1.73	.10	12.85	13.23	-.38
2025	11.10	12.67	-1.57	1.83	1.78	.05	12.92	14.44	-1.52
2030	11.15	13.36	-2.20	1.83	1.77	.05	12.98	15.13	-2.15
2035	11.19	13.49	-2.31	1.83	1.73	.10	13.01	15.22	-2.21
2040	11.19	13.14	-1.95	1.83	1.72	.11	13.02	14.86	-1.84
2045	11.19	12.75	-1.56	1.83	1.76	.07	13.02	14.51	-1.49
2050	11.20	12.55	-1.35	1.83	1.77	.06	13.03	14.32	-1.29
2055	11.21	12.54	-1.33	1.83	1.78	.06	13.04	14.31	-1.27
2060	11.23	12.55	-1.33	1.83	1.75	.08	13.06	14.30	-1.24
2065	11.23	12.46	-1.23	1.83	1.73	.10	13.06	14.19	-1.13
2070	11.23	12.34	-1.11	1.83	1.74	.09	13.07	14.08	-1.02
2075	11.24	12.29	-1.05	1.83	1.76	.07	13.07	14.05	-.98
High Cost:									
1999	10.98	9.35	1.63	1.72	1.47	.24	12.70	10.82	1.88
2000	10.87	9.50	1.36	1.82	1.59	.23	12.68	11.09	1.59
2001	10.86	9.39	1.47	1.82	1.65	.17	12.68	11.05	1.63
2002	10.86	9.49	1.37	1.82	1.75	.07	12.68	11.24	1.44
2003	10.89	10.08	.81	1.82	1.94	-.12	12.71	12.02	.68
2004	10.89	10.02	.87	1.82	2.02	-.20	12.71	12.04	.67
2005	10.89	10.02	.87	1.82	2.11	-.28	12.72	12.13	.59
2006	10.90	10.09	.81	1.83	2.20	-.37	12.73	12.29	.44
2007	10.91	10.20	.72	1.83	2.30	-.47	12.74	12.50	.25
2008	10.93	10.33	.60	1.83	2.39	-.56	12.76	12.72	.04
2010	10.95	10.67	.28	1.83	2.54	-.71	12.78	13.21	-.43
2015	11.04	12.06	-1.02	1.84	2.76	-.92	12.88	14.82	-1.94
2020	11.16	13.99	-2.84	1.84	2.87	-1.03	13.00	16.87	-3.87
2025	11.27	15.84	-4.57	1.85	3.05	-1.20	13.12	18.88	-5.77
2030	11.37	17.38	-6.01	1.85	3.10	-1.26	13.22	20.49	-7.26
2035	11.46	18.45	-6.99	1.85	3.09	-1.24	13.31	21.54	-8.23
2040	11.51	18.98	-7.47	1.85	3.14	-1.29	13.36	22.13	-8.76
2045	11.56	19.40	-7.85	1.86	3.33	-1.47	13.41	22.73	-9.31
2050	11.61	20.04	-8.43	1.86	3.47	-1.61	13.47	23.51	-10.04
2055	11.68	21.03	-9.35	1.87	3.59	-1.72	13.54	24.62	-11.07
2060	11.76	22.25	-10.49	1.87	3.61	-1.74	13.62	25.86	-12.24
2065	11.83	23.44	-11.61	1.87	3.62	-1.75	13.70	27.06	-13.36
2070	11.90	24.54	-12.64	1.87	3.64	-1.77	13.77	28.18	-14.41
2075	11.96	25.54	-13.57	1.87	3.68	-1.81	13.83	29.22	-15.39

[1] Income rates for 2000 are modified to include adjustments to the lump-sum payments received in 1983 from the general fund of the Treasury for the cost of noncontributory wage credits for military service in 1940-56.

Notes:

1. The income rate excludes interest income and certain transfers from the general fund of the Treasury.
2. Totals do not necessarily equal the sums of rounded components.

Also of interest are the long-range financial conditions of the separate OASI and DI programs. Annual balances under alternative II remain positive through 2014 for the OASI program, but only through 2005 for the DI program.

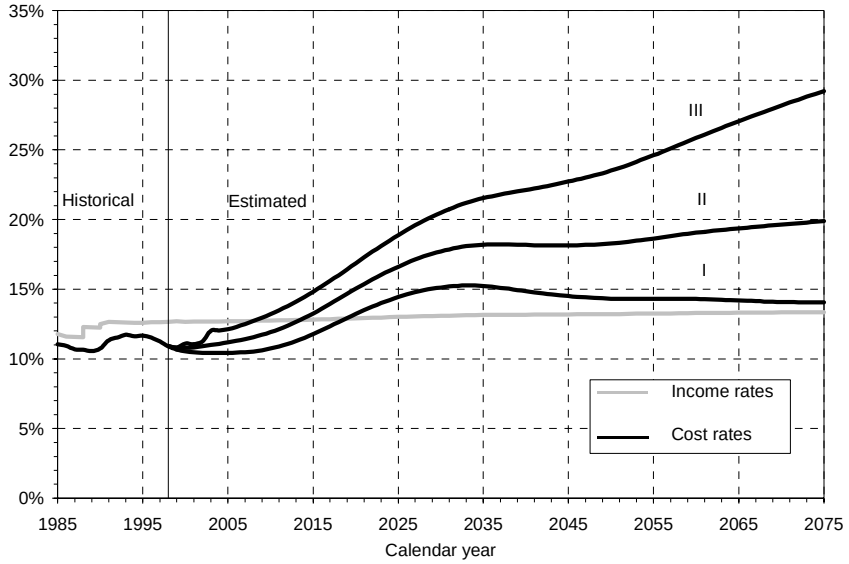
Figure II.F3 shows in graphical form the patterns of the OASDI annual income rates and cost rates. The income rates are shown only for alternative II in order to simplify the graphical presentation and because, as shown in table II.F13, the variation in the income rates by alternative is very small. Income rates increase generally, but at a slow rate, for each of the alternatives over the long-range period. Both increases in the income rate and variation among the alternatives result from the relatively small component of income from taxation of benefits. Increases in income from taxation of benefits reflect the combination of changes in the benefit cost and the fact that an increasing share of benefits will be subject to taxation, because benefit taxation threshold amounts are not indexed.

The OASDI long-range summarized income rates for alternatives I and III for the 75-year valuation period differ by less than 0.3 percent of taxable payroll. By 2073, the annual income rates under alternatives I and III differ by less than 0.8 percent of taxable payroll.

The patterns of the annual balances are indicated in figure II.F3. For each alternative, the magnitude of each of the positive balances in the early years, as a percent of taxable payroll, is represented by the distance between the appropriate cost-rate curve and the income-rate curve above it. The magnitude of each of the deficits in subsequent years is represented by the distance between the appropriate cost-rate curve and the income-rate curve below it.

In the future, the cost of the OASDI program, as a percent of taxable payroll, will not necessarily be within the range encompassed by alternatives I and III. Nonetheless, because alternatives I and III define a reasonably wide range of economic and demographic conditions, the resulting estimates delineate a reasonable range for consideration of potential future program costs.

Figure II.F3.—Estimated OASDI Income Rates and Cost Rates by Alternative, Calendar Years 1985-2075
[As a percentage of taxable payroll]



b. Summarized Income Rates, Cost Rates, and Balances

Summarized values for the full 75-year period are useful in analyzing the long-range financial condition of the program under present law and the long-range financial effects of proposed modifications to the law. In order to focus on the full 75-year period as well as on broad patterns through the period, tables II.F14 and II.F15 summarize, on a present-value basis, the projected annual figures shown in table II.F13 for various periods within the overall 75-year projection period.

Table II.F14 shows rates on a present-value basis summarized for each of the 25-year subperiods, excluding both the funds on hand at the beginning of the period and the cost of accumulating a target trust fund balance by the end of the period. These rates are useful for comparing the cash flows of tax income and expenditures, as an indicator of the degree to which tax income during the period is sufficient to meet the outgo estimated for the period.

For the combined OASDI program, a positive balance is projected for the first 25-year subperiod under both the low cost alternative I and the intermediate alternative II. A deficit is projected for the first 25-

year subperiod under the high cost alternative III. Deficits are projected for the second and third subperiods under all three alternatives.

Table II.F14.—Comparison of Summarized Income Rates and Cost Rates for 25-Year Subperiods [1], by Trust Fund and Alternative, Calendar Years 1999-2073

[As a percentage of taxable payroll]

	OASI			DI			Combined		
Subperiod	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Intermediate:									
1999-2023	10.95	10.51	0.45	1.82	1.99	-0.17	12.78	12.50	0.28
2024-2048	11.28	15.38	-4.10	1.84	2.41	-.57	13.12	17.79	-4.67
2049-2073	11.43	16.43	-5.00	1.85	2.56	-.71	13.28	18.99	-5.71
Low Cost:									
1999-2023	10.92	9.73	1.19	1.82	1.65	.17	12.74	11.38	1.36
2024-2048	11.17	13.09	-1.93	1.83	1.75	.07	12.99	14.85	-1.85
2049-2073	11.22	12.49	-1.27	1.83	1.75	.08	13.05	14.24	-1.19
High Cost:									
1999-2023	10.99	11.31	-.32	1.83	2.39	-.56	12.82	13.70	-.88
2024-2048	11.43	18.03	-6.60	1.85	3.15	-1.30	13.28	21.18	-7.89
2049-2073	11.75	22.22	-10.46	1.87	3.59	-1.72	13.62	25.80	-12.19

[1] Income rates do not include beginning trust fund balances and cost rates do not include the cost of accumulating target trust fund balances.

Note: Totals do not necessarily equal the sums of rounded components.

Table II.F15 shows summarized rates for valuation periods of the first 25, the first 50, and the entire 75 years of the long-range projection period, including the funds on hand at the start of the period and the cost of accumulating a target trust fund balance equal to 100 percent of annual expenditures by the end of the period. The actuarial balance for each of these three valuation periods is equal to the difference between the summarized income rate and the summarized cost rate for the corresponding period. An actuarial balance of zero for any period would indicate that estimated outgo for the period could be met, on average, with a remaining trust fund balance at the end of the period equal to 100 percent of the following year's outgo.

Table II.F15.—Comparison of Summarized Income Rates and Cost Rates for Valuation Periods [1], by Trust Fund and Alternative, Calendar Years 1999-2073

[As a percentage of taxable payroll]

Valuation period	OASI			DI			Combined		
	Income rate	Cost rate	Actuarial balance	Income rate	Cost rate	Actuarial balance	Income rate	Cost rate	Actuarial balance
Intermediate:									
25-years:									
1999-2023 . . .	11.88	10.97	0.91	1.93	2.07	-0.14	13.81	13.04	0.77
50-years:									
1999-2048 . . .	11.65	12.62	-.97	1.89	2.18	-.29	13.54	14.80	-1.26
75-years:									
1999-2073 . . .	11.60	13.31	-1.70	1.88	2.25	-.36	13.49	15.56	-2.07
Low Cost:									
25-years:									
1999-2023 . . .	11.82	10.14	1.68	1.92	1.70	.22	13.74	11.84	1.90
50-years:									
1999-2048 . . .	11.56	11.21	.35	1.88	1.71	.17	13.45	12.92	.53
75-years:									
1999-2073 . . .	11.49	11.42	.07	1.87	1.71	.16	13.37	13.14	.23
High Cost:									
25-years:									
1999-2023 . . .	11.92	11.83	.08	1.94	2.49	-.55	13.85	14.32	-.47
50-years:									
1999-2048 . . .	11.72	14.23	-2.51	1.90	2.73	-.83	13.63	16.96	-3.34
75-years:									
1999-2073 . . .	11.73	15.71	-3.98	1.90	2.88	-.99	13.62	18.60	-4.97

[1] Income rates include beginning trust fund balances and cost rates include the cost of reaching an ending fund target equal to 100 percent of annual expenditures by the end of the period.

Note: Totals do not necessarily equal the sums of rounded components.

The values in table II.F15 show that the combined OASDI program is expected to operate with a positive actuarial balance over the 25-year valuation period under alternatives I and II. For the 25-year valuation period the summarized values indicate actuarial balances of 1.89 percent of taxable payroll under alternative I, 0.77 percent under alternative II, and -0.48 percent under alternative III. Thus, the program is more than adequately financed for the 25-year valuation period under all but the high cost alternative III projections. For the 50-year valuation period the OASDI program would have a positive actuarial balance of 0.52 percent under alternative I, but would have deficits of 1.26 percent under alternative II and 3.34 percent under alternative III. Thus, the program is more than adequately financed for the 50-year valuation period under only the low cost set of assumptions, alternative I.

For the entire 75-year valuation period, the combined OASDI program would again have actuarial deficits except for the low cost set of assumptions, alternative I. The actuarial balance for this long-range valuation period is projected to be 0.23 percent of taxable payroll

under alternative I, -2.07 percent under alternative II, and -4.97 percent under alternative III.

As may be concluded from tables II.F14 and II.F15, the financial condition of the DI program is substantially weaker than that of the OASI program for the first 25 years. Summarized over the full 75-year period, however, long-range deficits for the OASI and DI programs under intermediate assumptions are more nearly the same relative to program costs.

c. Test of Long-Range Close Actuarial Balance

Two tests of the financial status of the OASI, DI, and combined OASDI programs are presented in this report. The test of long-range close actuarial balance incorporates a graduated tolerance scale which allows larger actuarial deficits (relative to program costs) for longer valuation periods, thus allowing for the greater uncertainty inherent in the estimates for later years. The other test, the short-range test of the financial adequacy of the program, was discussed earlier in this section.

Table II.F16 presents a comparison of the estimated actuarial balances with the minimum allowable balance (or maximum allowable deficit) under the long-range test, each expressed as a percentage of the summarized cost rate, based on the intermediate alternative II estimates. Values are shown for only 14 of the valuation periods: those of length 10 years, 15 years, and continuing in 5-year increments through 75 years. However, each of the 66 periods—those of length 10 years, 11 years, and continuing in 1-year increments through 75 years—is considered for the test. These minimum allowable balances are calculated to show the limit for each valuation period resulting from the graduated tolerance scale. The patterns in the estimated balances as a percentage of the summarized cost rates, as well as that for the minimum allowable balance, are presented graphically in figure II.F4 for the OASI, DI and combined OASDI programs. Values shown for the 25-year, 50-year, and 75-year valuation periods correspond to those presented in table II.F15.

As discussed earlier, a program is found not to be in long-range close actuarial balance if, for any of the valuation periods ending with the 10th through 75th years of the projection period, the estimated actuarial balance is less than the minimum allowable balance. The minimum allowable balance as a percentage of the summarized cost rate is

-5.0 percent for the full 75-year long-range period and is reduced uniformly for shorter valuation periods, reaching zero for the 10-year valuation period.

For the OASI program, the estimated actuarial balance as a percentage of the summarized cost rate exceeds the minimum allowable for valuation periods of length 10 years through 36 years, under the intermediate alternative II estimates. For valuation periods of length greater than 36 years, the estimated actuarial balance is less than the minimum allowable. For the full 75-year long-range period the estimated actuarial balance reaches -12.81 percent of the summarized cost rate, for a shortfall of 7.81 percent, from the minimum allowable balance of -5.0 percent of the summarized cost rate. Thus, although the OASI program satisfies the short-range test of financial adequacy (as discussed earlier in this section), it is not in long-range close actuarial balance.

For the DI program, the estimated actuarial balance as a percentage of the summarized cost rate exceeds the minimum allowable balance for valuation periods of length 10 through 16 years under the intermediate alternative II estimates. For valuation periods of length greater than 16 years, the estimated actuarial balance is less than the minimum allowable. The shortfall from the minimum allowable balance rises to a level of 16.10 percent of the summarized cost rate for the full long-range period, for a shortfall of 11.10 percent, from the minimum allowable balance of -5.0 percent of the summarized cost rate. Thus, as noted above for the OASI program, the DI program, although meeting the short-range test of financial adequacy (as discussed earlier in this section), is not in long-range close actuarial balance.

As indicated above, financing for the DI program is less adequate than for the OASI program during the first 25 years even though long-range actuarial deficits are more comparable over the entire 75-year period. This occurs because much more of the increase in the long-range cost occurs early for the DI program than for the OASI program. As a result, tax rates that are relatively more adequate for the OASI program during the first 25 years become relatively less adequate later in the long-range period.

For the combined OASDI program, the estimated actuarial balance as a percentage of the summarized cost rate exceeds the minimum allowable balance for valuation periods of length 10 years through 34 years. For valuation periods of length greater than 34 years, the estimated actuarial balance is below the minimum allowable balance. The size of

the shortfall from the minimum allowable balance rises gradually, reaching 8.28 percent of the summarized cost rate for the full 75-year long-range valuation period. Thus, although the OASDI program satisfies the short-range test of financial adequacy (as discussed earlier in this section), it is out of long-range close actuarial balance.

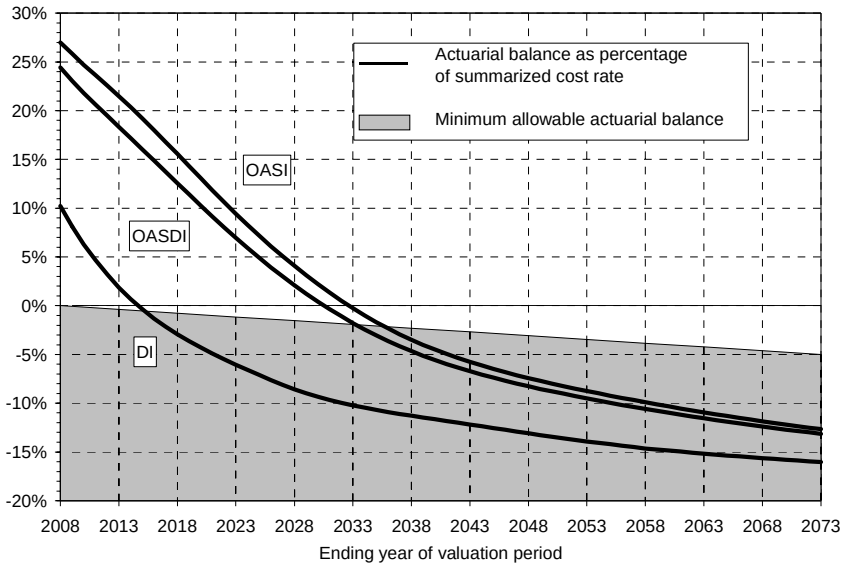
The OASI and DI programs, both separate and combined, were also found to be out of close actuarial balance in last year's report. The estimated deficits for the OASI, DI, and combined OASDI programs in this report are similar to those shown in last year's report.

Table II.F16.—Comparison of Estimated Long-Range Actuarial Balances With the Minimum Allowable for the Test for Close Actuarial Balance by Trust Fund, Based on Intermediate Estimates

Valuation period	Rates (percentage of taxable payroll)			Values expressed as a percentage of cost rate	
	Summarized income rate	Summarized cost rate	Actuarial balance	Actuarial balance	Minimum allowable actuarial balance
OASI:					
10 years: 1999-2008 . . .	12.98	10.31	2.66	25.82	0.00
15 years: 1999-2013 . . .	12.34	10.25	2.09	20.35	-.38
20 years: 1999-2018 . . .	12.04	10.53	1.51	14.30	-.77
25 years: 1999-2023 . . .	11.88	10.97	.91	8.27	-1.15
30 years: 1999-2028 . . .	11.79	11.43	.36	3.12	-1.54
35 years: 1999-2033 . . .	11.73	11.85	-.12	-1.00	-1.92
40 years: 1999-2038 . . .	11.69	12.18	-.49	-4.01	-2.31
45 years: 1999-2043 . . .	11.67	12.43	-.76	-6.14	-2.69
50 years: 1999-2048 . . .	11.65	12.62	-.97	-7.71	-3.08
55 years: 1999-2053 . . .	11.63	12.78	-1.15	-8.99	-3.46
60 years: 1999-2058 . . .	11.62	12.93	-1.31	-10.12	-3.85
65 years: 1999-2063 . . .	11.61	13.07	-1.46	-11.14	-4.23
70 years: 1999-2068 . . .	11.61	13.19	-1.59	-12.03	-4.62
75 years: 1999-2073 . . .	11.60	13.31	-1.70	-12.81	-5.00
DI:					
10 years: 1999-2008 . . .	2.06	1.90	.15	8.12	.00
15 years: 1999-2013 . . .	1.99	1.97	.01	.66	-.38
20 years: 1999-2018 . . .	1.95	2.02	-.07	-3.64	-.77
25 years: 1999-2023 . . .	1.93	2.07	-.14	-6.59	-1.15
30 years: 1999-2028 . . .	1.92	2.11	-.19	-9.00	-1.54
35 years: 1999-2033 . . .	1.91	2.13	-.22	-10.46	-1.92
40 years: 1999-2038 . . .	1.90	2.15	-.25	-11.48	-2.31
45 years: 1999-2043 . . .	1.90	2.17	-.27	-12.37	-2.69
50 years: 1999-2048 . . .	1.89	2.18	-.29	-13.26	-3.08
55 years: 1999-2053 . . .	1.89	2.20	-.31	-14.07	-3.46
60 years: 1999-2058 . . .	1.89	2.22	-.33	-14.75	-3.85
65 years: 1999-2063 . . .	1.89	2.23	-.34	-15.28	-4.23
70 years: 1999-2068 . . .	1.89	2.24	-.35	-15.71	-4.62
75 years: 1999-2073 . . .	1.88	2.25	-.36	-16.10	-5.00
OASDI:					
10 years: 1999-2008 . . .	15.03	12.22	2.82	23.06	.00
15 years: 1999-2013 . . .	14.32	12.22	2.10	17.17	-.38
20 years: 1999-2018 . . .	13.99	12.55	1.43	11.41	-.77
25 years: 1999-2023 . . .	13.81	13.04	.77	5.92	-1.15
30 years: 1999-2028 . . .	13.70	13.54	.17	1.23	-1.54
35 years: 1999-2033 . . .	13.64	13.98	-.34	-2.44	-1.92
40 years: 1999-2038 . . .	13.59	14.33	-.73	-5.13	-2.31
45 years: 1999-2043 . . .	13.56	14.59	-1.03	-7.06	-2.69
50 years: 1999-2048 . . .	13.54	14.80	-1.26	-8.53	-3.08
55 years: 1999-2053 . . .	13.52	14.98	-1.46	-9.74	-3.46
60 years: 1999-2058 . . .	13.51	15.14	-1.64	-10.80	-3.85
65 years: 1999-2063 . . .	13.50	15.30	-1.80	-11.74	-4.23
70 years: 1999-2068 . . .	13.49	15.43	-1.94	-12.56	-4.62
75 years: 1999-2073 . . .	13.49	15.56	-2.07	-13.29	-5.00

Note: Totals do not necessarily equal the sums of rounded components.

Figure II.F4.—Comparison of Estimated Long-Range Actuarial Balances With the Minimum Allowable for Close Actuarial Balance, Alternative II by Trust Fund



d. Income and Cost Rates by Component

Annual income rates and their components are shown in table II.F17 for each alternative set of assumptions. The annual income rates reflect the scheduled payroll tax rates and the projected income from the taxation of benefits expressed as a percentage of taxable payroll. (Income from taxation of benefits reflects changes in the cost rates and the fact that benefit-taxation threshold amounts are not indexed.)

Summarized income and cost rates, along with their components, are presented in table II.F18 for 25-year, 50-year, and 75-year valuation periods. Summarized income rates include the starting trust fund balance in addition to the components included in the annual income rates. The summarized cost rates include the cost of reaching and maintaining an ending trust fund target of 100 percent of annual expenditures by the end of the period in addition to the expenditures included in the annual cost rates.

It may be noted that the payroll tax income expressed as a percentage of taxable payroll is slightly smaller than the actual tax rates in effect for each period. This results from the fact that all OASDI income and outgo amounts presented in this report are computed on a cash basis,

i.e., amounts are attributed to the year in which they are actually received by, or expended from, the fund, while taxable payroll is allocated to the year in which earnings are paid. Because earnings are paid to workers before the corresponding payroll taxes are credited to the funds, payroll tax income for a particular year reflects a combination of the taxable payrolls from that year and from prior years, when payroll was smaller. Dividing payroll tax income by taxable payroll for a particular year, or period of years, will thus generally result in an income rate that is slightly less than the applicable tax rate for the period.

Table II.F17.—Components of Annual Income Rates by Trust Fund and Alternative, Calendar Years 1999-2075

[As a percentage of taxable payroll]

	OASI			DI			Combined		
Calendar year	Payroll tax	Taxation of benefits	Total	Payroll tax	Taxation of benefits	Total	Payroll tax	Taxation of benefits	Total
Intermediate:									
1999	10.70	0.28	10.98	1.70	0.02	1.72	12.40	0.30	12.70
2000	10.60	.23	10.83	1.80	.02	1.82	12.40	.25	12.65
2001	10.60	.26	10.86	1.80	.02	1.82	12.40	.27	12.67
2002	10.60	.26	10.86	1.80	.02	1.82	12.40	.28	12.68
2003	10.60	.26	10.86	1.80	.02	1.82	12.40	.28	12.68
2004	10.60	.27	10.87	1.80	.02	1.82	12.40	.29	12.69
2005	10.60	.28	10.88	1.80	.02	1.82	12.40	.30	12.70
2006	10.60	.28	10.88	1.80	.02	1.82	12.40	.31	12.71
2007	10.60	.29	10.89	1.80	.02	1.82	12.40	.31	12.71
2008	10.60	.30	10.90	1.80	.03	1.83	12.40	.33	12.73
2010	10.60	.32	10.92	1.80	.03	1.83	12.40	.35	12.75
2015	10.60	.39	10.99	1.80	.03	1.83	12.40	.42	12.82
2020	10.60	.48	11.08	1.80	.03	1.83	12.40	.51	12.91
2025	10.60	.58	11.18	1.80	.03	1.83	12.40	.61	13.01
2030	10.60	.65	11.25	1.80	.04	1.84	12.40	.69	13.09
2035	10.60	.71	11.31	1.80	.04	1.84	12.40	.75	13.15
2040	10.60	.73	11.33	1.80	.04	1.84	12.40	.77	13.17
2045	10.60	.75	11.35	1.80	.04	1.84	12.40	.79	13.19
2050	10.60	.77	11.37	1.80	.04	1.84	12.40	.82	13.22
2055	10.60	.80	11.40	1.80	.05	1.85	12.40	.85	13.25
2060	10.60	.84	11.44	1.80	.05	1.85	12.40	.89	13.29
2065	10.60	.87	11.47	1.80	.05	1.85	12.40	.92	13.32
2070	10.60	.89	11.49	1.80	.05	1.85	12.40	.94	13.34
2075	10.60	.91	11.51	1.80	.05	1.85	12.40	.96	13.36

Table II.F17.—Components of Annual Income Rates by Trust Fund and Alternative, Calendar Years 1999-2075 (Cont.)

[As a percentage of taxable payroll]

	OASI			DI			Combined		
Calendar year	Payroll tax	Taxation of benefits	Total	Payroll tax	Taxation of benefits	Total	Payroll tax	Taxation of benefits	Total
Low Cost:									
1999	10.70	0.28	10.98	1.70	0.02	1.72	12.40	0.30	12.70
2000	10.60	.22	10.82	1.80	.02	1.82	12.40	.23	12.63
2001	10.60	.25	10.85	1.80	.02	1.82	12.40	.27	12.67
2002	10.60	.25	10.85	1.80	.02	1.82	12.40	.27	12.67
2003	10.60	.25	10.85	1.80	.02	1.82	12.40	.27	12.67
2004	10.60	.26	10.86	1.80	.02	1.82	12.40	.27	12.67
2005	10.60	.26	10.86	1.80	.02	1.82	12.40	.28	12.68
2006	10.60	.27	10.87	1.80	.02	1.82	12.40	.28	12.68
2007	10.60	.27	10.87	1.80	.02	1.82	12.40	.29	12.69
2008	10.60	.28	10.88	1.80	.02	1.82	12.40	.30	12.70
2010	10.60	.29	10.89	1.80	.02	1.82	12.40	.31	12.71
2015	10.60	.35	10.95	1.80	.02	1.82	12.40	.37	12.77
2020	10.60	.42	11.02	1.80	.02	1.82	12.40	.45	12.85
2025	10.60	.50	11.10	1.80	.03	1.83	12.40	.52	12.92
2030	10.60	.55	11.15	1.80	.03	1.83	12.40	.58	12.98
2035	10.60	.59	11.19	1.80	.03	1.83	12.40	.61	13.01
2040	10.60	.59	11.19	1.80	.03	1.83	12.40	.62	13.02
2045	10.60	.59	11.19	1.80	.03	1.83	12.40	.62	13.02
2050	10.60	.60	11.20	1.80	.03	1.83	12.40	.63	13.03
2055	10.60	.61	11.21	1.80	.03	1.83	12.40	.64	13.04
2060	10.60	.63	11.23	1.80	.03	1.83	12.40	.66	13.06
2065	10.60	.63	11.23	1.80	.03	1.83	12.40	.66	13.06
2070	10.60	.63	11.23	1.80	.03	1.83	12.40	.67	13.07
2075	10.60	.64	11.24	1.80	.03	1.83	12.40	.67	13.07
High Cost:									
1999	10.70	.28	10.98	1.70	.02	1.72	12.40	.30	12.70
2000	10.60	.27	10.87	1.80	.02	1.82	12.40	.28	12.68
2001	10.60	.26	10.86	1.80	.02	1.82	12.40	.28	12.68
2002	10.60	.26	10.86	1.80	.02	1.82	12.40	.28	12.68
2003	10.60	.29	10.89	1.80	.02	1.82	12.40	.31	12.71
2004	10.60	.29	10.89	1.80	.02	1.82	12.40	.31	12.71
2005	10.60	.29	10.89	1.80	.02	1.82	12.40	.32	12.72
2006	10.60	.30	10.90	1.80	.03	1.83	12.40	.33	12.73
2007	10.60	.31	10.91	1.80	.03	1.83	12.40	.34	12.74
2008	10.60	.33	10.93	1.80	.03	1.83	12.40	.36	12.76
2010	10.60	.35	10.95	1.80	.03	1.83	12.40	.38	12.78
2015	10.60	.44	11.04	1.80	.04	1.84	12.40	.48	12.88
2020	10.60	.56	11.16	1.80	.04	1.84	12.40	.60	13.00
2025	10.60	.67	11.27	1.80	.05	1.85	12.40	.72	13.12
2030	10.60	.77	11.37	1.80	.05	1.85	12.40	.82	13.22
2035	10.60	.86	11.46	1.80	.05	1.85	12.40	.91	13.31
2040	10.60	.91	11.51	1.80	.05	1.85	12.40	.96	13.36
2045	10.60	.96	11.56	1.80	.06	1.86	12.40	1.01	13.41
2050	10.60	1.01	11.61	1.80	.06	1.86	12.40	1.07	13.47
2055	10.60	1.08	11.68	1.80	.07	1.87	12.40	1.14	13.54
2060	10.60	1.16	11.76	1.80	.07	1.87	12.40	1.22	13.62
2065	10.60	1.23	11.83	1.80	.07	1.87	12.40	1.30	13.70
2070	10.60	1.30	11.90	1.80	.07	1.87	12.40	1.37	13.77
2075	10.60	1.36	11.96	1.80	.07	1.87	12.40	1.43	13.83

Note: Totals do not necessarily equal the sums of rounded component.

Table II.F18.—Components of Summarized Income Rates and Cost Rates by Trust Fund and Alternative, Calendar Years 1999-2073

[As a percentage of taxable payroll]

	Income rate				Cost rate		
Valuation period	Payroll tax	Taxation of benefits	Beginning fund balance	Total	Disburse-ments	Ending fund balance	Total
OASI:							
Intermediate:							
1999-2023	10.61	0.35	0.92	11.88	10.51	0.46	10.97
1999-2048	10.60	.48	.56	11.65	12.42	.20	12.62
1999-2073	10.60	.55	.45	11.60	13.20	.11	13.31
Low Cost:							
1999-2023	10.61	.32	.90	11.82	9.73	.41	10.14
1999-2048	10.60	.41	.55	11.56	11.05	.16	11.21
1999-2073	10.60	.46	.44	11.49	11.34	.08	11.42
High Cost:							
1999-2023	10.60	.39	.93	11.92	11.31	.52	11.83
1999-2048	10.60	.56	.56	11.72	13.98	.25	14.23
1999-2073	10.60	.68	.45	11.73	15.56	.15	15.71
DI:							
Intermediate:							
1999-2023	1.80	.03	.11	1.93	1.99	.08	2.07
1999-2048	1.80	.03	.07	1.89	2.15	.03	2.18
1999-2073	1.80	.03	.05	1.88	2.23	.02	2.25
Low Cost:							
1999-2023	1.80	.02	.11	1.92	1.65	.06	1.70
1999-2048	1.80	.02	.06	1.88	1.69	.02	1.71
1999-2073	1.80	.02	.05	1.87	1.70	.01	1.71
High Cost:							
1999-2023	1.79	.03	.11	1.94	2.39	.10	2.49
1999-2048	1.80	.04	.07	1.90	2.69	.04	2.73
1999-2073	1.80	.04	.05	1.90	2.86	.02	2.88
OASDI:							
Intermediate:							
1999-2023	12.40	.37	1.03	13.81	12.50	.54	13.04
1999-2048	12.40	.51	.63	13.54	14.57	.23	14.80
1999-2073	12.40	.58	.51	13.49	15.43	.12	15.56
Low Cost:							
1999-2023	12.40	.34	1.01	13.74	11.38	.47	11.84
1999-2048	12.40	.44	.61	13.45	12.74	.18	12.92
1999-2073	12.40	.48	.49	13.37	13.04	.09	13.14
High Cost:							
1999-2023	12.40	.42	1.04	13.85	13.70	.62	14.32
1999-2048	12.40	.60	.62	13.63	16.67	.29	16.96
1999-2073	12.40	.72	.50	13.62	18.43	.17	18.60

Note: Totals do not necessarily equal the sums of rounded components.

e. Comparison of Workers to Beneficiaries

The primary reason that the estimated OASDI cost rate increases rapidly after 2010 is that the number of beneficiaries is projected to increase more rapidly than the number of covered workers. This occurs because the relatively large number of persons born during the period of high fertility rates from the end of World War II through the mid-1960s will reach retirement age, and begin to receive benefits, while the relatively small number of persons born during the subsequent period of low fertility rates will comprise the labor force. A com-

parison of the numbers of covered workers and beneficiaries is shown in table II.F19.

Table II.F19.—Comparison of OASDI Covered Workers and Beneficiaries by Alternative, Calendar Years 1945-2075

Calendar year	Covered workers [1] (in thousands)	Beneficiaries [2] (in thousands)			Covered workers per OASDI beneficiary	Beneficiaries per 100 covered workers
		OASI	DI	OASDI		
Historical data:						
1945	46,390	1,106	—	1,106	41.9	2
1950	48,280	2,930	—	2,930	16.5	6
1955	65,200	7,563	—	7,563	8.6	12
1960	72,530	13,740	522	14,262	5.1	20
1965	80,680	18,509	1,648	20,157	4.0	25
1970	93,090	22,618	2,568	25,186	3.7	27
1975	100,200	26,998	4,125	31,123	3.2	31
1980	113,656	30,384	4,734	35,118	3.2	31
1985	120,565	32,776	3,874	36,650	3.3	30
1986	123,400	33,350	3,972	37,322	3.3	30
1987	126,287	33,917	4,034	37,952	3.3	30
1988	130,142	34,343	4,077	38,421	3.4	30
1989	132,493	34,754	4,105	38,859	3.4	29
1990	133,692	35,266	4,204	39,470	3.4	30
1991	132,999	35,785	4,388	40,172	3.3	30
1992	133,930	36,314	4,716	41,029	3.3	31
1993	136,137	36,758	5,083	41,840	3.3	31
1994	138,212	37,082	5,435	42,516	3.3	31
1995	141,057	37,376	5,731	43,108	3.3	31
1996	143,515	37,521	5,977	43,498	3.3	30
1997	146,719	37,705	6,087	43,793	3.4	30
1998	148,459	37,826	6,250	44,076	3.4	30
Intermediate:						
1999	150,038	38,007	6,451	44,458	3.4	30
2000	151,105	38,247	6,668	44,914	3.4	30
2005	157,082	40,171	8,128	48,299	3.3	31
2010	162,882	43,825	9,489	53,314	3.1	33
2015	166,503	49,815	10,533	60,348	2.8	36
2020	168,480	57,145	11,131	68,276	2.5	41
2025	169,509	64,071	11,654	75,724	2.2	45
2030	170,705	69,505	11,849	81,354	2.1	48
2035	172,770	72,901	11,836	84,737	2.0	49
2040	174,887	74,027	12,030	86,057	2.0	49
2045	176,528	74,622	12,575	87,197	2.0	49
2050	177,798	75,759	12,937	88,696	2.0	50
2055	178,773	77,830	13,211	91,041	2.0	51
2060	179,693	80,288	13,229	93,517	1.9	52
2065	180,640	82,348	13,271	95,619	1.9	53
2070	181,546	84,039	13,425	97,463	1.9	54
2075	182,304	85,622	13,631	99,254	1.8	54

Table II.F19.—Comparison of OASDI Covered Workers and Beneficiaries by Alternative, Calendar Years 1945-2075 (Cont.)

Calendar year	Covered workers [1] (in thousands)	Beneficiaries [2] (in thousands) OASI	DI	OASDI	Covered workers per OASDI beneficiary	Beneficiaries per 100 covered workers
Low Cost:						
1999	150,521	38,004	6,420	44,424	3.4	30
2000	152,163	38,232	6,573	44,804	3.4	29
2005	159,555	39,983	7,583	47,565	3.4	30
2010	166,337	43,381	8,351	51,733	3.2	31
2015	170,938	49,054	8,818	57,871	3.0	34
2020	174,076	55,992	9,074	65,066	2.7	37
2025	176,695	62,446	9,384	71,830	2.5	41
2030	180,059	67,264	9,512	76,776	2.3	43
2035	184,908	69,959	9,527	79,486	2.3	43
2040	190,472	70,484	9,739	80,223	2.4	42
2045	196,009	70,735	10,235	80,970	2.4	41
2050	201,515	71,681	10,615	82,295	2.4	41
2055	207,210	73,657	10,962	84,619	2.4	41
2060	213,379	75,971	11,166	87,137	2.4	41
2065	220,045	77,922	11,452	89,374	2.5	41
2070	226,909	79,762	11,874	91,636	2.5	40
2075	233,734	81,920	12,353	94,273	2.5	40
High Cost:						
1999	149,906	38,012	6,506	44,518	3.4	30
2000	149,321	38,265	6,841	45,106	3.3	30
2005	154,272	40,366	8,991	49,358	3.1	32
2010	159,802	44,310	10,640	54,950	2.9	34
2015	162,674	50,639	12,266	62,905	2.6	39
2020	163,772	58,400	13,210	71,610	2.3	44
2025	163,544	65,888	13,953	79,840	2.0	49
2030	162,993	72,116	14,219	86,335	1.9	53
2035	162,795	76,485	14,179	90,664	1.8	56
2040	162,040	78,579	14,356	92,935	1.7	57
2045	160,417	79,947	14,954	94,901	1.7	59
2050	158,190	81,727	15,286	97,013	1.6	61
2055	155,386	84,341	15,454	99,795	1.6	64
2060	152,239	87,379	15,217	102,595	1.5	67
2065	148,913	90,395	14,851	105,246	1.4	71
2070	145,525	91,888	14,670	106,558	1.4	73
2075	142,096	93,279	14,491	107,770	1.3	76

[1] Workers who are paid at some time during the year for employment on which OASDI taxes are due.

[2] Beneficiaries with monthly benefits in current-payment status as of June 30.

Notes:

1. The numbers of beneficiaries do not include certain uninsured persons, most of whom both attained age 72 before 1968 and have fewer than 3 quarters of coverage, in which cases the costs are reimbursed by the general fund of the Treasury. The number of such uninsured persons was 303 as of June 30, 1998, and is estimated to be fewer than 100 by the turn of the century. Totals do not necessarily equal the sums of rounded components.

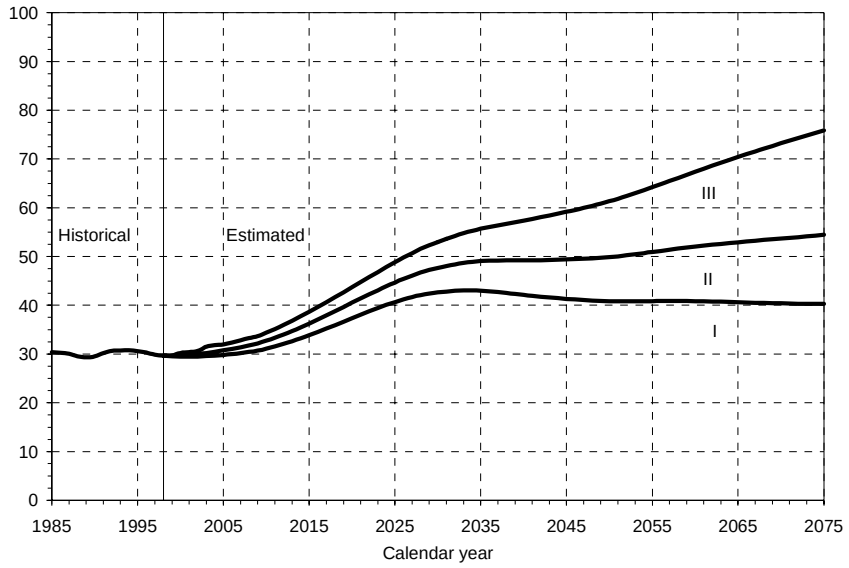
2. Historical covered worker data are subject to revision.

Table II.F19 shows that the number of covered workers per beneficiary, which was about 3.4 in 1998, is estimated to decline in the future. Based on the low cost alternative I, for which high fertility rates and small reductions in death rates are assumed, the ratio declines to 2.3 by 2030, and then rises back to a level of 2.4 by 2040, and 2.5 by 2065. Based on the high cost alternative III, for which low fertility rates and substantial reductions in death rates are assumed, the decline is much greater, reaching 1.9 by 2030, and 1.3 workers per

beneficiary by 2075. Based on the intermediate alternative II, the ratio declines to 2.1 by 2030, and 1.8 workers per beneficiary by 2075.

The impact of the demographic shifts under the three alternatives on the OASDI cost rates is better understood by considering the projected number of beneficiaries per 100 workers. As compared to the 1998 level of 30 beneficiaries per 100 covered workers, this ratio is estimated to rise by 2075 to significantly higher levels, which are 40 under alternative I, 54 under alternative II, and 76 under alternative III. The significance of these numbers can be seen by comparing figure II.F3 to figure II.F5.

Figure II.F5.—Ratios of Estimated OASDI Beneficiaries Per 100 Covered Workers by Alternative, Calendar Years 1985-2075



For each alternative, the shape of the curve in figure II.F5, which shows beneficiaries per 100 covered workers, is strikingly similar to that of the corresponding cost-rate curve in figure II.F3, thereby emphasizing the extent to which the cost of the OASDI program as a percentage of taxable payroll is determined by the age distribution of the population. Because the cost rate is basically 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 (and because average benefits rise at about the same rate as average earnings), it is to be expected that the pattern of the annual cost rates is similar to that of the annual ratios of beneficiaries to

workers. A graphical presentation of covered workers per beneficiary is shown in figure I.G2 of the Overview.

f. Trust Fund Ratios

Table II.F20 shows, by alternative, the estimated trust fund ratios (without regard to advance tax transfers that would be effected after the end of the 10-year, short-range period) for the separate and combined OASI and DI Trust Funds. Also shown in this table is the first year in which a fund is estimated to be exhausted, reflecting the effect of the provision for advance tax transfers. The patterns of the combined fund ratios, over the 75-year period, are shown graphically in figure II.F6 for all three sets of assumptions.

Based on alternative II, the OASI trust fund ratio rises steadily from 200 percent at the beginning of 1999, reaching a peak of 415 percent at the beginning of 2014. This increase in the OASI trust fund ratio results from the fact that the annual income rate (excluding interest) exceeds annual outgo for several years (see table II.F13). Thereafter, the OASI trust fund ratio declines steadily, with the OASI Trust Fund becoming exhausted in 2036. The DI trust fund ratio follows a pattern that is similar but unfolds more rapidly. The DI trust fund ratio is estimated to rise from 153 percent at the beginning of 1999 to a peak of 213 percent in 2004, and to decline thereafter until becoming exhausted in 2020.

The trust fund ratio for the hypothetical combined OASI and DI Trust Funds rises from 194 percent for 1999 to a peak of 364 percent at the beginning of 2013. Thereafter, the ratio declines, with the combined funds becoming exhausted in 2034. Based on the intermediate estimates in last year's report, the peak fund ratio for the combined funds was estimated to be 324 percent in 2012 and the year of exhaustion was estimated to be 2032.

The trust fund ratio for the combined OASDI program begins to decline in 2014, the same year annual expenditures begin to exceed noninterest income. Although the dollar amount of assets will continue to rise through the beginning of 2022, because interest income more than offsets the shortfall in noninterest income, revenue from the general fund of the Treasury will be needed in increasingly large amounts, beginning in 2014, to redeem the trust funds' special public-debt obligations due to the cash-flow shortfall. This will differ from the experience of recent years when the trust funds have been net

lenders to the general fund. The change in the cash flow between the trust funds and the general fund is expected to have important public policy and economic implications that go well beyond the operation of the OASDI program itself. Discussion of these issues is outside the scope of this report.

Based on the low cost alternative I assumptions, the trust fund ratio for the DI program increases throughout the long-range projection period, reaching the extremely high level of 1,439 percent by 2073. At the end of the long-range period, the DI trust fund ratio is rising by 26 percentage points per year. For the OASI program, the trust fund ratio rises to a peak of 550 percent in 2017, dropping thereafter to a level of 191 percent by 2073. At the end of the period the OASI trust fund ratio is declining by 5 percentage points per year. For the combined OASDI program, trust fund ratios follow a pattern similar to that for OASI, peaking at 529 percent in 2018, and then falling to 346 percent by 2073. However, at the end of the long-range period, the OASDI trust fund ratio is nearly stable. A stable trust fund ratio at the end of the valuation period indicates that the actuarial balance for Trustees Reports in subsequent years can be expected to remain about the same as long as assumptions are realized.

In contrast, under the high cost alternative III, the OASI trust fund ratio is estimated to peak at 318 percent in 2011, thereafter declining to fund exhaustion by the end of 2028. The DI trust fund ratio is estimated to peak at 166 percent in 2001, thereafter declining to fund exhaustion by the end of 2011. The combined OASDI trust fund ratio is estimated to rise to a peak of 265 percent in 2008, declining thereafter to fund exhaustion by the end of 2024.

The fact that the financing for the DI program is relatively more adequate compared to the financing for the OASI program under low cost assumptions, but relatively less adequate under high cost assumptions is due to the tax rate reallocation enacted in 1994. This reallocation roughly equalized the size of the long-range actuarial deficits of the OASI and DI programs in relation to the summarized cost rates under intermediate assumptions. A smaller reallocation would have been needed to equalize the deficits in this manner under low cost alternative I assumptions, while a larger reallocation would have been needed under high cost alternative III assumptions.

Thus, because of the high ultimate cost rates that are projected under all but the most optimistic assumptions, income will eventually need

to be increased and/or program costs will need to be reduced in order to prevent the trust funds from becoming exhausted.

Even under the high cost assumptions, however, the combined OASI and DI funds on hand plus their estimated future income would be able to cover their combined expenditures for 25 years into the future (until 2024). Under the alternative II assumptions the combined starting funds plus estimated future income would be able to cover expenditures for about 35 years into the future (until 2034). The program would be able to cover expenditures for the indefinite future under the more optimistic assumptions in alternative I. In the 1998 report, the combined trust funds were projected to be exhausted in 2022 under alternative III and in 2032 under alternative II.

Table II.F20.—Estimated Trust Fund Ratios by Trust Fund and Alternative, Calendar Years 1999-2075

[In percent]

	Intermediate			Low Cost			High Cost		
Calendar year	OASI	DI	Combined	OASI	DI	Combined	OASI	DI	Combined
1999	200	153	194	200	155	194	200	150	193
2000	224	170	217	226	176	219	222	160	213
2001	246	188	238	251	202	244	238	166	227
2002	267	202	257	276	225	269	250	166	237
2003	287	210	276	303	244	294	261	160	245
2004	307	213	292	329	260	319	272	149	251
2005	325	212	306	355	272	343	282	134	256
2006	342	207	320	383	282	367	292	118	261
2007	358	198	331	410	289	390	301	98	264
2008	374	188	342	436	295	413	309	77	265
2010	397	165	356	480	311	453	317	27	262
2015	412	92	359	545	364	519	294	(1)	217
2020	364	5	309	540	429	525	212	(1)	125
2025	277	(1)	223	503	485	501	90	(1)	(1)
2030	167	(1)	113	453	544	464	(1)	(1)	(1)
2035	38	(1)	(1)	403	634	429	(1)	(1)	(1)
2040	(1)	(1)	(1)	365	726	407	(1)	(1)	(1)
2045	(1)	(1)	(1)	338	800	394	(1)	(1)	(1)
2050	(1)	(1)	(1)	315	883	385	(1)	(1)	(1)
2055	(1)	(1)	(1)	290	977	375	(1)	(1)	(1)
2060	(1)	(1)	(1)	261	1,100	364	(1)	(1)	(1)
2065	(1)	(1)	(1)	233	1,234	355	(1)	(1)	(1)
2070	(1)	(1)	(1)	206	1,363	349	(1)	(1)	(1)
2075	(1)	(1)	(1)	180	1,492	345	(1)	(1)	(1)
Trust fund is estimated to be exhausted in:	2036	2020	2034	(2)	(2)	(2)	2028	2011	2024

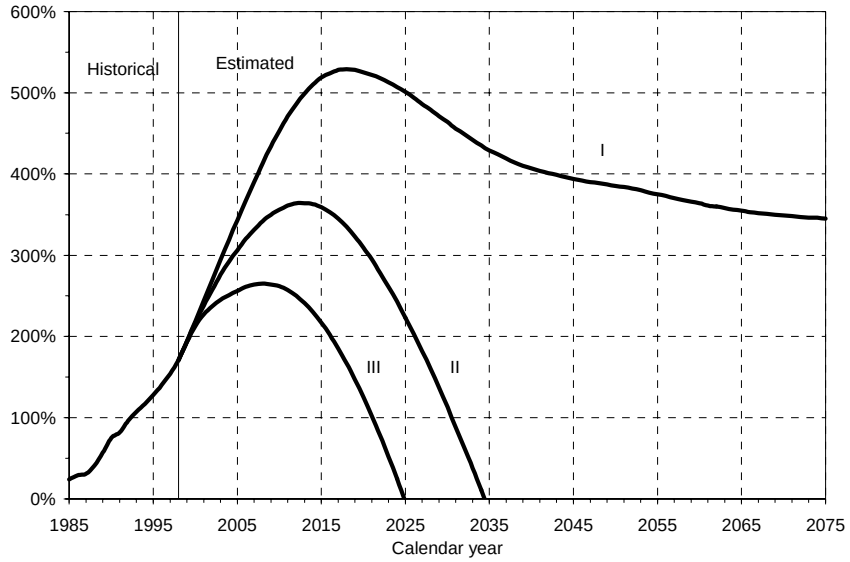
[1] The trust fund is estimated to have been exhausted by the beginning of this year. The last line of the table shows the specific year of trust fund exhaustion.

[2] The fund is not estimated to be exhausted within the projection period.

Note: See Glossary for definition of trust fund ratio. The combined ratios shown for years after either the OASI or the DI fund is estimated to be exhausted are theoretical and are shown for informational purposes only.

A graphic illustration of the trust fund ratios for the combined trust funds is shown in figure II.F6 for each of the alternative sets of assumptions.

Figure II.F6.—Estimated Trust Fund Ratios, for OASI and DI Trust Funds Combined, by Alternative, Calendar Years 1985-2075
[Assets as a percentage of annual expenditures]



g. Reasons for Change in Actuarial Balance From Last Report

Reasons for changes from last year's report to this report in the long-range actuarial balance under the intermediate assumptions are itemized in table II.F21. Also shown are the estimated effects associated with each reason for change.

Table II.F21.—Change in Actuarial Balance Over the Next 75 Years Based on Intermediate Assumptions by Trust Fund and Reason for Change

[As a percentage of taxable payroll]

Item	OASI	DI	Combined
Shown in last year's report:			
Income rate	11.57	1.88	13.45
Cost rate	13.38	2.26	15.64
Actuarial balance	-1.81	-.38	-2.19
Changes in actuarial balance due to changes in:			
Legislation / Regulation	--	--	--
Valuation period	-.07	-.01	-.08
Demographic assumptions	+.03	.00	+.03
Economic assumptions	+.13	+.02	+.15
Disability assumptions	.00	.00	.00
Methods	+.02	.00	+.02
Total change in actuarial balance	+.10	+.02	+.12
Shown in this report:			
Actuarial balance	-1.70	-.36	-2.07
Income rate	11.60	1.88	13.49
Cost rate	13.31	2.25	15.56

Note: Totals do not necessarily equal the sums of rounded components.

No legislative change was enacted since last year's report, nor was any regulatory change that would affect the estimated long-range OASDI actuarial balance.

In changing from the valuation period of last year's report, which was 1998-2072, to the valuation period of this report, 1999-2073, the relatively large negative annual balance for 2073 is included. This results in a larger long-range actuarial deficit. (Note that the fund balance at the end of 1998, i.e., at the beginning of the projection period, is included in the 75-year actuarial balance.)

Two demographic assumptions were modified: (1) projected fertility rates were increased slightly through 2022, consistent with recent data that show higher birth rates than did earlier estimates; and (2) projected mortality rates were decreased slightly (mainly at younger ages), reflecting the latest data, which were, on balance, lower than expected for 1997. These modifications result in a net increase in the long-range actuarial balance.

Several significant changes were made to economic assumptions for this year's report (see discussion in section II.D1). In total, these changes reduced the actuarial deficit by 0.15 percent of taxable payroll. Recent economic performance and changes in the short-range economic assumptions accounted for a reduction of 0.03 percent of taxable payroll, while changes in the ultimate economic assumptions accounted for the remaining reduction of 0.12 percent of taxable payroll.

Disabled worker incidence rates experienced since last year's report have been somewhat higher than estimated. However, ultimate incidence rates are projected to reach the same level assumed in last year's report. This modification results in a negligible change in the long-range actuarial balance for the DI program.

Several changes in methods were made for this year's report. The method for estimating earnings levels of high earners was improved for long-range projections, reducing the actuarial balance somewhat. However, several other changes resulted in a small improvement in the actuarial balance. Labor force participation rates were reestimated, resulting in increases, particularly at higher ages. Also, recent levels of revenue from taxation of benefits have been higher, and numbers of beneficiaries somewhat lower than estimated for last year's report. The net effect of all changes in methods is a small improvement in the actuarial balance.

The cost of the OASDI program has been discussed in this section in relation to taxable payroll, which is a program-related concept that is very useful in analyzing the financial status of the OASDI program. The cost can also be discussed in relation to broader economic concepts, such as the GDP. OASDI outlays generally rise from a little less than 5 percent of GDP currently to about 6.9 percent of GDP by the end of the 75-year projection period under alternative II. Discussion of both the cost and the taxable payroll of the OASDI program in relation to GDP is presented in appendix C.

G. LONG-RANGE SENSITIVITY ANALYSIS

This section presents estimates which illustrate the sensitivity of the long-range actuarial balance of the OASDI program to changes in selected individual assumptions. The estimates based on the three alternative sets of assumptions (see sections II.D and II.F2) illustrate the effects of varying all of the principal assumptions simultaneously in order to portray a generally more optimistic or pessimistic future, in terms of the financial status of the OASDI program. In the sensitivity analysis presented in this section, the intermediate alternative II is used as the reference point, and one assumption at a time is varied within that alternative. Similar variations in the selected assumptions within the other alternatives would result in similar relative variations in the long-range estimates.

Each table that follows shows the effects of changing a particular assumption on the OASDI summarized income rates, summarized cost rates, and actuarial balances (as defined earlier in this report) for 25-year, 50-year, and 75-year valuation periods. Because the income rate varies only slightly with changes in assumptions, it is not considered in the discussion of the tables. The change in each of the actuarial balances is approximately equal to the change in the corresponding cost rate, but in the opposite direction.

1. Total Fertility Rate

Table II.G1 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about the ultimate total fertility rate. These assumptions are that the ultimate total fertility rate will be 1.6, 1.9, and 2.2 children per woman as assumed for alternatives III, II, and I, respectively. The rate is assumed to change gradually from its current level and to reach the various ultimate values in 2023.

Table II.G1.—Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates With Various Fertility Assumptions

[As a percentage of taxable payroll]

Valuation period	Ultimate total fertility rate [1]		
	1.6	1.9	2.2
Summarized income rate:			
25-year: 1999-2023	13.81	13.81	13.81
50-year: 1999-2048	13.55	13.54	13.53
75-year: 1999-2073	13.52	13.49	13.46
Summarized cost rate:			
25-year: 1999-2023	13.01	13.04	13.06
50-year: 1999-2048	14.90	14.80	14.72
75-year: 1999-2073	15.94	15.56	15.20
Actuarial balance:			
25-year: 1999-2023	+.79	+.77	+.75
50-year: 1999-2048	-1.35	-1.26	-1.18
75-year: 1999-2073	-2.42	-2.07	-1.74

[1] The total fertility rate for any year is the average number of children who would be born to a woman in her lifetime if she were to experience the birth rates by age observed in, or assumed for, the selected year, and if she were to survive the entire childbearing period. The ultimate total fertility rate is assumed to be reached in 2023.

For the 25-year period, the cost rate for the three fertility assumptions varies by only about 0.05 percent of taxable payroll. In contrast, the 75-year cost rate varies over a wide range, decreasing from 15.94 to 15.20 percent, as the assumed ultimate total fertility rate increases from 1.6 to 2.2. Similarly, while the 25-year actuarial balance varies by only 0.04 percent of taxable payroll, the 75-year actuarial balance varies over a much wider range, from -2.42 to -1.74 percent.

During the 25-year period, the very slight effect of changes in fertility on the working population is more than offset by increases in the number of child beneficiaries. Hence, the program cost slightly increases with higher fertility. For the 75-year long-range period, however, changes in fertility have a relatively greater impact on the labor force than on the beneficiary population. As a result, an increase in fertility significantly reduces the cost rate. Each increase of 0.1 in the ultimate total fertility rate increases the long-range actuarial balance by about 0.11 percent of taxable payroll.

2. Death Rates

Table II.G2 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about future reductions in death rates. The analysis was developed by varying the percentage decrease assumed to occur during 1998-2073 in the death rates by age, sex, and cause of death. The decreases assumed for this period, summarized as changes in the age-

sex-adjusted death rate, are about 16 percent, 34 percent, and 54 percent as assumed for alternatives I, II, and III, respectively. It should be noted that these reductions do not apply uniformly to all ages, as some variation by age was assumed (see section II.H1) consistent with the objective of selecting assumptions for alternatives I and III that are relatively more optimistic and more pessimistic, respectively, in terms of the financing of the OASDI program.

Table II.G2.—Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates With Various Death-Rate Assumptions

[As a percentage of taxable payroll]

Valuation period	Reduction in death rates [1]		
	16 percent	34 percent	54 percent
Summarized income rate:			
25-year: 1999-2023	13.80	13.81	13.81
50-year: 1999-2048	13.52	13.54	13.56
75-year: 1999-2073	13.46	13.49	13.52
Summarized cost rate:			
25-year: 1999-2023	12.87	13.04	13.21
50-year: 1999-2048	14.37	14.80	15.26
75-year: 1999-2073	14.93	15.56	16.27
Actuarial balance:			
25-year: 1999-2023	+.94	+.77	+.61
50-year: 1999-2048	-.85	-1.26	-1.71
75-year: 1999-2073	-1.47	-2.07	-2.75

[1] The measure of the reduction in death rates is the decrease in the age-sex-adjusted death rate during 1998-2073.

The variation in cost for the 25-year period is less pronounced than the variation for the 75-year period because the decreases in death rates are assumed to occur gradually. The 25-year cost rate increases from 12.87 percent (for 16-percent lower ultimate death rates) to 13.21 percent (for 54-percent lower ultimate rates). The 75-year cost rate increases from 14.93 to 16.27 percent. The actuarial balance decreases from +0.94 to +0.61 percent for the 25-year period, and from -1.47 to -2.75 percent for the 75-year period.

Lower death rates cause both the income (as well as taxable payroll) and the outgo of the OASDI program to be higher than they would otherwise be. The relative increase in outgo, however, exceeds the relative increase in taxable payroll. For any given year, reductions in the death rates for people who have attained the retirement eligibility age of 62 (people whose death rates are the highest) increase the number of retired-worker beneficiaries (and, therefore, the amount of retirement benefits paid) without adding significantly to the number of covered workers (and, therefore, to the taxable payroll). Although reductions for people aged 50 to retirement eligibility age do result in

significant increases to the taxable payroll, those increases are not large enough to offset the sum of the additional retirement benefits mentioned above and the disability benefits paid to additional beneficiaries in this pre-retirement age group. At ages under 50, death rates are so low that even substantial reductions would not result in significant increases in the numbers of covered workers or beneficiaries. Consequently, if death rates for all ages are lowered by about the same relative amount, outgo increases at a rate greater than the rate of growth in payroll, thereby resulting in higher cost rates. Each additional 10-percentage-point reduction in the age-sex-adjusted death rate assumed to occur in 1998-2073, relative to the 34-percent reduction assumed for alternative II, decreases the long-range actuarial balance by about 0.34 percent of taxable payroll.

3. Net Immigration

Table II.G3 shows the estimated OASDI income rates, cost rates, and actuarial balances, under alternative II with various assumptions about the magnitude of net immigration. These assumptions are that the annual net immigration will be 750,000 persons, 900,000 persons, and 1,150,000 persons as assumed for alternatives III, II, and I, respectively.

Table II.G3.—Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates With Various Net-Immigration Assumptions

[As a percentage of taxable payroll]

Valuation period	Net immigration per year		
	750,000	900,000	1,150,000
Summarized income rate:			
25-year: 1999-2023	13.82	13.81	13.80
50-year: 1999-2048	13.55	13.54	13.52
75-year: 1999-2073	13.50	13.49	13.47
Summarized cost rate:			
25-year: 1999-2023	13.09	13.04	12.96
50-year: 1999-2048	14.91	14.80	14.64
75-year: 1999-2073	15.68	15.56	15.37
Actuarial balance:			
25-year: 1999-2023	+.73	+.77	+.84
50-year: 1999-2048	-1.36	-1.26	-1.12
75-year: 1999-2073	-2.18	-2.07	-1.90

For all three periods, the cost rate decreases with increasing rates of net immigration. For the 25-year period, the cost rate decreases from 13.09 percent of taxable payroll (for annual net immigration of 750,000 persons) to 12.96 percent (for annual net immigration of

1,150,000 persons). For the 50-year period, it decreases from 14.91 percent to 14.64 percent, and for the 75-year period, it decreases from 15.68 percent to 15.37 percent. The actuarial balance increases from +0.73 to +0.84 percent for the 25-year period, from -1.36 to -1.12 for the 50-year period, and from -2.18 to -1.90 percent for the 75-year period.

The cost rate decreases with increasing rates of net immigration because immigration occurs at relatively young ages, thereby increasing the numbers of covered workers earlier than the numbers of beneficiaries. Each additional group of 100,000 immigrants relative to the 900,000 net immigration assumed for alternative II, increases the long-range actuarial balance by about 0.07 percent of taxable payroll.

4. Real-Wage Differential

Table II.G4 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about the real-wage differential. These assumptions are that the ultimate real-wage differential will be 0.4 percentage point, 0.9 percentage point, and 1.4 percentage points as assumed for alternatives III, II, and I, respectively. In each case, the ultimate annual increase in the CPI is assumed to be 3.3 percent (as assumed for alternative II), yielding ultimate percentage increases in average annual wages in covered employment of 3.7, 4.2, and 4.7 percent under alternatives III, II, and I, respectively.

For the 25-year period, the cost rate decreases from 13.43 percent (for a real-wage differential of 0.4 percentage point) to 12.65 percent (for a differential of 1.4 percentage points). For the 50-year period, it decreases from 15.36 to 14.24 percent, and for the 75-year period it decreases from 16.14 to 14.96 percent. The actuarial balance increases from +0.44 to +1.10 percent for the 25-year period, from -1.75 to -0.78 for the 50-year period, and from -2.57 to -1.55 percent for the 75-year period.

Table II.G4.—Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates With Various Real-Wage Assumptions

[As a percentage of taxable payroll]

Valuation period	Ultimate percentage increase in wages-CPI [1]		
	3.7-3.3	4.2-3.3	4.7-3.3
Summarized income rate:			
25-year: 1999-2023	13.87	13.81	13.75
50-year: 1999-2048	13.62	13.54	13.46
75-year: 1999-2073	13.57	13.49	13.41
Summarized cost rate:			
25-year: 1999-2023	13.43	13.04	12.65
50-year: 1999-2048	15.36	14.80	14.24
75-year: 1999-2073	16.14	15.56	14.96
Actuarial balance:			
25-year: 1999-2023	+.44	+.77	+1.10
50-year: 1999-2048	-1.75	-1.26	-.78
75-year: 1999-2073	-2.57	-2.07	-1.55

[1] The first value in each pair is the assumed ultimate annual percentage increase in average wages in covered employment. The second value is the assumed ultimate annual percentage increase in the Consumer Price Index. The difference between the two values is the real-wage differential.

The cost rate decreases with increasing real-wage differentials, because the higher real-wage levels increase the taxable payroll, while benefit increases are not affected. Although the initial benefit levels are higher because of the higher wages, these increases are more than offset by the increases in the taxable payroll of future workers. Each 0.5-percentage-point increase in the assumed real-wage differential increases the long-range actuarial balance by about 0.51 percent of taxable payroll.

5. Consumer Price Index

Table II.G5 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about the rate of increase for the Consumer Price Index (CPI). These assumptions are that the ultimate annual increase in the CPI will be 2.3 percent, 3.3 percent, and 4.3 percent as assumed for alternatives I, II, and III, respectively. In each case, the ultimate real-wage differential is assumed to be 0.9 percentage point (as assumed for alternative II), yielding ultimate percentage increases in average annual wages in covered employment of 3.2, 4.2, and 5.2 percent under alternatives I, II, and III, respectively.

Table II.G5.—Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates With Various CPI-Increase Assumptions

[As a percentage of taxable payroll]

Valuation period	Ultimate percentage increase in wages-CPI [1]		
	3.2-2.3	4.2-3.3	5.2-4.3
Summarized income rate:			
25-year: 1999-2023	13.83	13.81	13.78
50-year: 1999-2048	13.56	13.54	13.52
75-year: 1999-2073	13.51	13.49	13.47
Summarized cost rate:			
25-year: 1999-2023	13.19	13.04	12.89
50-year: 1999-2048	15.02	14.80	14.59
75-year: 1999-2073	15.80	15.56	15.31
Actuarial balance:			
25-year: 1999-2023	+.64	+.77	+.90
50-year: 1999-2048	-1.46	-1.26	-1.07
75-year: 1999-2073	-2.29	-2.07	-1.84

[1] The first value in each pair is the assumed ultimate annual percentage increase in average wages in covered employment. The second value is the assumed ultimate annual percentage increase in the Consumer Price Index.

For all three periods, the cost rate decreases with greater assumed rates of increase in the CPI. For the 25-year period, the cost rate decreases from 13.19 (for CPI increases of 2.3 percent) to 12.89 percent (for CPI increases of 4.3 percent). For the 50-year period, it decreases from 15.02 to 14.59 percent, and for the 75-year period, it decreases from 15.80 to 15.31 percent. The actuarial balance increases from +0.64 to +0.90 percent for the 25-year period, from -1.46 to -1.07 for the 50-year period, and from -2.29 to -1.84 percent for the 75-year period.

The patterns described above result primarily from the time lag between the effects of the CPI changes on taxable payroll and on benefit payments. When assuming a greater rate of increase in the CPI (in conjunction with a constant real-wage differential), the effect on taxable payroll of the implied greater rate of increase in average wages is experienced immediately, while the effect on benefits of the greater rate of increase in the CPI is experienced with a lag of about 1 year. In addition, the effect on benefits of the greater rate of increase in average wages is experienced no sooner than 2 years later. Thus, the higher taxable payrolls have a stronger effect than the higher benefits, thereby resulting in lower cost rates. The effect of each 1.0-percentage-point increase in the rate of change assumed for the CPI is an increase in the long-range actuarial balance of about 0.23 percent of taxable payroll.

6. Real Interest Rate

Table II.G6 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about the annual real interest rate for special public-debt obligations issuable to the trust funds, which are compounded semiannually. These assumptions are that the ultimate annual real interest rate will be 2.2 percent, 3.0 percent, and 3.7 percent as assumed for alternatives III, II, and I, respectively. In each case, the ultimate annual increase in the CPI is assumed to be 3.3 percent (as assumed for alternative II), resulting in ultimate annual yields of 5.6, 6.4, and 7.1 percent under alternatives III, II, and I, respectively.

Table II.G6.—Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates With Various Real-Interest Assumptions

[As a percentage of taxable payroll]

Valuation period	Ultimate annual real interest rate		
	2.2 percent	3.0 percent	3.7 percent
Summarized income rate:			
25-year: 1999-2023	13.75	13.81	13.86
50-year: 1999-2048	13.48	13.54	13.60
75-year: 1999-2073	13.43	13.49	13.55
Summarized cost rate:			
25-year: 1999-2023	13.17	13.04	12.93
50-year: 1999-2048	15.15	14.80	14.51
75-year: 1999-2073	16.07	15.56	15.13
Actuarial balance:			
25-year: 1999-2023	+.58	+.77	+.93
50-year: 1999-2048	-1.68	-1.26	-.91
75-year: 1999-2073	-2.64	-2.07	-1.59

For the 25-year period, the cost rate decreases slightly with increasing real interest rates from 13.17 percent (for an ultimate real interest rate of 2.2 percent) to 12.93 percent (for an ultimate real interest rate of 3.7 percent). For the 50-year period, it decreases from 15.15 to 14.51 percent, and for the 75-year period, it decreases from 16.07 to 15.13 percent. The actuarial balance increases from +0.58 to +0.93 percent for the 25-year period, from -1.68 to -0.91 percent for the 50-year period, and from -2.64 to -1.59 percent for the 75-year period. Each 0.5-percentage-point increase in the assumed real interest rate increases the long-range actuarial balance by about 0.35 percent of taxable payroll.

7. Disability Incidence Rates

Table II.G7 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions concerning future disability incidence rates. For all three alternatives, incidence rates by age and sex are assumed to vary during the early years of the projection period before attaining ultimate levels in 2013. The ultimate levels attained vary by sex. In comparison to the corresponding annual rates experienced during the base period 1984-86, the ultimate rates for men are about the same for alternative I, about 25 percent higher for alternative II, and about 50 percent higher for alternative III. For women they are higher by about 17 percent for alternative I, 47 percent for alternative II, and 76 percent for alternative III.

Table II.G7.—Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates With Various Disability Incidence Assumptions

[As a percentage of taxable payroll]

Valuation period	Disability incidence rates based on alternative— I	II	III
Summarized income rate:			
25-year: 1999-2023	13.81	13.81	13.81
50-year: 1999-2048	13.54	13.54	13.54
75-year: 1999-2073	13.49	13.49	13.49
Summarized cost rate:			
25-year: 1999-2023	12.82	13.04	13.25
50-year: 1999-2048	14.52	14.80	15.07
75-year: 1999-2073	15.26	15.56	15.84
Actuarial balance:			
25-year: 1999-2023	+.99	+.77	+.56
50-year: 1999-2048	-.99	-1.26	-1.53
75-year: 1999-2073	-1.77	-2.07	-2.35

For the 25-year period, the cost rate increases with increasing disability incidence rates from 12.82 percent (for the relatively low rates assumed for alternative I) to 13.25 percent (for the relatively high rates assumed for alternative III). For the 50-year period, it increases from 14.52 to 15.07 percent, and for the 75-year period, it increases from 15.26 to 15.84 percent. The actuarial balance decreases from +0.99 to +0.56 percent for the 25-year period, from -0.99 to -1.53 percent for the 50-year period, and from -1.77 to -2.35 percent for the 75-year period.

8. Disability Termination Rates

Table II.G8 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about future disability termination rates.

For alternative II, death-termination rates by age and sex are assumed to decline until they reach levels by the end of the 75-year period that, for men and women, respectively, are about 45 percent and 55 percent of those experienced during the base period 1977-80. For the other alternatives, the rates are assumed to spread gradually from the rates for alternative II. By the end of the projection period, for alternatives I and III, respectively, the rates for men are about 61 percent and 30 percent of those experienced during the base period; for women the corresponding rates are about 75 percent and 37 percent of those experienced during the base period.

For alternative II, ultimate recovery-termination rates by age and sex are assumed to be attained in 2013; such rates are assumed to be 50 percent of those experienced in the base period, 1977-80. The ultimate rates for alternatives I and III are also assumed to be attained in 2013; they are assumed to be 60 percent and 40 percent, respectively, of those experienced in the base period.

Table II.G8.—Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates With Various Disability Termination Assumptions

[As a percentage of taxable payroll]

Valuation period	Disability termination rates based on alternative— I	II	III
Summarized income rate:			
25-year: 1999-2023	13.81	13.81	13.81
50-year: 1999-2048	13.54	13.54	13.54
75-year: 1999-2073	13.49	13.49	13.49
Summarized cost rate:			
25-year: 1999-2023	13.00	13.04	13.07
50-year: 1999-2048	14.75	14.80	14.85
75-year: 1999-2073	15.50	15.56	15.61
Actuarial balance:			
25-year: 1999-2023	+.81	+.77	+.74
50-year: 1999-2048	-1.21	-1.26	-1.31
75-year: 1999-2073	-2.01	-2.07	-2.12

For the 25-year period, the cost rate increases with decreasing disability termination rates from 13.00 percent (for the relatively high rates assumed for alternative I) to 13.07 percent (for the relatively low rates

assumed for alternative III). For the 50-year period, it increases from 14.75 to 14.85 percent, and for the 75-year period, it increases from 15.50 to 15.61 percent. The actuarial balance decreases from +0.81 to +0.74 percent for the 25-year period, from -1.21 to -1.31 percent for the 50-year period, and from -2.01 to -2.12 percent for the 75-year period.

H. ASSUMPTIONS AND METHODS UNDERLYING THE ACTUARIAL ESTIMATES

This section describes the assumptions and methods which underlie the actuarial estimates in this report. Unless specifically stated otherwise, the assumptions and methods were used for each of the three alternatives and for both the short-range and long-range periods. Some of the principal economic and demographic assumptions which vary by alternative are summarized in section II.D. Further details about the assumptions, methods, and actuarial estimates are contained in Actuarial Studies published by the Office of the Chief Actuary, Social Security Administration, which are available upon request. [1]

1. Total Population

Projections were made of the population in the Social Security Area by age, sex, and marital status as of January 1 of each year 1998 through 2080. The starting Social Security Area population for January 1, 1997 was developed from the estimated United States population, including Armed Forces overseas, based on data from the Bureau of the Census, adjusted for net census undercount and increased for other U.S. citizens living abroad and for populations in the geographic areas covered by the OASDI program but not included in the U.S. population. This starting population was then projected using assumed rates of birth, death, marriage, and divorce and assumed levels of migration.

Historically, fertility rates in the United States have fluctuated widely. The total fertility rate is defined to be the average number of children that would be born to a woman in her lifetime if she were to experience the birth rates by age observed in, or assumed for, the selected year, and if she were to survive the entire childbearing period. The total fertility rate decreased from 3.3 children per woman after World War I to 2.1 during the Great Depression, rose to 3.7 in 1957, and then fell to 1.7 in 1976. After 1976, the total fertility rate

[1] To obtain copies of this report or studies and notes published by the Office of the Chief Actuary write to: Office of the Chief Actuary, Social Security Administration, Suite 700 Altmeyer Building, 6401 Security Boulevard, Baltimore, Maryland 21235; or call (410)965-3015. This report is also available on the Internet at http://www.ssa.gov/OACT/pubs.html. This Internet site also presents year-by-year values for the long-range projections over the next 75 years which are only shown every fifth year in the printed version of this report. Other actuarial publications are also available from this address.

began to rise again, reaching a level of 2.07 for 1991. Since then, it has declined slightly to a level currently estimated at 2.04 for 1997.

These variations in fertility rates have resulted from changes in many factors, including social attitudes, economic conditions, and the use of birth-control methods. Future fertility rates may be expected to remain close to recent levels. The recent historical and projected trends in certain population characteristics are consistent with a continued relatively low fertility rate. These trends include the rising percentages of women who have never married, of women who are divorced, and of young women who are in the labor force. Based on consideration of these factors, ultimate total fertility rates of 2.2, 1.9, and 1.6 children per woman were selected for alternatives I, II, and III, respectively. For each alternative, the total fertility rate is assumed to reach its ultimate level in 2023. A rate of 2.1 would ultimately result in a nearly constant population if net immigration were zero and if death rates were constant.

Historically, death rates in the United States have declined fairly steadily. Historical rates used in preparing this report were calculated using data from the National Center for Health Statistics (NCHS) that are final for 1900-96 (by cause of death starting in 1968) and provisional for 1997. For ages 65 and over, Medicare final data for years 1968 through 1996, and provisional data for 1997 were used. The age-sex-adjusted death rate—which is calculated here as the crude rate that would occur in the enumerated total population as of April 1, 1990, if that population were to experience the death rates by age and sex for the selected year—declined at an average rate of 1.1 percent per year between 1900 and 1996. Between 1968 and 1996, the period for which death rates are available by cause, the age-sex adjusted death rate (for all causes combined) declined at an average rate of 1.2 percent per year. However, since 1982, age-sex adjusted death rates have declined more slowly, at an average rate of 0.6 percent between 1982 and 1996.

Reductions in death rates have resulted from many factors, including increased medical knowledge and availability of health-care services, and improvements in personal health-care practices such as diet and exercise. Based on consideration of the expected rate of future progress in these and other areas, three alternative sets of ultimate annual percentage reductions in central death rates by age, sex, and cause of death were selected for 2023 and later. The intermediate set, which is used for alternative II, is considered to be the most likely to occur. Except for those causes of death which primarily affect children

and people of working age, the average annual percentage reductions used for alternative I are smaller than those for alternative II, while those used for alternative III are greater.

Between 1996 and 2023, the reductions in central death rates for alternative II are assumed to change gradually from the average annual reductions by age, sex, and cause of death observed between 1968 and 1996, to the ultimate annual percentage reductions by age, sex, and cause of death assumed for 2023 and later. Alternative I reductions are assumed to change gradually from 50 percent of the average annual reductions observed between 1968 and 1996, while alternative III reductions are assumed to change gradually from 150 percent of the average annual reductions observed between 1968 and 1996.

After adjustment for changes in the age-sex distribution of the population, the resulting death rates were projected to decline at an average annual rate of about 0.2 percent, 0.5 percent, and 1.0 percent between 1996 and 2073 for alternatives I, II, and III, respectively.

For calendar years 1997 and 1998, the net legal immigration is estimated to be 683,000 and 600,000 persons per year, respectively. In addition, for these years the net other-than-legal immigration is estimated to be 300,000 persons per year.

The Immigration Act of 1990 increased substantially the number of legal immigrants permitted starting in 1992. Based on changes in immigration categories and limits specified in the 1990 legislation, the estimated level of net legal immigration under alternative I varies for years through 2000, reaching an assumed ultimate level of 1,150,000 for 2001 and later. Net immigration for 1999 and later is assumed to be 900,000 and 750,000 persons per year for alternatives II and III, respectively. Of the ultimate net numbers of immigrants, 700,000, 600,000, and 550,000, are assumed to be legal, under alternatives I, II and III, respectively, and the remaining immigrants under each assumption are assumed to be other-than-legal.

Table II.H1 shows the projected population as of July 1 by broad age group, for the three alternatives. Also shown are tabulated aged dependency ratios (see table footnotes for definitions). Because eligibility for many types of OASDI benefits depends on marital status,

the population was projected by marital status, as well as by age and sex. Marriage and divorce rates were based on data from NCHS.

Table II.H1.—Social Security Area Population as of July 1 and Dependency Ratios, by Alternative and Broad Age Group, Calendar Years 1950-2075

	Population (in thousands)				Dependency ratio	
Calendar year	Under 20	20-64	65 and over	Total	Aged [1]	Total [2]
Historical data:						
1950	53,895	92,739	12,752	159,386	0.138	0.719
1960	72,989	99,842	17,250	190,081	.173	.904
1965	80,134	104,833	19,093	204,059	.182	.947
1970	80,685	113,194	20,921	214,800	.185	.898
1975	78,438	122,862	23,266	224,566	.189	.828
1980	74,570	134,431	26,149	235,151	.195	.749
1985	73,250	144,899	29,065	247,214	.201	.706
1990	75,161	152,964	32,004	260,128	.209	.701
1995	79,037	159,812	34,281	273,130	.215	.709
Intermediate:						
2000	81,571	168,509	35,383	285,463	.210	.694
2005	82,247	177,919	36,747	296,912	.207	.669
2010	82,151	186,102	39,742	307,995	.214	.655
2015	81,831	191,402	45,639	318,872	.238	.666
2020	82,514	193,580	53,013	329,106	.274	.700
2025	83,377	193,298	61,437	338,112	.318	.749
2030	83,881	193,342	68,442	345,665	.354	.788
2035	83,909	195,831	72,028	351,767	.368	.796
2040	83,903	199,470	73,271	356,643	.367	.788
2045	84,210	202,476	73,957	360,643	.365	.781
2050	84,689	204,030	75,424	364,144	.370	.785
2055	85,133	204,672	77,700	367,505	.380	.796
2060	85,435	204,828	80,678	370,941	.394	.811
2065	85,651	205,856	82,942	374,450	.403	.819
2070	85,900	207,228	84,712	377,840	.409	.823
2075	86,228	208,348	86,355	380,931	.414	.828
Low Cost:						
2000	81,774	168,699	35,363	285,835	.210	.694
2005	83,430	178,904	36,499	298,834	.204	.670
2010	84,942	187,886	39,087	311,915	.208	.660
2015	86,930	194,042	44,488	325,460	.229	.677
2020	90,597	197,261	51,306	339,164	.260	.719
2025	94,757	198,583	59,057	352,396	.297	.775
2030	98,402	200,904	65,260	364,567	.325	.815
2035	101,416	206,347	68,024	375,786	.330	.821
2040	104,360	213,590	68,572	386,522	.321	.810
2045	107,616	220,839	68,821	397,276	.312	.799
2050	111,313	227,039	70,052	408,404	.309	.799
2055	115,100	232,867	72,185	420,152	.310	.804
2060	118,701	238,903	74,994	432,597	.314	.811
2065	122,155	246,453	77,044	445,653	.313	.808
2070	125,682	254,584	78,862	459,128	.310	.803
2075	129,401	262,521	80,955	472,877	.308	.801

Table II.H1.—Social Security Area Population as of July 1 and Dependency Ratios, by Alternative and Broad Age Group, Calendar Years 1950-2075 (Cont.)

	Population (in thousands)				Dependency ratio	
Calendar year	Under 20	20-64	65 and over	Total	Aged [1]	Total [2]
High Cost:						
2000	81,395	168,373	35,406	285,174	0.210	0.694
2005	81,210	177,312	37,007	295,529	.209	.667
2010	79,652	185,014	40,408	305,074	.218	.649
2015	77,231	189,797	46,805	313,833	.247	.654
2020	75,208	191,335	54,782	321,324	.286	.679
2025	73,179	189,860	63,990	327,029	.337	.722
2030	71,058	188,076	71,983	331,116	.383	.761
2035	68,730	188,120	76,665	333,515	.408	.773
2040	66,579	188,697	78,971	334,248	.419	.771
2045	64,925	188,051	80,550	333,526	.428	.774
2050	63,330	185,646	82,748	331,724	.446	.787
2055	61,692	181,947	85,655	329,293	.471	.810
2060	60,044	177,279	89,265	326,588	.504	.842
2065	58,472	173,090	92,163	323,726	.532	.870
2070	57,025	169,301	94,239	320,565	.557	.893
2075	55,692	165,461	95,757	316,909	.579	.915

[1] Population aged 65 and over, divided by population aged 20-64.

[2] Sum of population aged 65 and over, and population under age 20, divided by population aged 20-64.

Note: Totals do not necessarily equal the sums of rounded components.

2. Covered Population

The number of covered workers in a year is defined as the number of persons who, at any time during the year, have OASDI taxable earnings. Projections of the number of covered workers were made by applying projected coverage rates to the projected Social Security Area population. The coverage rates—i.e., the number of covered workers in the year, as a percentage of the population as of July 1—were determined by age and sex using projected labor force participation rates and unemployment rates, and their historical relationships to coverage rates. In addition, the coverage rates were adjusted to reflect the increase in coverage of Federal civilian employment as a result of the 1983 Social Security Amendments and changes in the number of other-than-legal aliens estimated to be residing within the Social Security coverage area.

Labor force participation rates were projected by age and sex, taking into account projections of the percentage of the population that is married, the percentage of the population that is disabled, the number of children in the population, the level of retirement benefits, and the state of the economy. For men, the projected age-adjusted labor force participation rates for 2075 for alternatives I, II, and III are 1.6, 1.7, and 1.5 percentage points lower, respectively, than the 1997 level of 75.5 percent. For women, the projected age-adjusted labor force

participation rates increase for alternatives I, II and III. The projected age-adjusted rates for 2075 are 0.6, 0.6, and 0.5 percentage points, respectively, higher than the 1997 level of 60.0 percent.

The total age-sex-adjusted unemployment rate averaged 5.8 percent for the 30 years 1968-97 and 5.8 percent for the 10 years 1988-97. The ultimate total age-sex-adjusted unemployment rate is assumed to be 4.5, 5.5, and 6.5 percent for alternatives I, II, and III, respectively. These ultimate unemployment rates are 0.5 percentage point lower than those used in last year's report. Unemployment levels off to the assumed ultimate age-sex-adjusted rate by 2009, for each of the three alternatives.

The projected age-adjusted coverage rate for men changes from its 1997 level of 74.9 percent to 73.6, 72.5, and 71.4 percent in 2075 for alternatives I, II, and III, respectively. For women, it changes from its 1997 level of 63.1 percent to 62.3, 61.7, and 60.9 percent for alternatives I, II, and III, respectively.

3. Average Earnings, Inflation, and Real Interest Rate

Future increases in average earnings and in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W, hereafter denoted as "CPI") will directly affect the OASDI program. Increases in the CPI directly affect the automatic cost-of-living benefit increases, while inflation, in general, affects the nominal levels of average earnings, GDP, and taxable payroll. Average earnings in covered employment for each year have a direct effect on the size of the taxable payroll and on the future level of average benefits. In addition, increases in average wages in the U.S. economy directly affect the indexation, under the automatic-adjustment provisions in the law, of the benefit formulas, the contribution and benefit base, the exempt amounts under the retirement earnings test, the amount of earnings required for a quarter of coverage, and under certain circumstances, the automatic cost-of-living benefit increases.

Increases in average earnings were projected in two components—average earnings of wage-and-salary workers, usually referred to as average wages (and shown for OASDI covered employment in table II.D1 of this report), and average net earnings of self-employed persons. Each of these was subdivided into increases in real average earnings and increases in the CPI. For simplicity, real increases in the average covered wage are sometimes expressed in the form of real-

wage differentials—i.e., the percentage increase in the average nominal wage minus the percentage increase in the CPI.

The assumed ultimate increases in average real earnings are based on analysis of trends in productivity gains and the factors linking productivity gains with increases in average real earnings. For the 40 years 1958-97, annual increases in productivity for the total U.S. economy averaged 1.7 percent, the result of average annual increases of 2.9, 2.0, 1.0, and 0.9 percent for the 10-year periods 1958-67, 1968-77, 1978-87 and 1988-97, respectively. Meanwhile, the average annual rate of change in average real earnings for the total U.S. economy was an increase of 0.9 percent for the 40 years 1958-97, the result of average annual changes of 2.3, 0.4, 0.0, and 0.8 percent, respectively, for the aforementioned 10-year periods. The change in the linkages between annual changes in productivity and real earnings averaged -0.8 percent for the 40 years 1958-97, and -0.6, -1.5, -1.0, and -0.2 percent, respectively, for the aforementioned 10-year periods. The change in the linkages reflects changes in such factors as the average number of hours worked per year, labor's share of total output, the proportion of employee compensation paid as wages, and price adjustment reflecting the ratio of the GDP price index to the CPI.

The average annual rate of change in the average real wage in OASDI covered employment was 0.9 percent over the 40 years 1958-97. However, the average annual rates of change over the 10-year periods varied considerably. The average annual rates of change for the 10-year periods 1958-67, 1968-77, 1978-87, and 1988-97 were 2.0 percent, 0.5 percent, 0.7 percent and 0.7 percent, respectively.

The ultimate annual increases in productivity for all sectors—wage-and-salary workers, self-employed persons, and the total economy—are assumed to be about 1.6, 1.3, and 1.0 percent for alternatives I, II, and III, respectively. The corresponding ultimate annual rates of change in the linkages for wage-and-salary workers are assumed to be declines of 0.2, 0.4, and 0.6 percent for alternatives I, II, and III, respectively. These linkages are made up of assumed annual decreases of 0.0, 0.1, and 0.2 percent in average hours worked per year, 0.1, 0.2, and 0.3 percent annual declines in wages as a share of compensation for alternatives I, II, and III, respectively, and a difference of 0.1 percentage point between the rates of growth in the CPI and the GDP price index for each alternative. No ultimate change is assumed for the historically relatively stable ratio of employee compensation to GDP. The resulting ultimate real-wage differentials are 1.4, 0.9, and 0.4 percent for alternatives I, II, and III, respectively.

Ultimate annual declines in the linkages for self-employed persons are smaller because the proportion of reported compensation that is considered earnings remains constant. As a result, ultimate average real-earnings growth rates for the self employed are assumed to be higher than for wage-and-salary workers. The corresponding ultimate average real-earnings for wage-and-salary workers and self-employed persons, combined, are slightly higher than those assumed for wage-and-salary workers only.

Historically, the CPI has increased, on average, by 4.4 percent for the 40 years 1958-97, 5.3 percent for the 30 years 1968-97, 4.9 percent for the 20 years 1978-97, and 3.4 percent for the 10 years 1988-97. The ultimate average annual CPI increases of 2.3, 3.3, and 4.3 percent for alternatives I, II, and III, respectively, were chosen to include a reasonable range of possible future experience. These ultimate CPI increases are 0.2 percentage point lower than those used in last year's report. The GDP price index has increased by 4.1 percent annually for the 40 years 1958-97, 4.9 percent annually for the 30 years 1968-97, 4.4 percent annually for the 20 years 1978-97, and 3.0 percent annually for the 10 years 1988-97. The difference between the growth rates in these price indexes is assumed to decline gradually from 0.5 percentage point during 1999, to the ultimate assumed difference of 0.1 percentage point by 2008.

The ultimate increases in average annual wages in covered employment are assumed to be 3.7, 4.2, and 4.7 percent, for alternatives I, II, and III, respectively. These were obtained, for each alternative, by adding the assumed annual percentage increase in the CPI to the assumed real-wage differential. Hence, the growth in average annual wages in covered employment for each alternative is 0.2 percentage point lower than those used in last year's report. Ultimate increases in average wages and earnings for the U.S. economy are very similar to those assumed for average wages in covered employment.

The interest rate considered in this report is the nominal interest rate, which is compounded semiannually, for special U.S. Government obligations issuable to the trust funds in each of the 12 months of the year. The real interest rate is defined to be the annual (compounded) yield rate for investments in these securities divided by the growth in the CPI.

In developing a reasonable range of assumed future real interest rates for the three alternatives, historical experience was examined for the 40 years, 1958-97, and for each of the 10-year subperiods, 1958-67,

1968-77, 1978-87, and 1988-97. For the 40-year period, the real interest rate averaged 2.5 percent per year. For the four 10-year subperiods, the real interest rates averaged 1.8, 0.4, 4.0, and 4.2 percent per year, respectively. The assumed ultimate real interest rates are 3.7 percent, 3.0 percent, and 2.2 percent for alternatives I, II, and III, respectively. These ultimate real interest rates are 0.2 percentage point higher than those used in last year's report. The projected interest rates are assumed to trend toward these ultimate interest rates. The ultimate value for alternative II is reached in 2007, and for alternatives I and III in 2009.

4. Taxable Payroll and Taxes

The taxable payroll for any period is that amount which, when multiplied by the combined employee-employer tax rate, yields the total amount of taxes due from employees, employers, and the self employed for work during the period. The taxable payroll is important not just in estimating OASDI income, but also in determining income and cost rates, and actuarial balances. These terms are defined in the introduction to the section titled "Actuarial Estimates."

In practice, the taxable payroll is calculated as a weighted average of the earnings on which employees, employers, and self-employed persons make contributions to the OASDI program. The weighting takes into account the lower tax rates, as compared to the combined employee-employer rate, which apply to multiple-employer "excess wages," and which did apply, before 1984, to net earnings from self employment and, before 1988, to tips. For 1983 and later, taxable payroll also includes deemed wage credits for military service. Estimates of taxable earnings for employees, employers, and the self-employed were developed from corresponding estimates of earnings in the U.S. economy, by means of factors which adjust for various differences in these measures. The factors adjust total U.S. earnings by removing earnings from noncovered employment, adding earnings from various outlying areas which are covered by Social Security but are not included in published U.S. data, and removing earnings above the taxable earnings base.

Decreases in the ratio of taxable earnings to earnings in OASDI covered employment since 1984 are due to the increasing proportion of total covered wages earned by very high wage earners. This trend is projected to continue through the first 10 years of the projection period for alternatives II and III. The ratio of taxable wages to wages

in covered employment is projected to decline from a level of 0.862 for 1998 to ultimate levels of 0.855 and 0.847, by the end of the tenth projection year for alternatives II, and III, respectively. For alternative I, the ratio is assumed to raise slightly to about 0.870. These ultimate ratios of taxable earnings to OASDI covered earnings are about the same as were assumed for last year's report.

The projected levels of the taxable payroll for the intermediate alternative are higher than those projected for last year's report through 2011, but are lower thereafter. This results from a lower ultimate growth in the CPI than was assumed for last year's report.

Estimates of taxes collected were developed from the estimates of taxable earnings by applying the employee, employer, or self-employed tax rate, and by taking into account the lag between the time the tax liability is incurred and the time the taxes are collected.

5. Insured Population

There are three basic types of insured status under the OASDI program: fully insured, currently insured, and disability insured. Fully insured status is required of an aged worker for eligibility to a primary retirement benefit and for the eligibility of that worker's spouse and children to auxiliary benefits. Fully insured status is also required of a deceased worker for the eligibility of the worker's survivors to benefits (with the exception of child survivors and parents of eligible child survivors, in which cases the deceased worker is required to have had either currently insured status or fully insured status). Disability insured status, which is more restrictive than fully insured status, is required of a disabled worker for eligibility to a primary disability benefit and for the eligibility of the worker's spouse and children to auxiliary benefits.

Projections of the percentage of the population that is fully insured were made by age and sex, from estimated distributions of workers by accumulated quarters of coverage based on past and projected coverage rates and amounts of earnings required for quarters of coverage. Currently insured status was disregarded for purposes of these estimates, because the number of cases in which eligibility for benefits is based solely on currently insured status is relatively small. Projections of the percentage of fully insured persons who are also disability insured were made by age and sex based on past and projected coverage rates, the requirements for disability insured status, and their

historical relationships. Finally, the fully insured and disability insured populations were developed from the projected total population by applying the appropriate percentages.

Under this procedure, the percentage of the Social Security Area population aged 62 and over that is fully insured is projected to increase from its estimated level of 77.4 on December 31, 1994, to 91.0, 90.9, and 90.5 on December 31, 2074, based on alternatives I, II, and III, respectively. The percentage for females is projected to increase significantly, while that for males is projected to increase slightly. Based on alternative II, for example, the percentage for males is projected to increase during this period from 91.6 to 92.7, while that for females is projected to increase from 67.0 to 89.4.

The fully insured population by age and sex was further subdivided by marital status, using the variation in labor force participation rates by marital status to estimate the variation in coverage rates by marital status. These coverage rates were then used to estimate the variation in the fully insured rates by marital status.

6. Old-Age and Survivors Insurance Beneficiaries

The number of OASI beneficiaries was projected for each type of benefit separately, by the sex of the worker on whose earnings the benefits are based, and by the age of the beneficiary. For selected types of benefits, the number of beneficiaries was also projected by marital status.

For the short-range period, the number of retired-worker beneficiaries was developed by applying award rates to the aged fully insured population less those insured persons entitled to retired-worker, disabled-worker, or widow(er)'s benefits, and by applying termination rates to the number of persons already receiving retired-worker benefits. The fraction of entitled beneficiaries that would actually receive benefits was projected to continue increasing at ages 65-69, reflecting the modifications in the retirement earnings test enacted in Public Law 104-121.

For the long-range period, the number of retired-worker beneficiaries not previously converted from disabled-worker beneficiary status was projected as a percentage of the exposed population, i.e., the aged fully insured population less persons entitled to or converted from disability benefits and insured persons entitled to widow(er)'s benefits. The percentage for ages 70 and over was assumed to be nearly 100, because the retirement earnings test and delayed retirement credit do

not apply after age 70, but was adjusted for the statistical difference between in-force data and in-current-payment data, and projected increases in the proportion of other-than-legal persons in the population. The percentage for each age 62 through 69 was projected from observed historical and projected short-range trends, with an adjustment for changes in the portion of the primary insurance amount payable at each age of entitlement to the portion payable at age 70 entitlement. As the normal retirement age increases, the number of retired workers as a percentage of the exposed population is gradually adjusted downward at each age 62 through 69, reaching an ultimate level in 2030; these downward adjustments also reflect the effects of scheduled increases in the delayed retirement credits. Concurrently, the percentage for ages 65 through 69 was adjusted for the earnings test provision of Public Law 104-121.

For the long-range period also, the number of retired-worker beneficiaries previously converted from disabled-worker beneficiaries was calculated as an extension beyond normal retirement age of the calculation of disabled-worker beneficiaries.

The number of aged-spouse beneficiaries was estimated from the population projected by age and sex. The benefits of aged-spouse beneficiaries are based on the earnings records of their husbands or wives, who are referred to as "wage earners." In the short-range period, a regression equation was used to project the number of aged-spouse beneficiaries, as a proportion of the aged uninsured female or male population. In the long-range period, aged-spouse beneficiaries were estimated from the population projected by age, sex, and marital status. To the number of spouses aged 62 and over in the population, a series of factors were applied, representing the probabilities that the spouse and the wage earner meet all of the conditions of eligibility—i.e., the probabilities that (1) the wage earner is 62 or over, (2) the wage earner is insured, (3) the wage earner is receiving benefits, (4) the spouse is not receiving a benefit for the care of an entitled child, (5) the spouse is not insured, and (6) the spouse is not eligible to receive a significant government pension based on earnings in noncovered employment. To the resulting number of spouses was applied a projected prevalence rate to calculate the estimated number of aged-spouse beneficiaries.

In addition, the same factors were applied to the number of divorced persons aged 62 and over in the population, with three differences. First, an additional factor is required to reflect the probability that the person's former wage-earner spouse is still alive (otherwise, the

person may be entitled to a divorced widow(er)'s benefit). Second, a factor is required to reflect the probability that the marriage to the wage-earner spouse was at least 10 years in duration. Third, factor (3) was not applied because, effective for January 1985, a divorced person generally need not wait to receive benefits until the former wage-earner spouse is receiving benefits.

The projected numbers of children under age 18, and students aged 18, who are eligible for benefits as children of retired-worker beneficiaries, were based on the projected number of children in the population. In the short-range period, the number of entitled children was developed by applying award rates to the number of children in the population where both parents are alive, and by applying termination rates to the number of children already receiving benefits.

In the long-range period, the number of entitled children was projected separately by sex of the wage-earner parent. To the number of children in the population, factors were applied representing the probabilities that the parent is alive, aged 62 or over, insured, and receiving a retired-worker benefit. Another factor was applied representing the probability that the child is not entitled to a benefit based on the other parent's earnings. In addition, a factor was applied to reduce the number of beneficiaries to reflect the more restrictive requirements for entitlement of stepchildren that were enacted in Public Law 104-121. For children aged 18, a factor representing the probability that the child is attending a secondary school was also applied.

The number of disabled children aged 18 and over of retired-worker beneficiaries was projected from the adult population. In the short-range period, award rates were applied to the population, and termination rates were applied to the number of disabled children already receiving benefits. In the long-range period, disabled children were projected in a manner similar to that for children under 18, with the inclusion of a factor representing the probability of being disabled since childhood.

In the short-range period, the number of entitled young-spouse beneficiaries was developed by applying award rates to the number of awards to children of retired workers, where the children are either under age 16 or disabled, and by applying termination rates to the number of young-spouses already receiving benefits. In the long-range period, young-spouse beneficiaries were projected as a proportion of the projected number of child beneficiaries of retired workers, taking into account projected changes in average family size.

The number of aged-widow(er) beneficiaries was projected from the population by age and sex. In the short-range period, insured aged-widow(er) beneficiaries were projected concurrently with the retired-worker beneficiaries. A regression equation projected the number of uninsured aged-widow(er) beneficiaries, as a proportion of the uninsured aged female or male population not receiving any type of benefit. In the long-range period, aged-widow(er) beneficiaries were projected from the population by age, sex, and marital status. Four factors were applied to the number of widow(er)s in the population aged 60 and over. These factors represent the probabilities that (1) the deceased wage earner was fully insured at death, (2) the widow(er) is not receiving a benefit for the care of an entitled child, (3) the widow(er) is not fully insured, and (4) the widow(er)'s benefits are not withheld because of receipt of a significant government pension based on earnings in noncovered employment. In addition, some insured widow(er)s who had not applied for their retired-worker benefits are assumed to receive widow(er) benefits. Also, the same factors were applied to the number of divorced persons aged 60 and over in the population, with additional factors representing the probability that the person's former wage-earner spouse is deceased and that the marriage was at least 10 years in duration.

In the short-range period, the number of disabled-widow(er) beneficiaries was estimated as a proportion of the uninsured female or male population aged 50-64. In the long-range period, the number was projected for each age 50 through 64 as a percentage of the widowed and divorced populations, adjusted for the insured status of the deceased spouse and the prevalence of disability.

The projected numbers of children under age 18, and students aged 18, who are eligible for benefits as survivors of deceased workers, were based on the projected number of children in the population whose mothers or fathers are deceased. In the short-range period, the number of entitled children was developed by applying award rates to the number of orphaned children, and by applying termination rates to the number of children already receiving benefits.

In the long-range period, the number of child-survivor beneficiaries was projected in a manner analogous to that for child beneficiaries of retired workers, with the factor representing the probability that the parent is aged 62 or over replaced by a factor that represented the probability that the parent is deceased.

In the short-range period, the numbers of entitled mother-survivor and father-survivor beneficiaries were developed by applying award rates to the number of awards to child-survivor beneficiaries, where the children are either under age 16 or disabled, and by applying termination rates to the number of mother-survivors and father-survivors already receiving benefits. In the long-range period, mother-survivor and father-survivor beneficiaries were estimated from the number of child-survivor beneficiaries, taking into account projected changes in average family size.

The number of parent-survivor beneficiaries was projected based on the historical pattern of the number of such beneficiaries.

Table II.H2 shows the projected number of beneficiaries under the OASI program by type of benefit. Included among the beneficiaries who receive retired-worker benefits are some persons who also receive a residual benefit consisting of the excess of an auxiliary benefit over their retired-worker benefit. Estimates of the number of such residual payments were made separately for spouses and widow(er)s.

Table II.H2.—OASI Beneficiaries With Monthly Benefits in Current-Payment Status as of December 31 by Alternative, Calendar Years 1945-2075

[In thousands]

	Retired workers and auxiliaries			Survivors				
Calendar year	Worker	Wife-husband	Child	Widow-widower	Mother-father	Child	Parent	Total
Historical data:								
1945	518	159	13	94	121	377	6	1,288
1950	1,771	508	46	314	169	653	15	3,477
1955	4,474	1,192	122	701	292	1,154	25	7,961
1960	8,061	2,269	268	1,544	401	1,577	36	14,157
1965	11,101	2,614	461	2,371	472	2,074	35	19,128
1970	13,349	2,668	546	3,227	523	2,688	29	23,030
1975	16,589	2,867	643	3,888	582	2,919	21	27,509
1980	19,564	3,018	639	4,415	563	2,610	15	30,823
1985	22,435	3,069	456	4,863	372	1,918	10	33,123
1986	22,985	3,088	450	4,931	350	1,878	9	33,691
1987	23,444	3,090	439	4,984	329	1,837	8	34,130
1988	23,862	3,086	432	5,029	318	1,809	7	34,543
1989	24,331	3,093	422	5,071	312	1,782	6	35,017
1990	24,841	3,101	421	5,111	304	1,777	6	35,562
1991	25,293	3,104	425	5,158	301	1,792	5	36,078
1992	25,762	3,112	431	5,205	294	1,808	5	36,618
1993	26,109	3,094	436	5,224	289	1,837	5	36,994
1994	26,412	3,066	440	5,232	283	1,865	4	37,303
1995	26,679	3,026	441	5,226	275	1,884	4	37,534
1996	26,905	2,970	442	5,210	242	1,898	4	37,671
1997	27,282	2,922	441	5,053	230	1,893	3	37,825
1998	27,518	2,864	439	4,990	221	1,884	3	37,918

Table II.H2.—OASI Beneficiaries With Monthly Benefits in Current-Payment Status as of December 31 by Alternative, Calendar Years 1945-2075 (Cont.)

[In thousands]

	Retired workers and auxiliaries			Survivors				
Calendar year	Worker	Wife-husband	Child	Widow-widower	Mother-father	Child	Parent	Total
Intermediate:								
1999	27,749	2,845	440	4,997	213	1,891	3	38,139
2000	28,042	2,829	441	5,005	207	1,893	3	38,421
2005	30,108	2,766	444	5,103	184	1,878	2	40,485
2010	33,896	2,722	486	5,239	184	1,801	3	44,332
2015	40,193	2,554	561	5,308	171	1,706	3	50,495
2020	47,648	2,443	639	5,346	165	1,661	3	57,905
2025	54,337	2,476	693	5,377	165	1,645	3	64,696
2030	59,596	2,476	721	5,360	163	1,639	3	69,960
2035	62,766	2,432	738	5,345	160	1,628	3	73,073
2040	63,889	2,347	743	5,326	156	1,608	3	74,073
2045	64,552	2,318	750	5,336	152	1,587	3	74,698
2050	65,747	2,348	759	5,342	148	1,566	3	75,913
2055	67,780	2,451	779	5,359	145	1,547	3	78,063
2060	70,123	2,560	796	5,370	142	1,527	3	80,521
2065	72,036	2,639	805	5,403	138	1,507	3	82,531
2070	73,607	2,690	810	5,467	135	1,486	3	84,198
2075	75,088	2,739	817	5,537	132	1,467	3	85,782
Low Cost:								
1999	27,742	2,845	440	4,996	214	1,891	3	38,131
2000	28,019	2,827	442	5,002	207	1,895	3	38,395
2005	29,915	2,746	447	5,073	186	1,894	2	40,263
2010	33,422	2,652	488	5,228	185	1,881	3	43,860
2015	39,357	2,446	567	5,307	173	1,846	3	49,699
2020	46,360	2,300	652	5,372	165	1,855	3	56,706
2025	52,515	2,301	718	5,431	162	1,893	3	63,022
2030	57,083	2,267	760	5,424	162	1,946	3	67,645
2035	59,535	2,190	794	5,388	162	1,994	3	70,066
2040	60,072	2,083	816	5,322	163	2,024	3	70,483
2045	60,421	2,038	844	5,271	163	2,046	3	70,786
2050	61,425	2,055	877	5,219	165	2,076	3	71,820
2055	63,338	2,138	923	5,199	168	2,114	3	73,882
2060	65,476	2,221	963	5,198	171	2,154	3	76,186
2065	67,217	2,280	995	5,244	173	2,191	3	78,103
2070	68,863	2,330	1,023	5,335	176	2,227	3	79,956
2075	70,815	2,395	1,054	5,453	178	2,264	3	82,161
High Cost:								
1999	27,758	2,846	440	4,998	213	1,891	3	38,149
2000	28,067	2,832	441	5,009	207	1,892	3	38,451
2005	30,293	2,787	444	5,135	183	1,868	2	40,711
2010	34,375	2,797	485	5,243	189	1,754	3	44,846
2015	41,037	2,671	557	5,295	175	1,618	3	51,356
2020	48,988	2,606	627	5,299	168	1,522	3	59,212
2025	56,304	2,687	670	5,292	164	1,455	3	66,575
2030	62,430	2,738	685	5,257	157	1,398	3	72,667
2035	66,577	2,744	686	5,255	148	1,343	3	76,754
2040	68,627	2,702	673	5,279	138	1,289	3	78,711
2045	70,005	2,707	662	5,343	129	1,242	3	80,091
2050	71,814	2,768	649	5,393	120	1,194	3	81,941
2055	74,385	2,907	647	5,427	112	1,145	3	84,626
2060	77,342	3,058	646	5,420	104	1,097	3	87,671
2065	79,812	3,173	640	5,409	96	1,050	3	90,183
2070	81,671	3,238	630	5,413	90	1,006	3	92,052
2075	83,031	3,277	622	5,414	84	965	3	93,395

Note: The number of beneficiaries does not include certain uninsured persons, most of whom both attained age 72 before 1968 and have fewer than 3 quarters of coverage, in which case the costs are reimbursed by the general fund of the Treasury. The number of such uninsured persons was 225 as of December 31, 1998, and is estimated to be fewer than 100 by the turn of the century. Totals do not necessarily equal the sums of rounded components.

7. Disability Insurance Beneficiaries

The number of DI beneficiaries was projected for each type of benefit separately, by the sex of the worker on whose earnings the benefits are based, and the age of the beneficiary. The number of disabled-worker beneficiaries was projected from the estimated number of such beneficiaries entitled on December 31, 1998, by adding new entitlements and subtracting terminations. The starting number of entitled disabled-worker beneficiaries was estimated by age, sex, and duration of entitlement, from the tabulated number of disabled-worker beneficiaries in current-payment status on December 31, 1998. The number of new entitlements during each year was projected by applying assumed age-sex specific disability incidence rates to the projected disability insured population (after excluding those already entitled to disabled-worker benefits).

The number of terminations was projected by applying assumed termination rates to the disabled-worker population. In the short-range period, the number of terminations was projected by applying assumed termination rates by reason—death, recovery, and all other—and by age and sex, to the entitled disabled-worker population. In the long-range period, the number of terminations was projected by applying assumed death rates and recovery rates, by age, sex, and duration of entitlement, to the entitled disabled-worker population. To this number of terminations was added, in both the short-range and long-range periods, the number of disabled-worker beneficiaries who would be automatically converted to retired-worker beneficiaries upon attainment of the normal retirement age (NRA), currently age 65.

The projection of incidence and termination rates for the DI program begins with an evaluation of historical trends. Incidence rates have varied within a wide range over the past 25 years. From an historically high level of roughly 7.0 awards per thousand insured in 1975, rates declined to roughly 3.6 per thousand by 1982. Following a gradual trend upward, rates increased to roughly 5.7 per thousand by 1992 and have since followed a gradual trend downward to an estimated 4.7 per thousand in 1998.

Projected levels of disability incidence rates for workers are normally determined in two or three steps. Rates are initially estimated from their most recent levels based on past trends and future expectations without regard to the increases in normal retirement age scheduled under present law. Next, an adjustment is made to reflect the scheduled increase in NRA; beginning with individuals attaining age 62 in

2000 (the first cohort affected), incidence rates are adjusted upward to account for the additional eligible workers who are expected to file for disability benefits rather than for reduced retirement benefits that are even more reduced when the NRA is greater than age 65.

Under intermediate assumptions, gross incidence rates are estimated to increase over the next 10 years, attributable in part to a disability population more heavily weighted toward the higher incidence ages (50-64). Without regard to scheduled NRA increases, rates are estimated to increase from 4.7 awards per thousand in 1998 to 5.5 per thousand by 2008.

Further increases in incidence rates attributable to the scheduled NRA increases and new ages at which disability benefits may be payable (65-67), result in an additional 0.4 awards per thousand by 2008. These adjustments contribute to the overall rise in the gross incidence rate to 5.9 per thousand by the end of the short-range period. The overall rate continues to increase to 7.2 per thousand by 2027, at which time the effects of the scheduled increase in the NRA on the DI program will be complete. This is very close to the ultimate rate of 7.3 per thousand, attained in 2071.

Under the low cost assumptions, the gross disability incidence rate is assumed to decrease slightly to 4.5 per thousand in 1999 before resuming an upward trend back toward the 1998 level of 4.7 per thousand by 2002. The upward trend continues to 5.0 per thousand by 2008. The gross incidence rate for 2027 is estimated to be 5.7 per thousand exposed. Under the high cost assumptions, the gross disability incidence rate is assumed to increase by about 43 percent over the next 10 years, to a level comparable to the historical highs experienced in the mid 1970s. The gross incidence rate under the high cost assumptions is estimated to reach about 8.6 per thousand exposed by 2027.

In the short-range period, the age-sex specific termination rates are projected by reason—death, recovery, and all other. Two notable developments that may slightly affect mortality rates among the disabled include a significant reduction in projected awards due to HIV impairments, and the elimination of current and future benefit payments to drug addicts and alcoholics. Both of these categories are assumed to have significantly higher death rates than the overall disability population, but are relatively small in number compared to total disabled workers in current-payment status. The actual impact may not be known for some time. Gross death rates are projected to remain rela-

tively constant at roughly 33.5 deaths per thousand disabled workers. This is down slightly from 35.5 deaths per thousand as projected under the intermediate set of assumptions from last year's report. The pattern of projected recovery rates is based on workload estimates (supplied by the Social Security Administration's Office of Disability), and budgetary constraints affecting the anticipated number of continuing disability reviews scheduled in the future (supplied by the Social Security Administration's Office of Budget). Under low cost (high cost) assumptions, terminations due to death, recovery, and other reasons increase (decrease) to levels roughly 10 percent higher (lower) than those under the intermediate assumptions.

In the long-range period, the death-termination rates and recovery rates were projected by age, sex, and duration of entitlement. For 1998, the last year of actual data, recovery rates were 52 percent of the base period rates for males, and 58 percent of the base period rates for females. Death-termination rates for 1998 were 76 percent of the base period for males, and 74 percent of the base period rates for females.

For alternative II, death rates reach levels in 2073 approximately 55 percent lower for males and approximately 44 percent lower for females than those experienced by disabled-worker beneficiaries during 1977-80, the most recent period for which detailed data are available. The recovery rates for both males and females, after their patterns during the short-range period, are assumed to increase until 2013, when they attain ultimate levels that are 50 percent lower than those experienced during the period 1977-80. Projected increases in recovery rates reflect the estimated effect of the periodic reviews required by provisions of law first enacted in 1980, and amended in 1983, 1984, 1990, and 1996.

For alternative I, the death rates in 2073 are estimated to be roughly 39 percent lower for males and approximately 25 percent lower for females than those experienced by disabled-worker beneficiaries during 1977-80. Recovery rates are assumed to increase to ultimate levels that are about 10 percent higher than the 1998 level for males, and about the same as the 1998 level for females. These ultimate recovery rates are 40 percent lower than those of the 1977-80 base period for both males and females. For alternative III, the death rates in 2073 are estimated to be about 70 percent lower for males and 63 percent lower for females than those experienced during 1977-80. Recovery rates are assumed to decrease to ultimate levels that are about 20 percent lower than the 1998 levels for males, and about 30 percent

lower than the 1998 levels for females. These ultimate recovery rates are 60 percent lower than those experienced during 1977-80.

In the short-range period, the projected numbers of children under age 18, students aged 18, and disabled children aged 18 and over, who are eligible for benefits as children of disabled-worker beneficiaries, were projected by applying quarterly award and termination rates. Awards to the three categories of child beneficiaries were based on the number of awards to disabled-worker beneficiaries.

In the long-range period, the projected numbers of minor child and student beneficiaries were based on the projected number of children in the population by age. To the number of children were applied factors representing the probability that either of their parents is insured and disabled. In addition, a factor was applied to reduce the number of beneficiaries to reflect the more restrictive requirements for entitlement of stepchildren that were enacted in Public Law 104-121. The number of disabled children aged 18 and over was projected as a function of the number of disabled-worker beneficiaries and the size of the adult population.

In the short-range period, the number of young-spouse beneficiaries was projected by applying quarterly award and termination rates, where awards were based on the number of awards to child beneficiaries who are either under age 16 or disabled. The number of aged-spouse beneficiaries was also projected by applying quarterly award and termination rates, where awards were based on the number of awards to disabled-worker beneficiaries.

In the long-range period, the number of young-spouse beneficiaries was projected as a proportion of the projected number of child beneficiaries who are either under age 16 or disabled, taking into account projected changes in family size. The number of aged-spouse beneficiaries was projected as a proportion of the number of disabled-worker beneficiaries, based on recent experience and allowing for projected changes in marriage rates.

Table II.H3 shows the projected number of beneficiaries under the DI program by type of benefit.

Table II.H3.—DI Beneficiaries With Monthly Benefits in Current-Payment Status as of December 31 by Alternative, Calendar Years 1960-2075

[In thousands]

Calendar year	Disabled worker	Auxiliaries: Wife-husband	Auxiliaries: Child	Total
Historical data:				
1960	455	77	155	687
1965	988	193	558	1,739
1970	1,493	283	889	2,665
1975	2,488	453	1,411	4,351
1980	2,856	462	1,359	4,677
1985	2,653	306	945	3,904
1986	2,725	301	965	3,991
1987	2,782	291	968	4,041
1988	2,826	281	963	4,070
1989	2,891	271	962	4,124
1990	3,007	266	989	4,261
1991	3,191	266	1,052	4,509
1992	3,464	271	1,151	4,886
1993	3,721	273	1,255	5,249
1994	3,958	271	1,350	5,579
1995	4,179	264	1,409	5,852
1996	4,378	224	1,463	6,065
1997	4,501	207	1,438	6,146
1998	4,691	190	1,446	6,327
Intermediate:				
1999	4,895	184	1,462	6,541
2000	5,109	179	1,477	6,765
2005	6,456	191	1,638	8,285
2010	7,673	207	1,723	9,604
2015	8,647	205	1,762	10,614
2020	9,171	215	1,777	11,163
2025	9,656	239	1,817	11,712
2030	9,719	243	1,866	11,827
2035	9,714	240	1,903	11,857
2040	9,910	238	1,927	12,075
2045	10,426	249	1,948	12,623
2050	10,742	256	1,966	12,964
2055	10,978	265	1,988	13,232
2060	10,951	266	2,008	13,225
2065	10,991	265	2,025	13,281
2070	11,138	267	2,039	13,444
2075	11,326	272	2,053	13,651
Low Cost:				
1999	4,851	182	1,449	6,481
2000	5,012	176	1,450	6,637
2005	5,988	177	1,527	7,692
2010	6,702	174	1,522	8,398
2015	7,195	158	1,500	8,853
2020	7,424	155	1,505	9,084
2025	7,701	164	1,559	9,424
2030	7,698	161	1,636	9,495
2035	7,684	156	1,708	9,548
2040	7,861	154	1,765	9,780
2045	8,303	162	1,816	10,281
2050	8,605	168	1,875	10,647
2055	8,874	176	1,945	10,995
2060	8,990	178	2,017	11,185
2065	9,221	182	2,086	11,489
2070	9,579	188	2,153	11,920
2075	9,985	196	2,221	12,401

Table II.H3.—DI Beneficiaries With Monthly Benefits in Current-Payment Status as of December 31 by Alternative, Calendar Years 1960-2075 (Cont.)

[In thousands]

Calendar year	Disabled worker	Auxiliaries: Wife-husband	Auxiliaries: Child	Total
High Cost:				
1999	4,969	188	1,489	6,645
2000	5,280	188	1,533	7,001
2005	7,170	215	1,821	9,206
2010	8,652	247	1,924	10,823
2015	10,120	264	2,010	12,394
2020	10,957	291	2,016	13,264
2025	11,678	331	2,022	14,030
2030	11,832	341	2,020	14,192
2035	11,859	338	2,002	14,200
2040	12,090	334	1,982	14,406
2045	12,690	347	1,968	15,004
2050	13,014	352	1,939	15,306
2055	13,191	360	1,908	15,459
2060	12,956	354	1,872	15,182
2065	12,699	345	1,833	14,878
2070	12,517	339	1,795	14,651
2075	12,375	337	1,760	14,471

Note: Totals do not necessarily equal the sums of rounded components.

8. Average Benefits

Average benefits were projected by type of benefit based on recent historical averages, projected average Primary Insurance Amounts (PIAs), and projected ratios of average benefits to average PIAs. Average PIAs were calculated from projected distributions of beneficiaries by duration from year of award, average awarded PIAs, and increases thereto since the year of award, reflecting automatic benefit increases, recomputations to reflect additional covered earnings, and other factors. Average awarded PIAs were calculated from projected earnings histories, which were developed from the actual earnings histories associated with a sample of awards made in 1997. A sample of 1996 awards was used for the 1998 report.

For several types of benefits—retired-worker, aged-spouse, and aged-widow(er) benefits—the percentage of the PIA that is payable depends on the age at initial entitlement to benefits. Projected ratios of average benefits to average PIAs for these types of benefits were based on projections of age distributions at initial entitlement.

9. Benefit Payments

For each type of benefit, benefit payments were calculated as the product of a number of beneficiaries and a corresponding average monthly benefit. In the short-range period, benefit payments were cal-

culated on a quarterly basis. In the long-range period, all benefit payments were calculated on an annual basis, using the number of beneficiaries on December 31. These amounts were adjusted to include retroactive payments to newly awarded beneficiaries, and other amounts not reflected in the regular monthly benefit payments.

Lump-sum death payments were calculated as the product of (1) the number of such payments, which was projected on the basis of the assumed death rates, the projected fully insured population, and the estimated percentage of the fully insured population that would qualify for benefits, and (2) the amount of the lump-sum death payment, which is $255 (not indexed in future years).

10. Administrative Expenses

The projection of administrative expenses through 2008 was based on assumed increases in average wages, increases in the CPI, and increases in the number of beneficiaries. For years after 2008, administrative expenses are assumed to increase because of increases in the number of beneficiaries and increases in the average wage which will more than offset assumed improvements in administrative productivity.

11. Railroad Retirement Financial Interchange

Railroad workers are covered under a separate multi-tiered plan, the first tier being very similar to OASDI coverage. An annual financial interchange between the Railroad Retirement fund and the OASI and DI funds is made reflecting the difference between (1) the amount of OASDI benefits that would be paid to railroad workers and their families if railroad employment had been covered under the OASDI program and (2) the amount of OASDI payroll tax that would be received from railroad workers if they were covered directly under the OASDI program.

The effect of the financial interchange with the Railroad Retirement program was evaluated on the basis of trends similar to those used in estimating the cost of OASDI benefits. The resulting effect was annual short-range costs of about $3-5 billion and a long-range summarized cost of 0.05 percent of taxable payroll to the OASDI program.

12. Benefits to Uninsured Persons

The law provides for special monthly cash payments to certain uninsured persons who attained age 72 before 1968 or who have 3 quarters of coverage for each year after 1966 and before the year of attainment of age 72. The number of such uninsured persons was projected based on an extrapolation of the historical survival rate of the members of that group. The benefit payable to these uninsured persons is a fixed amount which increases by the percentage benefit increase applicable to regular OASDI benefits. These payments are made from the OASI Trust Fund, which is then reimbursed from the general fund of the Treasury for the costs (including administrative expenses and interest) associated with providing payments to those persons with fewer than 3 quarters of coverage. The nonreimbursable payments are assumed to be insignificant after 2000. Neither the reimbursable payments nor the associated reimbursements are reflected in the cost rates or the income rates. These amounts are reflected, however, in tables which show trust fund operations.

13. Military-Service Transfers

As a result of the 1983 amendments, the OASI and DI Trust Funds received lump-sum payments, in May 1983, for the cost (including administrative expenses) of providing additional benefit payments resulting from noncontributory wage credits for military service performed prior to 1957. Adjustments to the payments were made in 1985, 1990, and 1995, and additional adjustments will be made in 2000 and every fifth year thereafter. The adjustments for 2000 were estimated based on the change in interest rates since the determination of the adjustments in 1995. No adjustments after 1995 would be due unless actual interest rates are different from those assumed, or changes are made in the methods used to determine the military-service transfers.

14. Income From Taxation of Benefits

Under present law, the OASI and DI Trust Funds are credited with the additional income taxes attributable to the taxation of the first 50 percent of OASDI benefit payments. (The remainder of the income taxes attributable to the taxation of up to 85 percent of OASDI benefit payments is credited to the HI Trust Fund.) For the short-range period, income to the trust funds from such taxation was estimated by

applying the following two factors to total OASI and DI benefit payments: (1) the percentage of benefit payments (limited to 50 percent) that is taxable, and (2) the average tax rate applicable to those benefits. For the long-range period, income to the trust funds from such taxation was estimated by applying projected ratios of such income to total OASI and DI benefit payments. Because the income thresholds used for benefit taxation are, by law, constant in the future, their values in relation to future income and benefit levels will decline. Thus, ratios of income from taxation of benefits to the amount of benefits are projected to increase. These ratios were projected reflecting the results of a model developed by the Office of Tax Analysis, Department of the Treasury, relating OASDI benefit payments to total personal income for a sample of recent tax returns.

III. APPENDICES

A. ACTUARIAL ESTIMATES FOR THE OASDI AND HI PROGRAMS, COMBINED

In this appendix, long-range actuarial estimates for the OASDI and Hospital Insurance (HI) programs are combined to facilitate analysis of the adequacy of the combined income and assets of the trust funds relative to their combined expenditures. Combining cost and income rates as percentages of taxable payroll requires a note of caution. The taxable payrolls for the HI program are larger than those estimated for the OASDI program because (1) a larger maximum taxable amount was established for the HI program in 1991, with the maximum being eliminated altogether for the HI program in 1994, (2) a larger proportion of Federal, State, and local government employees have their wages covered under the HI program, and (3) the earnings of railroad workers are included directly in the HI taxable payroll but not in the OASDI taxable payroll (railroad contributions for the equivalent of OASDI benefits are accounted for in a net interchange that occurs annually between the OASDI and Railroad Retirement programs). As a result, the HI taxable payroll is about 25 percent larger than the OASDI taxable payroll throughout the long-range period. Nonetheless, combined OASDI and HI rates shown in this appendix are computed by adding the separately derived rates for the programs. The resulting combined rates may be interpreted as those applicable to the taxable payroll in the amount of the OASDI payroll, with the separate HI rates being additionally applicable to the excess of the HI payroll over the OASDI payroll.

Long-range estimates are subject to much uncertainty and should not be considered precise forecasts. Instead they should be considered as indicative of the general trend and range of costs that could reasonably be expected to occur. The emphasis in this appendix on combined operations, while significant, should not obscure the analysis of the financial status of the individual trust funds, which are legally separate and cannot be commingled. In addition, the factors which determine the costs of the OASI, DI, and HI programs differ substantially.

As with the OASI and DI Trust Funds, income to the HI Trust Fund comes primarily from contributions paid by employees, employers, and self-employed persons. The combined OASDI and HI contribution rate for employees and their employers is often referred to as the

FICA tax, because it is authorized by the Federal Insurance Contributions Act. Contribution rates for the OASDI and HI programs are shown in table III.A1.

Table III.A1.—Contribution Rates for the OASDI and HI Programs

[In percent]

Calendar years	Employees and employers, each			Self employed		
	OASDI	HI	Combined	OASDI	HI	Combined
1966	3.85	0.35	4.20	5.80	0.35	6.15
1967	3.90	.50	4.40	5.90	.50	6.40
1968	3.80	.60	4.40	5.80	.60	6.40
1969-70	4.20	.60	4.80	6.30	.60	6.90
1971-72	4.60	.60	5.20	6.90	.60	7.50
1973	4.85	1.00	5.85	7.00	1.00	8.00
1974-77	4.95	.90	5.85	7.00	.90	7.90
1978	5.05	1.00	6.05	7.10	1.00	8.10
1979-80	5.08	1.05	6.13	7.05	1.05	8.10
1981	5.35	1.30	6.65	8.00	1.30	9.30
1982-83	5.40	1.30	6.70	8.05	1.30	9.35
1984 [1]	5.70	1.30	7.00	11.40	2.60	14.00
1985	5.70	1.35	7.05	11.40	2.70	14.10
1986-87	5.70	1.45	7.15	11.40	2.90	14.30
1988-89	6.06	1.45	7.51	12.12	2.90	15.02
1990 and later	6.20	1.45	7.65	12.40	2.90	15.30

[1] See footnote 1 under table II.B1 in the section titled "Description of the Trust Funds" for a description of tax credits allowed against the combined OASDI and HI taxes on net earnings from self-employment in 1984-89.

Table III.A2 shows estimated annual income rates and cost rates for the OASDI program, the HI program, and the combined OASDI and HI programs, based on the low cost, intermediate, and high cost sets of assumptions (alternatives I, II, and III) described earlier in this report. These annual rates are intended to indicate the cash-flow operation of the programs. Therefore, income rates exclude interest earned on trust fund assets and cost rates exclude the cost of accumulating or maintaining target trust fund balances. Table III.A2 also shows the differences between income rates and cost rates, called balances. Estimates shown for the combined trust funds are theoretical because no authority currently exists for transferring assets from one trust fund to another.

Under all three sets of assumptions, combined OASDI and HI cost rates are projected to rise above current levels, with the sharpest increase occurring during the period 2010-30. Under the high cost set of assumptions, alternative III, annual deficits are projected to occur beginning in 2006, and to continue for the remainder of the 75-year projection period. Cost rates are projected to rise to over three times their current level by the end of the projection period. Under the

intermediate assumptions, alternative II, annual deficits begin in 2013, with cost rates nearly doubling by the end of the projection period. Under the low cost assumptions, alternative I, cost rates are projected to increase by about 30 percent, with annual deficits beginning by 2020.

Table III.A2.—Comparison of Estimated Income Rates and Cost Rates [1] for OASDI and HI by Alternative, Calendar Years 1999-2075

[As a percentage of taxable payroll [1]]

Calendar year	OASDI			HI			Combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Intermediate:									
1999	12.70	10.80	1.90	3.02	3.10	-0.08	15.72	13.90	1.82
2000	12.65	10.79	1.86	3.04	3.10	-.05	15.70	13.89	1.81
2001	12.67	10.83	1.85	3.05	3.09	-.04	15.72	13.92	1.80
2002	12.68	10.91	1.76	3.05	3.10	-.05	15.73	14.01	1.71
2003	12.68	10.99	1.69	3.05	3.11	-.06	15.74	14.10	1.64
2004	12.69	11.08	1.61	3.06	3.14	-.08	15.75	14.22	1.52
2005	12.70	11.18	1.52	3.06	3.17	-.11	15.76	14.35	1.41
2006	12.71	11.29	1.42	3.06	3.20	-.14	15.77	14.49	1.28
2007	12.71	11.41	1.31	3.07	3.24	-.17	15.78	14.65	1.13
2008	12.73	11.55	1.18	3.07	3.27	-.20	15.80	14.82	.98
2010	12.75	11.91	.84	3.08	3.33	-.26	15.82	15.24	.58
2015	12.82	13.26	-.45	3.10	3.60	-.50	15.92	16.86	-.94
2020	12.91	15.03	-2.12	3.14	4.00	-.86	16.06	19.03	-2.97
2025	13.01	16.62	-3.61	3.20	4.54	-1.35	16.21	21.16	-4.96
2030	13.09	17.71	-4.62	3.24	5.09	-1.85	16.33	22.80	-6.47
2035	13.15	18.19	-5.05	3.27	5.52	-2.24	16.42	23.71	-7.29
2040	13.17	18.18	-5.00	3.29	5.79	-2.50	16.46	23.97	-7.50
2045	13.19	18.15	-4.96	3.31	5.96	-2.65	16.50	24.11	-7.61
2050	13.22	18.28	-5.06	3.32	6.06	-2.74	16.54	24.34	-7.80
2055	13.25	18.64	-5.39	3.34	6.16	-2.82	16.59	24.80	-8.21
2060	13.29	19.05	-5.77	3.36	6.33	-2.97	16.65	25.38	-8.73
2065	13.32	19.37	-6.05	3.38	6.55	-3.17	16.69	25.92	-9.22
2070	13.34	19.63	-6.29	3.39	6.78	-3.39	16.73	26.41	-9.68
2075	13.36	19.90	-6.53	3.41	6.99	-3.59	16.77	26.89	-10.12
Low Cost:									
1999	12.70	10.67	2.03	3.02	3.05	-.03	15.72	13.72	2.00
2000	12.63	10.54	2.10	3.04	2.99	.05	15.68	13.53	2.14
2001	12.67	10.48	2.19	3.04	2.94	.11	15.71	13.41	2.30
2002	12.67	10.43	2.23	3.05	2.90	.15	15.71	13.33	2.38
2003	12.67	10.42	2.25	3.05	2.87	.18	15.72	13.29	2.43
2004	12.67	10.42	2.25	3.05	2.86	.19	15.72	13.28	2.45
2005	12.68	10.43	2.25	3.05	2.84	.21	15.73	13.27	2.46
2006	12.68	10.45	2.24	3.05	2.83	.22	15.74	13.28	2.46
2007	12.69	10.47	2.22	3.06	2.82	.23	15.75	13.30	2.45
2008	12.70	10.52	2.18	3.06	2.81	.25	15.76	13.33	2.43
2010	12.71	10.74	1.97	3.06	2.78	.28	15.78	13.52	2.25
2015	12.77	11.77	1.00	3.08	2.79	.29	15.85	14.56	1.29
2020	12.85	13.23	-.38	3.11	2.89	.23	15.96	16.11	-.15
2025	12.92	14.44	-1.52	3.16	3.03	.13	16.08	17.47	-1.39
2030	12.98	15.13	-2.15	3.19	3.12	.07	16.17	18.25	-2.08
2035	13.01	15.22	-2.21	3.21	3.17	.04	16.22	18.39	-2.17
2040	13.02	14.86	-1.84	3.22	3.19	.03	16.24	18.05	-1.81
2045	13.02	14.51	-1.49	3.22	3.21	.01	16.24	17.72	-1.48
2050	13.03	14.32	-1.29	3.23	3.26	-.03	16.26	17.58	-1.32
2055	13.04	14.31	-1.27	3.24	3.31	-.08	16.28	17.63	-1.35
2060	13.06	14.30	-1.24	3.25	3.40	-.16	16.30	17.71	-1.40
2065	13.06	14.19	-1.13	3.25	3.52	-.27	16.31	17.71	-1.40
2070	13.07	14.08	-1.02	3.25	3.65	-.39	16.32	17.73	-1.41
2075	13.07	14.05	-.98	3.26	3.77	-.51	16.33	17.82	-1.49

Table III.A2.—Comparison of Estimated Income Rates and Cost Rates [1] for OASDI and HI by Alternative, Calendar Years 1999-2075 (Cont.)

[As a percentage of taxable payroll [1]]

Calendar year	OASDI			HI			Combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
High Cost:									
1999	12.70	10.82	1.88	3.02	3.16	-0.14	15.72	13.98	1.74
2000	12.68	11.09	1.59	3.05	3.24	-.19	15.73	14.34	1.39
2001	12.68	11.05	1.63	3.05	3.24	-.19	15.73	14.29	1.44
2002	12.68	11.24	1.44	3.05	3.26	-.21	15.74	14.50	1.24
2003	12.71	12.02	.68	3.07	3.41	-.35	15.77	15.43	.34
2004	12.71	12.04	.67	3.07	3.47	-.40	15.78	15.51	.27
2005	12.72	12.13	.59	3.07	3.53	-.46	15.79	15.66	.13
2006	12.73	12.29	.44	3.07	3.63	-.55	15.80	15.92	-.12
2007	12.74	12.50	.25	3.08	3.72	-.64	15.82	16.22	-.40
2008	12.76	12.72	.04	3.08	3.82	-.73	15.84	16.54	-.70
2010	12.78	13.21	-.43	3.09	4.01	-.92	15.88	17.22	-1.34
2015	12.88	14.82	-1.94	3.13	4.69	-1.56	16.01	19.51	-3.50
2020	13.00	16.87	-3.87	3.18	5.66	-2.48	16.18	22.53	-6.35
2025	13.12	18.88	-5.77	3.25	7.02	-3.77	16.37	25.90	-9.54
2030	13.22	20.49	-7.26	3.31	8.55	-5.24	16.53	29.04	-12.50
2035	13.31	21.54	-8.23	3.36	9.87	-6.51	16.66	31.40	-14.74
2040	13.36	22.13	-8.76	3.39	10.79	-7.40	16.76	32.92	-16.16
2045	13.41	22.73	-9.31	3.42	11.34	-7.92	16.83	34.07	-17.23
2050	13.47	23.51	-10.04	3.45	11.57	-8.11	16.92	35.08	-18.15
2055	13.54	24.62	-11.07	3.49	11.77	-8.28	17.03	36.39	-19.35
2060	13.62	25.86	-12.24	3.54	12.09	-8.56	17.16	37.95	-20.79
2065	13.70	27.06	-13.36	3.58	12.50	-8.92	17.28	39.56	-22.28
2070	13.77	28.18	-14.41	3.62	12.95	-9.33	17.38	41.12	-23.74
2075	13.83	29.22	-15.39	3.65	13.37	-9.72	17.48	42.60	-25.11

[1] The taxable payroll for HI is significantly larger than the taxable payroll for OASDI because the HI taxable maximum amount was eliminated beginning 1994, and because HI covers all Federal civilian employees, including those hired before 1984, all State and local government employees hired after April 1, 1986, and railroad employees. Combined OASDI and HI rates are computed as the sum of the separately derived rates for each program.

Notes:

1. The income rate excludes interest income and certain transfers from the general fund of the Treasury.
2. Totals do not necessarily equal the sums of rounded components.

Tables III.A3 and III.A4 show the estimates of summarized OASDI and HI income rates, cost rates and balances for various time periods, based on all three sets of assumptions. In table III.A3 values are summarized over the three 25-year subperiods (excluding the beginning fund balances and the cost of accumulating ending fund targets). In table III.A4 values are summarized over the 25-year, 50-year, and 75-year valuation periods (for which beginning fund balances are included in the summarized income rates, and the costs of accumulating an ending fund balance equal to 100 percent of annual expenditures by the end of the period are included in the summarized cost rates). Estimates shown for the combined trust funds are theoretical because no authority currently exists for transferring assets from one trust fund to another.

Table III.A3.—Comparison of Summarized Income Rates and Cost Rates [1] for 25-Year Subperiods [2], for OASDI and HI by Alternative, Calendar Years 1999-2073

[As a percentage of taxable payroll [1]]

	OASDI			HI			Combined		
Subperiod	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Intermediate:									
1999-2023 . . .	12.78	12.50	0.28	3.09	3.46	-0.37	15.87	15.96	-0.09
2024-2048 . . .	13.12	17.79	-4.67	3.26	5.38	-2.12	16.38	23.17	-6.79
2049-2073 . . .	13.28	18.99	-5.71	3.36	6.38	-3.02	16.64	25.37	-8.73
Low Cost:									
1999-2023 . . .	12.74	11.38	1.36	3.07	2.86	.21	15.81	14.24	1.57
2024-2048 . . .	12.99	14.85	-1.85	3.20	3.15	.05	16.19	17.99	-1.80
2049-2073 . . .	13.05	14.24	-1.19	3.24	3.43	-.19	16.29	17.67	-1.38
High Cost:									
1999-2023 . . .	12.82	13.70	-.88	3.11	4.27	-1.16	15.93	17.97	-2.04
2024-2048 . . .	13.28	21.18	-7.89	3.34	9.49	-6.15	16.62	30.67	-14.05
2049-2073 . . .	13.62	25.80	-12.19	3.53	12.16	-8.63	17.15	37.97	-20.82

[1] The taxable payroll for HI is significantly larger than the taxable payroll for OASDI because the HI taxable maximum amount was eliminated beginning 1994, and because HI covers all Federal civilian employees, including those hired before 1984, all State and local government employees hired after April 1, 1986, and railroad employees. Combined OASDI and HI rates are computed as the sum of the separately derived rates for each program.

[2] For 25-year subperiods, income rates do not include beginning trust fund balances and cost rates do not include the cost of reaching ending fund targets.

Note: Totals do not necessarily equal the sums of rounded components.

Under the high cost alternative III, the combined OASDI and HI system is projected to experience large deficits during the 25-year, 50-year, and 75-year valuation periods (table III.A4, including beginning trust fund balances and the cost of ending fund targets). Deficits are projected to occur during each 25-year subperiod of the 75-year projection period (table III.A3, excluding beginning trust fund balances and the cost of ending fund targets). Under intermediate alternative II assumptions, deficits of smaller magnitude than those for the high cost alternative III are projected to occur for each of the three 25-year subperiods, and for the 50-year and the 75-year valuation periods. Under the low cost alternative I, the combined OASDI and HI system is projected to show positive balances for the first 25-year subperiod and for each of the three valuation periods. Relatively small deficits are projected for the second and third 25-year subperiods.

Table III.A4.—Comparison of Summarized Income Rates and Cost Rates [1] for Valuation Periods [2], for OASDI and HI by Alternative, Calendar Years 1999-2073

[As a percentage of taxable payroll [1]]

	OASDI			HI			Combined		
Valuation period	Income rate	Cost rate	Actuarial balance	Income rate	Cost rate	Actuarial balance	Income rate	Cost rate	Actuarial balance
Intermediate:									
25-years:									
1999-2023 . . .	13.81	13.04	0.77	3.21	3.60	-0.40	17.02	16.64	0.38
50-years:									
1999-2048 . . .	13.54	14.80	-1.26	3.23	4.31	-1.08	16.77	19.11	-2.34
75-years:									
1999-2073 . . .	13.49	15.56	-2.07	3.26	4.71	-1.46	16.75	20.27	-3.52
Low Cost:									
25-years:									
1999-2023 . . .	13.74	11.84	1.90	3.19	2.96	.23	16.93	14.80	2.13
50-years:									
1999-2048 . . .	13.45	12.92	.53	3.19	3.02	.17	16.64	15.94	.70
75-years:									
1999-2073 . . .	13.37	13.14	.23	3.20	3.11	.10	16.57	16.25	.33
High Cost:									
25-years:									
1999-2023 . . .	13.85	14.32	-.47	3.23	4.48	-1.25	17.08	18.80	-1.72
50-years:									
1999-2048 . . .	13.63	16.96	-3.34	3.28	6.45	-3.18	16.91	23.41	-6.51
75-years:									
1999-2073 . . .	13.62	18.60	-4.97	3.32	7.47	-4.15	16.95	26.07	-9.12

[1] The taxable payroll for HI is significantly larger than the taxable payroll for OASDI because the HI taxable maximum amount was eliminated beginning 1994, and because HI covers all Federal civilian employees, including those hired before 1984, all State and local government employees hired after April 1, 1986, and railroad employees. Combined OASDI and HI rates are computed as the sum of the separately derived rates for each program.

[2] Income rates include beginning trust fund balances and cost rates include the cost of reaching an ending fund target equal to 100 percent of annual expenditures by the end of the period.

Note: Totals do not necessarily equal the sums of rounded components.

B. LONG-RANGE ESTIMATES OF SOCIAL SECURITY TRUST FUND OPERATIONS IN DOLLARS

This appendix presents long-range projections in dollars of the operations of the combined OASI and DI Trust Funds and in some cases the HI Trust Fund. It provides the means to track the progress of the funds during the projection period. Meaningful comparison of current dollar values over long periods of time can be difficult because of the tendency toward inflation. Some means of removing inflation is thus generally desirable. Several economic series, or "indices," are provided to allow current dollars to be adjusted for changes in prices, wages, and certain other aspects of economic growth during the projection period.

The selection of a particular index for adjustment of current dollars depends upon the analyst's decision as to which index provides the most useful standard for adjusting dollar amounts, over time, to create values that are appropriately comparable. Table III.B1 presents five such indices for adjustment.

One of the most common forms of standardization is based on some measure of change in the prices of consumer goods. One such price index is the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W, hereafter referred to as "CPI") which is published by the Bureau of Labor Statistics, Department of Labor. This is the index used to determine annual increases in OASDI monthly benefits payable after the year of initial eligibility. The CPI is assumed to increase ultimately at annual rates of 2.3, 3.3, and 4.3 percent for the low cost, intermediate, and high cost sets of assumptions (alternatives I, II, and III, respectively). Constant-dollar values (those adjusted by the CPI) are provided in table III.B2.

Another type of standardization combines the effects of price inflation and real-wage growth. The wage index presented here is the "SSA average wage index," as defined in section 215(i)(1)(G) of the Social Security Act. This index is used to make annual adjustments to many earnings-related quantities embodied in the Social Security Act, such as the contribution and benefit base. The average annual wage is assumed to increase ultimately by 3.7, 4.2, and 4.7 percent under the low cost, intermediate, and high cost alternatives (I, II, and III), respectively.

The taxable payroll index adjusts for the effects of changes in the number of workers and changes in the proportion of earnings that are

taxable, as well as for the effects of price inflation and real-wage growth. The OASDI taxable payroll consists of all earnings subject to OASDI taxation, adjusted for the lower effective tax rate on multiple-employer "excess wages," and including deemed wage credits for military service.

The gross domestic product (GDP) index adjusts for the growth in the aggregate amount of goods and services produced in the United States. Values adjusted by GDP (see appendix C) indicate their relative share of the total output of the economy. No explicit assumptions are made about growth in taxable payroll or GDP. These series are computed reflecting the other more basic economic and demographic assumptions, as discussed in section II.H.

Discounting with interest is another way of adjusting current dollars. The series of interest-rate factors included here is based on the average of the assumed annual interest rates for special public-debt obligations issuable to the trust funds. This series is slightly different from the interest rates used to create summarized values elsewhere in this report, where the actual yield on currently held trust fund assets is used for each year. Ultimate nominal interest rates, which, in practice, are compounded semiannually, are assumed to be approximately 6.0, 6.3, and 6.5 percent for the low cost, intermediate, and high cost alternatives (I, II, and III), respectively.

Table III.B1.—Selected Economic Variables by Alternative, Calendar Years 1998-2075

[GDP and taxable payroll in billions]

Calendar year	Adjusted CPI [1]	SSA average wage index [2]	Taxable payroll [3]	Gross domestic product	Compound interest-rate factor [4]
Intermediate:					
1998	98.16	$28,893.68	$3,501	$8,509	0.9460
1999	100.00	29,732.49	3,649	8,845	1.0000
2000	102.09	30,629.66	3,791	9,194	1.0480
2001	104.61	31,647.10	3,944	9,591	1.0994
2002	107.31	32,741.79	4,106	10,020	1.1575
2003	110.26	33,943.43	4,283	10,488	1.2214
2004	113.58	35,259.52	4,475	11,001	1.2912
2005	117.15	36,668.51	4,690	11,560	1.3674
2006	120.90	38,149.91	4,918	12,154	1.4507
2007	124.83	39,731.81	5,158	12,784	1.5409
2008	128.95	41,419.56	5,410	13,446	1.6388
2010	137.60	44,971.87	5,961	14,850	1.8543
2015	161.85	55,243.29	7,502	18,863	2.5285
2020	190.38	67,860.68	9,347	23,723	3.4479
2025	223.94	83,359.84	11,578	29,668	4.7016
2030	263.41	102,398.97	14,352	37,152	6.4111
2035	309.83	125,786.55	17,846	46,668	8.7421
2040	364.44	154,515.75	22,211	58,640	11.9208
2045	428.68	189,806.61	27,555	73,438	16.2552
2050	504.23	233,157.80	34,083	91,706	22.1657
2055	593.11	286,410.22	42,061	114,252	30.2252
2060	697.64	351,825.34	51,902	142,346	41.2151
2065	820.61	432,181.03	64,091	177,455	56.2010
2070	965.24	530,889.63	79,117	221,171	76.6358
2075	1,135.37	652,143.06	97,589	275,416	104.5008
Low Cost:					
1998	98.28	28,896.73	3,503	8,513	.9460
1999	100.00	29,878.58	3,682	8,910	1.0000
2000	101.91	30,847.90	3,857	9,292	1.0480
2001	104.00	31,913.95	4,032	9,704	1.0985
2002	106.28	32,996.29	4,216	10,146	1.1551
2003	108.68	34,166.69	4,405	10,619	1.2170
2004	111.14	35,394.01	4,606	11,120	1.2840
2005	113.72	36,650.33	4,818	11,644	1.3563
2006	116.37	37,950.65	5,042	12,195	1.4336
2007	119.02	39,347.35	5,274	12,772	1.5163
2008	121.72	40,821.93	5,514	13,368	1.6048
2010	127.39	43,898.64	6,030	14,629	1.8017
2015	142.73	52,643.51	7,443	18,148	2.4208
2020	159.91	63,130.41	9,097	22,295	3.2526
2025	179.17	75,706.34	11,070	27,279	4.3702
2030	200.74	90,787.48	13,526	33,518	5.8718
2035	224.91	108,872.88	16,631	41,448	7.8894
2040	252.00	130,561.02	20,532	51,426	10.6002
2045	282.34	156,569.56	25,337	63,753	14.2425
2050	316.34	187,759.16	31,226	78,930	19.1364
2055	354.43	225,161.89	38,468	97,676	25.7117
2060	397.11	270,015.47	47,475	121,081	34.5464
2065	444.92	323,804.16	58,704	150,371	46.4168
2070	498.50	388,307.84	72,583	186,749	62.3659
2075	558.52	465,661.06	89,646	231,672	83.7952

Table III.B1.—Selected Economic Variables by Alternative, Calendar Years 1998-2075 (Cont.)

[GDP and taxable payroll in billions]

Calendar year	Adjusted CPI [1]	SSA average wage index [2]	Taxable payroll [3]	Gross domestic product	Compound interest-rate factor [4]
High Cost:					
1998	97.56	$28,782.44	$3,500	$8,505	0.9460
1999	100.00	29,696.91	3,654	8,857	1.0000
2000	103.73	30,542.48	3,745	9,112	1.0507
2001	109.35	32,467.84	4,004	9,844	1.1107
2002	115.88	34,480.02	4,269	10,548	1.1905
2003	120.65	35,349.69	4,340	10,778	1.2873
2004	125.66	37,253.45	4,618	11,553	1.3910
2005	131.09	39,217.05	4,906	12,320	1.4940
2006	136.71	41,102.32	5,186	13,038	1.5969
2007	142.58	43,011.06	5,466	13,788	1.7084
2008	148.69	45,012.60	5,758	14,581	1.8258
2010	161.75	49,343.22	6,393	16,258	2.0798
2015	199.65	62,081.31	8,217	21,182	2.8622
2020	246.42	78,107.78	10,455	27,325	3.9389
2025	304.16	98,271.53	13,201	34,990	5.4207
2030	375.43	123,640.62	16,628	44,724	7.4599
2035	463.39	155,558.80	20,935	57,142	10.2661
2040	571.97	195,716.73	26,280	72,751	14.1281
2045	705.98	246,241.58	32,771	92,009	19.4428
2050	871.39	309,809.56	40,646	115,775	26.7568
2055	1,075.56	389,787.78	50,176	145,009	36.8223
2060	1,327.56	490,412.59	61,808	181,249	50.6742
2065	1,638.62	617,014.00	76,064	226,329	69.7369
2070	2,022.55	776,297.94	93,530	282,389	95.9707
2075	2,496.44	976,701.56	114,907	352,058	132.0732

[1] The CPI used to adjust OASDI benefits is the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI), as defined by the Bureau of Labor Statistics, Department of Labor. The values shown are adjusted by dividing the calendar-year annual average CPI by the analogous value for 1999, and multiplying the result by 100, thereby initializing the CPI at 100 for 1999.

[2] The "SSA average wage index" is defined in section 215(i)(1)(G) of the Social Security Act; it is used in the calculations of initial benefits and the automatic adjustment of the contribution and benefit base and other wage-indexed program amounts.

[3] Taxable payroll consists of total earnings subject to OASDI contribution rates, adjusted to include deemed wages based on military service and to reflect the lower effective contribution rates (compared to the combined employee-employer rate) which apply to multiple-employer "excess wages."

[4] The compound interest-rate factor is based on the average of the assumed annual interest rates for special public-debt obligations issuable to the trust funds in the 12 months of the year, under each alternative.

Table III.B2 shows estimated operations of the combined OASI and DI Trust Funds in constant 1999 dollars (i.e., adjusted by the CPI indexing series as discussed above). Items included in the table are: income excluding interest, interest income, total income, total outgo, and assets at the end of the year. Income excluding interest consists of payroll-tax contributions, income from taxation of benefits, and miscellaneous reimbursements from the general fund of the Treasury. Outgo consists of benefit payments, administrative expenses, net transfers from the OASI and DI Trust Funds to the Railroad Retirement program under the financial-interchange provisions, and payments for vocational rehabilitation services for disabled beneficiaries. These estimates are based on the low cost, intermediate, and high cost sets of assumptions (alternatives I, II, and III).

Table III.B2.—Estimated Operations of the Combined OASI and DI Trust Funds in Constant 1999 Dollars [1] by Alternative, Calendar Years 1999-2075

[In billions]

Calendar year	Income excluding interest	Interest income	Total income	Outgo	Assets at end of year
Intermediate:					
1999	$464.3	$54.1	$518.3	$394.0	$886.8
2000	469.4	57.7	527.1	400.7	995.1
2001	477.7	62.0	539.7	408.3	1,102.5
2002	484.7	66.8	551.4	417.6	1,208.5
2003	492.0	71.8	563.8	426.9	1,313.1
2004	499.0	77.0	576.0	436.7	1,414.0
2005	507.8	82.7	590.5	447.4	1,514.0
2006	515.7	88.6	604.2	459.1	1,612.1
2007	525.0	94.7	619.7	471.4	1,709.7
2008	533.0	101.0	634.0	484.4	1,804.8
2010	551.3	114.6	665.9	516.0	1,986.6
2015	593.2	141.2	734.4	614.8	2,326.1
2020	633.1	143.6	776.7	738.0	2,321.6
2025	671.7	117.8	789.5	859.4	1,850.4
2030 [2]	712.2	62.7	774.9	965.2	899.2
Low Cost:					
1999	466.5	54.1	520.6	392.9	890.2
2000	477.7	58.1	535.8	398.9	1,010.5
2001	490.9	63.0	553.9	406.2	1,137.9
2002	501.9	68.7	570.6	413.9	1,270.2
2003	512.8	74.8	587.6	422.2	1,407.6
2004	524.2	81.6	605.8	431.9	1,550.2
2005	536.7	89.0	625.8	442.0	1,698.7
2006	548.4	97.0	645.3	452.6	1,852.8
2007	562.1	105.6	667.7	464.2	2,015.2
2008	574.4	115.0	689.4	476.7	2,183.0
2010	601.0	137.6	738.6	508.5	2,532.7
2015	665.0	196.1	861.1	613.8	3,431.5
2020	729.9	240.8	970.7	752.3	4,171.9
2025	797.4	270.1	1,067.5	892.3	4,643.9
2030	873.4	284.5	1,158.0	1,019.6	4,866.9
2035	960.8	290.2	1,251.0	1,125.5	4,954.4
2040	1,059.4	296.6	1,356.0	1,210.5	5,070.6
2045	1,167.0	309.9	1,476.9	1,302.1	5,307.1
2050	1,284.4	329.5	1,613.9	1,413.6	5,649.1
2055	1,413.8	352.4	1,766.2	1,553.6	6,040.0
2060	1,558.8	375.8	1,934.6	1,709.6	6,439.5
2065	1,721.1	402.1	2,123.2	1,872.6	6,893.3
2070	1,899.8	433.9	2,333.6	2,050.8	7,443.5
2075	2,095.0	471.0	2,566.0	2,255.2	8,081.3
High Cost:					
1999	464.6	54.3	518.9	395.5	885.9
2000	457.6	57.8	515.4	400.5	969.0
2001	463.5	62.3	525.7	404.5	1,040.4
2002	466.9	68.5	535.5	414.1	1,103.1
2003	456.3	74.9	531.2	432.4	1,158.3
2004	465.6	79.3	544.9	442.6	1,214.5
2005	475.7	82.8	558.5	453.9	1,268.8
2006	481.6	86.1	567.8	466.4	1,317.9
2007	488.0	89.1	577.0	479.1	1,361.7
2008	493.0	91.6	584.6	492.6	1,397.8
2010	504.3	93.1	597.4	522.2	1,440.8
2015	529.0	85.1	614.1	610.0	1,325.9
2020 [2]	550.4	54.3	604.7	715.7	784.5

[1] The adjustment from current to constant dollars is by the CPI indexing series shown in table III.B1.
[2] Estimates for later years are not shown because the combined OASI and DI Trust Funds are estimated to become exhausted in 2034 under the intermediate assumptions and in 2024 under the high cost assumptions.

Note: Totals do not necessarily equal the sums of rounded components.

Figure III.B1 provides a comparison of outgo with total annual income (including interest) and annual income excluding interest, for the OASDI program under intermediate assumptions. All values are expressed in constant dollars, as shown in table III.B2. The difference between the income values for each year is equal to the trust fund interest earnings. Thus the figure illustrates the fact that, under intermediate assumptions, combined OASDI expenditures will be payable from (1) current tax income alone through 2013, (2) current tax income plus a portion of annual interest income for years 2014 through 2021, and (3) current tax income, annual interest income, plus a portion of the principal balance in the trust funds for years 2022 through 2033, i.e., through the year preceding the year of trust fund exhaustion.

Figure III.B1.—Estimated OASDI Income and Outgo in Constant Dollars, Based on Alternative II by Calendar Year
[In billions]

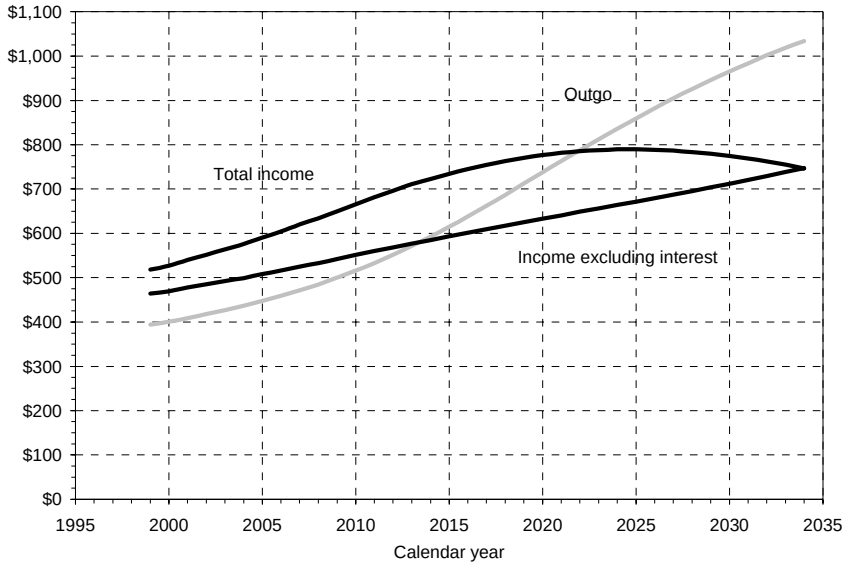


Table III.B3 shows estimated operations of the combined OASI and DI Trust Funds in current dollars—that is in dollars unadjusted for price inflation. Items included in the table are: income excluding interest, interest income, total income, total outgo, and assets at the end of the year. These estimates, based on the low cost, intermediate, and high cost sets of economic and demographic assumptions (I, II, and III), are presented to facilitate independent analysis.

Table III.B3.—Estimated Operations of the Combined OASI and DI Trust Funds in Current Dollars by Alternative, Calendar Years 1999-2075

[In billions]

Calendar year	Income excluding interest	Interest income	Total income	Outgo	Assets at end of year
Intermediate:					
1999	$464.3	$54.1	$518.3	$394.0	$886.8
2000	479.2	58.9	538.1	409.1	1,015.8
2001	499.7	64.8	564.5	427.1	1,153.3
2002	520.1	71.6	591.7	448.2	1,296.9
2003	542.5	79.2	621.7	470.7	1,447.8
2004	566.7	87.5	654.2	496.0	1,606.0
2005	594.9	96.8	691.7	524.1	1,773.6
2006	623.4	107.1	730.5	555.1	1,949.0
2007	655.4	118.3	773.6	588.4	2,134.2
2008	687.3	130.3	817.6	624.6	2,327.2
2010	758.5	157.7	916.3	710.0	2,733.5
2015	960.1	228.5	1,188.6	995.0	3,764.8
2020	1,205.3	273.3	1,478.6	1,404.9	4,419.8
2025	1,504.1	263.9	1,768.0	1,924.5	4,143.6
2030 [1]	1,876.0	165.1	2,041.1	2,542.3	2,368.5
Low Cost:					
1999	466.5	54.1	520.6	392.9	890.2
2000	486.8	59.2	546.0	406.5	1,029.7
2001	510.5	65.5	576.0	422.4	1,183.4
2002	533.4	73.0	606.4	439.8	1,350.0
2003	557.3	81.3	638.6	458.9	1,529.7
2004	582.6	90.6	673.2	480.0	1,722.9
2005	610.4	101.2	711.6	502.7	1,931.8
2006	638.1	112.8	751.0	526.7	2,156.1
2007	669.0	125.7	794.7	552.5	2,398.4
2008	699.2	139.9	839.1	580.3	2,657.2
2010	765.5	175.3	940.9	647.8	3,226.3
2015	949.1	279.9	1,229.0	876.1	4,897.6
2020	1,167.1	385.1	1,552.3	1,203.1	6,671.4
2025	1,428.6	484.0	1,912.6	1,598.7	8,320.3
2030	1,753.4	571.2	2,324.6	2,046.8	9,769.8
2035	2,161.0	652.7	2,813.7	2,531.4	11,143.1
2040	2,669.5	747.5	3,417.0	3,050.5	12,777.6
2045	3,294.9	874.9	4,169.8	3,676.5	14,984.1
2050	4,063.2	1,042.3	5,105.5	4,471.7	17,870.3
2055	5,010.9	1,249.0	6,259.8	5,506.3	21,407.5
2060	6,190.0	1,492.4	7,682.4	6,789.0	25,571.5
2065	7,657.4	1,789.0	9,446.4	8,331.5	30,670.0
2070	9,470.2	2,162.9	11,633.2	10,222.9	37,105.8
2075	11,701.1	2,630.6	14,331.8	12,595.5	45,135.6
High Cost:					
1999	464.6	54.3	518.9	395.5	885.9
2000	474.6	60.0	534.6	415.5	1,005.1
2001	506.8	68.1	574.8	442.3	1,137.6
2002	541.1	79.4	620.5	479.9	1,278.3
2003	550.5	90.4	640.9	521.7	1,397.5
2004	585.1	99.6	684.8	556.1	1,526.1
2005	623.6	108.6	732.2	595.0	1,663.3
2006	658.5	117.7	776.2	637.7	1,801.8
2007	695.7	127.0	822.7	683.0	1,941.5
2008	733.0	136.2	869.2	732.4	2,078.3
2010	815.7	150.5	966.2	844.6	2,330.5
2015	1,056.1	169.9	1,226.1	1,217.9	2,647.2
2020 [1]	1,356.3	133.9	1,490.2	1,763.6	1,933.3

[1] Estimates for later years are not shown because the combined OASI and DI Trust Funds are estimated to become exhausted in 2034 under the intermediate assumptions and in 2024 under the high cost assumptions.

Note: Totals do not necessarily equal the sums of rounded components.

Table III.B4 shows, in current dollars, estimated income (excluding interest) and estimated total outgo (excluding the cost of accumulating target trust fund balances) of the combined OASI and DI Trust Funds, of the HI Trust Fund, and of the combined OASI, DI, and HI Trust Funds, based on the low cost, intermediate, and high cost sets of assumptions (alternatives I, II, and III) described earlier in this report. For OASDI, income excluding interest consists of payroll-tax contributions, proceeds from taxation of OASDI benefits, and miscellaneous transfers from the general fund of the Treasury. Outgo consists of benefit payments, administrative expenses, net transfers from the trust funds to the Railroad Retirement program, and payments for vocational rehabilitation services for disabled beneficiaries. For HI, income excluding interest consists of payroll-tax contributions (including contributions from railroad employment), proceeds from the taxation of OASDI benefits, and payments from the general fund of the Treasury for contributions on deemed wage credits for military service. Total outgo consists of outlays (benefits and administrative expenses) for insured beneficiaries. Income and outgo estimates are shown on a cash basis for the OASDI program and on an incurred basis for the HI program.

Table III.B4 also shows the difference between income excluding interest and outgo, which is called the balance. The balance indicates the size of the net cash flow from tax income and expenditures to the funds.

Table III.B4.—Estimated OASDI and HI Income Excluding Interest, Outgo, and Balance in Current Dollars by Alternative, Calendar Years 1999-2075

[In billions]

Calendar year	OASDI			HI			Combined		
	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance
Intermediate:									
1999	$464	$394	$70	$135	$138	-$4	$599	$532	$67
2000	479	409	70	141	143	-3	620	552	68
2001	500	427	73	147	149	-2	647	576	71
2002	520	448	72	153	156	-2	673	604	69
2003	542	471	72	160	163	-3	703	634	69
2004	567	496	71	168	173	-5	735	669	66
2005	595	524	71	177	183	-6	771	707	64
2006	623	555	68	186	194	-8	809	749	60
2007	655	588	67	195	206	-11	851	795	56
2008	687	625	63	205	219	-13	893	843	49
2010	759	710	49	227	245	-19	985	955	30
2015	960	995	-35	288	335	-46	1,248	1,330	-81
2020	1,205	1,405	-200	365	464	-99	1,570	1,869	-299
2025	1,504	1,925	-420	459	652	-193	1,963	2,577	-614
2030	1,876	2,542	-666	578	908	-330	2,454	3,450	-996
2035	2,342	3,247	-904	726	1,225	-498	3,069	4,472	-1,403
2040	2,921	4,037	-1,116	909	1,599	-690	3,831	5,636	-1,806
2045	3,630	5,001	-1,372	1,133	2,043	-910	4,763	7,044	-2,281
2050	4,498	6,230	-1,732	1,408	2,570	-1,161	5,906	8,800	-2,893
2055	5,565	7,842	-2,277	1,749	3,224	-1,475	7,314	11,066	-3,752
2060	6,886	9,888	-3,002	2,172	4,090	-1,918	9,058	13,978	-4,920
2065	8,522	12,413	-3,891	2,697	5,227	-2,530	11,219	17,640	-6,422
2070	10,539	15,531	-4,993	3,344	6,682	-3,338	13,883	22,213	-8,330
2075	13,020	19,415	-6,395	4,142	8,504	-4,363	17,162	27,920	-10,758
Low Cost:									
1999	467	393	74	136	137	-1	602	530	72
2000	487	407	80	143	140	2	629	547	83
2001	511	422	88	149	144	5	660	566	93
2002	533	440	94	156	148	7	689	588	101
2003	557	459	98	163	154	10	720	612	108
2004	583	480	103	171	160	11	753	640	113
2005	610	503	108	179	166	12	789	669	120
2006	638	527	111	187	173	14	825	700	125
2007	669	552	116	196	181	15	865	733	132
2008	699	580	119	205	189	17	905	769	136
2010	766	648	118	225	204	21	990	852	138
2015	949	876	73	280	254	26	1,229	1,130	99
2020	1,167	1,203	-36	346	321	25	1,513	1,524	-11
2025	1,429	1,599	-170	427	410	17	1,856	2,009	-153
2030	1,753	2,047	-293	528	516	12	2,281	2,563	-282
2035	2,161	2,531	-370	654	646	8	2,815	3,178	-363
2040	2,670	3,051	-381	810	803	7	3,479	3,853	-374
2045	3,295	3,676	-382	1,001	998	2	4,296	4,675	-379
2050	4,063	4,472	-408	1,236	1,247	-11	5,299	5,719	-420
2055	5,011	5,506	-495	1,527	1,563	-37	6,537	7,070	-532
2060	6,190	6,789	-599	1,889	1,981	-93	8,079	8,770	-692
2065	7,657	8,331	-674	2,338	2,533	-194	9,996	10,864	-868
2070	9,470	10,223	-753	2,893	3,242	-349	12,363	13,465	-1,102
2075	11,701	12,596	-894	3,577	4,137	-560	15,278	16,732	-1,454

Table III.B4.—Estimated OASDI and HI Income Excluding Interest, Outgo, and Balance in Current Dollars by Alternative, Calendar Years 1999-2075 (Cont.)

[In billions]

Calendar year	OASDI			HI			Combined		
	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance
High Cost:									
1999	$465	$395	$69	$135	$141	-$6	$600	$537	$63
2000	475	415	59	139	148	-9	614	564	50
2001	507	442	64	150	159	-10	657	602	55
2002	541	480	61	161	172	-11	702	652	50
2003	551	522	29	164	183	-19	715	704	10
2004	585	556	29	175	198	-23	760	754	6
2005	624	595	29	187	215	-28	811	810	(1)
2006	658	638	21	198	234	-36	857	872	-15
2007	696	683	13	210	254	-44	905	937	-31
2008	733	732	1	222	274	-53	955	1,007	-52
2010	816	845	-29	247	320	-73	1,063	1,165	-102
2015	1,056	1,218	-162	322	482	-160	1,378	1,700	-322
2020	1,356	1,764	-407	417	741	-324	1,773	2,504	-731
2025	1,728	2,493	-764	537	1,160	-623	2,265	3,653	-1,388
2030	2,195	3,406	-1,211	689	1,781	-1,092	2,884	5,187	-2,303
2035	2,781	4,509	-1,728	881	2,589	-1,708	3,662	7,098	-3,436
2040	3,507	5,815	-2,308	1,117	3,556	-2,439	4,624	9,371	-4,747
2045	4,389	7,448	-3,059	1,405	4,660	-3,255	5,795	12,108	-6,314
2050	5,467	9,556	-4,089	1,760	5,899	-4,139	7,228	15,455	-8,228
2055	6,785	12,352	-5,567	2,200	7,416	-5,217	8,985	19,768	-10,783
2060	8,407	15,983	-7,575	2,746	9,391	-6,645	11,153	25,373	-14,220
2065	10,405	20,582	-10,177	3,421	11,957	-8,536	13,826	32,539	-18,713
2070	12,860	26,356	-13,496	4,255	15,238	-10,983	17,115	41,594	-24,479
2075	15,872	33,578	-17,705	5,283	19,357	-14,075	21,155	52,935	-31,780

[1] Between -$500 million and $500 million.

Note: Totals do not necessarily equal the sums of rounded components.

Table III.B5 shows estimated future benefit amounts payable to persons attaining age 65 in various years based on retirement at the normal retirement age and at age 65, for various steady levels of pre-retirement earnings, based on intermediate assumptions. The benefit amount is shown in current dollars, constant dollars (adjusted by the CPI indexing series shown in table III.B1), and as a percentage of earnings in the 12-month period preceding retirement. The normal retirement age is currently 65 and is scheduled to increase to age 66 during the period 2000-05 (at a rate of 2 months per year as workers attain age 62) and to age 67 during the period 2017-22 (also by 2 months per year as workers attain age 62). The pre-retirement earnings levels shown are: low (earnings at 45 percent of the projected SSA average wage index), average (earnings at the amount of the projected SSA average wage index), high (earnings at 160 percent of the projected SSA average wage index), and maximum (earnings at the amount of the projected OASDI contribution and benefit base).

Table III.B5.—Estimated Annual Benefit Amount Payable [1] to Retired Workers With Various Steady Pre-Retirement Earnings Levels Based on Intermediate Assumptions, Calendar Years 1999-2075

Year attain age 65 [2]	Retirement at normal retirement age				Retirement at age 65		
	Age at retirement	Current dollars	Constant 1999 dollars [3]	Percent of earnings	Current dollars	Constant 1999 dollars [3]	Percent of earnings
Low earnings: [4]							
1999	65:0	$6,935	$6,935	53.3	$6,935	$6,935	53.3
2000	65:0	7,141	6,995	53.4	7,141	6,995	53.4
2005	65:6	9,264	7,784	57.2	8,819	7,528	55.6
2010	66:0	11,480	8,077	56.7	10,336	7,512	53.2
2015	66:0	14,103	8,435	56.7	12,695	7,844	53.2
2020	66:2	17,424	8,812	56.7	15,414	8,096	52.6
2025	67:0	22,080	9,240	56.5	17,797	7,947	49.4
2030	67:0	27,122	9,649	56.5	21,864	8,301	49.4
2035	67:0	33,320	10,078	56.5	26,858	8,669	49.4
2040	67:0	40,936	10,526	56.5	32,995	9,054	49.4
2045	67:0	50,286	10,993	56.5	40,528	9,454	49.4
2050	67:0	61,789	11,484	56.5	49,793	9,875	49.5
2055	67:0	75,880	11,989	56.5	61,164	10,312	49.4
2060	67:0	93,231	12,523	56.5	75,146	10,771	49.5
2065	67:0	114,530	13,079	56.5	92,305	11,248	49.5
2070	67:0	140,689	13,659	56.5	113,387	11,747	49.5
2075	67:0	172,818	14,264	56.5	139,294	12,269	49.5
Average earnings:							
1999	65:0	11,454	11,454	39.6	11,454	11,454	39.6
2000	65:0	11,806	11,564	39.7	11,806	11,564	39.7
2005	65:6	15,292	12,850	42.5	14,547	12,418	41.3
2010	66:0	18,988	13,359	42.2	17,075	12,409	39.6
2015	66:0	23,320	13,948	42.2	20,973	12,958	39.6
2020	66:2	28,797	14,564	42.1	25,450	13,368	39.1
2025	67:0	36,544	15,293	42.1	29,384	13,122	36.7
2030	67:0	44,895	15,972	42.1	36,087	13,700	36.7
2035	67:0	55,159	16,684	42.1	44,342	14,312	36.7
2040	67:0	67,746	17,420	42.1	54,462	14,944	36.7
2045	67:0	83,232	18,195	42.1	66,915	15,610	36.7
2050	67:0	102,245	19,002	42.1	82,198	16,302	36.7
2055	67:0	125,600	19,845	42.1	100,969	17,024	36.7
2060	67:0	154,287	20,725	42.1	124,036	17,779	36.7
2065	67:0	189,532	21,644	42.1	152,362	18,567	36.7
2070	67:0	232,826	22,604	42.1	187,173	19,391	36.7
2075	67:0	286,001	23,606	42.1	229,926	20,251	36.7
High earnings: [5]							
1999	65:0	14,795	14,795	32.0	14,795	14,795	32.0
2000	65:0	15,292	14,979	32.1	15,292	14,979	32.1
2005	65:6	20,092	16,883	34.9	19,119	16,320	33.9
2010	66:0	25,041	17,617	34.8	22,573	16,405	32.7
2015	66:0	30,745	18,389	34.8	27,712	17,122	32.7
2020	66:2	37,989	19,213	34.7	33,632	17,666	32.3
2025	67:0	48,084	20,122	34.6	38,830	17,340	30.3
2030	67:0	59,070	21,016	34.6	47,699	18,109	30.3
2035	67:0	72,571	21,950	34.6	58,601	18,914	30.3
2040	67:0	89,141	22,922	34.6	71,981	19,751	30.3
2045	67:0	109,512	23,940	34.6	88,419	20,626	30.3
2050	67:0	134,529	25,003	34.6	108,622	21,542	30.3
2055	67:0	165,249	26,110	34.6	133,433	22,497	30.3
2060	67:0	202,997	27,268	34.6	163,913	23,495	30.3
2065	67:0	249,360	28,477	34.6	201,349	24,537	30.3
2070	67:0	306,312	29,739	34.6	247,338	25,624	30.3
2075	67:0	376,284	31,058	34.6	303,833	26,761	30.3

Table III.B5.—Estimated Annual Benefit Amount Payable [1] to Retired Workers With Various Steady Pre-Retirement Earnings Levels Based on Intermediate Assumptions, Calendar Years 1999-2075 (Cont.)

Year attain age 65 [2]	Retirement at normal retirement age				Retirement at age 65		
	Age at retirement	Current dollars	Constant 1999 dollars [3]	Percent of earnings	Current dollars	Constant 1999 dollars [3]	Percent of earnings
Maximum earnings: [6]							
1999	65:0	$16,502	$16,502	24.1	$16,502	$16,502	24.1
2000	65:0	17,144	16,793	23.6	17,144	16,793	23.6
2005	65:6	23,119	19,426	26.3	21,994	18,775	25.5
2010	66:0	29,709	20,901	27.1	26,617	19,344	25.3
2015	66:0	37,158	22,225	27.6	33,380	20,624	25.9
2020	66:2	46,098	23,314	27.7	40,780	21,420	25.7
2025	67:0	58,528	24,493	27.7	47,169	21,064	24.2
2030	67:0	71,898	25,579	27.7	57,975	22,010	24.2
2035	67:0	88,322	26,714	27.7	71,211	22,984	24.2
2040	67:0	108,345	27,860	27.7	87,360	23,971	24.2
2045	67:0	133,013	29,078	27.6	107,250	25,019	24.2
2050	67:0	163,288	30,347	27.6	131,653	26,110	24.2
2055	67:0	200,578	31,692	27.6	161,723	27,267	24.2
2060	67:0	246,399	33,098	27.6	198,664	28,476	24.2
2065	67:0	302,666	34,564	27.6	244,029	29,738	24.2
2070	67:0	371,784	36,095	27.6	299,766	31,056	24.2
2075	67:0	456,701	37,696	27.6	368,222	32,432	24.2

[1] Annual benefit amount is the benefit payable for the 12-month period starting with the month of retirement.

[2] Assumed to attain age 65 in January of the year.

[3] The adjustment from current to constant dollars is made using the CPI indexing series shown in table III.B1.

[4] Earnings equal to 45 percent of average.

[5] Earnings equal to 160 percent of average.

[6] Earnings equal to the OASDI contribution and benefit base.

C. LONG-RANGE ESTIMATES OF SOCIAL SECURITY TRUST FUND OPERATIONS AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT

This appendix presents long-range projections of the operations of the combined Old-Age and Survivors Insurance and Disability Insurance (OASI and DI) Trust Funds and of the Hospital Insurance (HI) Trust Fund expressed as a percentage of gross domestic product (GDP). While expressing these fund operations as a percentage of taxable payroll is the most useful approach for assessing the financial status of the programs (see table II.F13 and appendix A), analyzing them as a percentage of GDP provides an additional perspective on these fund operations in relation to the total value of goods and services produced in the United States.

Table III.C1 shows estimated income excluding interest, total outgo, and the resulting balance of the combined OASI and DI Trust Funds, of the HI Trust Fund, and of the combined OASI, DI, and HI Trust Funds, expressed as percentages of GDP on the basis of each of the three alternative sets of assumptions. The estimated GDP on which these percentages are based is also shown in table III.C1. For OASDI, income excluding interest consists of payroll-tax contributions, proceeds from taxation of benefits, and various reimbursements from the general fund of the Treasury. Total outgo consists of benefit payments, administrative expenses, net transfers from the trust funds to the Railroad Retirement program, and payments for vocational rehabilitation services for disabled beneficiaries. For HI, income excluding interest consists of payroll-tax contributions (including contributions from railroad employment), proceeds from taxation of benefits, and payments from the general fund of the Treasury for contributions on deemed wage credits for military service. Total outgo consists of outlays (benefits and administrative expenses) for insured beneficiaries. Both the HI income and outgo are on an incurred basis.

The OASDI balance (income excluding interest, less outgo) as a percentage of GDP is projected to be positive on the basis of the low cost alternative I through 2018, but with decreasing deficits after 2033. The OASDI balance is projected to be positive through 2013 on the basis of the intermediate alternative II and through 2008 on the basis of the high cost alternative III, before becoming permanently negative, with increasing deficits. The projected HI balance as a percentage of GDP, is negative in 1999 on the basis of the low cost alternative I, with positive balances ending by 2047, and increasing deficits thereafter. The HI balance is projected to be negative throughout the long-

range period under the intermediate and high cost alternatives, with deficits increasing steadily after 2002. The combined OASDI and HI balance as a percentage of GDP is projected to be positive through 2019 under the low cost alternative I, through 2011 under the intermediate alternative II, and through only 2005 under the high cost alternative III. Between 2010 and about 2035, under all three alternatives, both the OASDI and HI balances as percentages of GDP are projected to decline substantially because the "baby-boom" generation reaches retirement age during these years. After balances cease to be positive under the intermediate and high cost alternatives, the size of annual deficits increases fairly steadily for the OASDI and HI programs, both separately and combined.

By 2075, the combined OASDI and HI balances as percentages of GDP, based on the three alternatives, are projected to differ by a relatively large amount: from a deficit of 0.63 percent for the low cost alternative I to a deficit of 9.03 percent for the high cost alternative III. Projected balances differ by a much smaller amount by the tenth year, 2008, from a positive balance of 1.02 percent for the low cost alternative I to a deficit of 0.36 percent for the high cost alternative III.

The summarized long-range (75-year) balance as a percentage of GDP for the combined OASDI and HI programs varies by a relatively large amount (from a positive 0.15 percent, based on the low cost alternative I, to a deficit of 3.80 percent, based on the high cost alternative III). The 25-year summarized balance varies by a smaller amount (from a positive 0.90 percent to a deficit of 0.80 percent). Summarized rates are calculated on the present-value basis including the trust fund balances on January 1, 1999 and the cost of reaching and maintaining a target trust fund level equal to 100 percent of annual expenditures by the end of the period. (See section II.F for further explanation.)

Table III.C1.—Estimated OASDI and HI Income Excluding Interest, Outgo, and Balance as a Percentage of GDP by Alternative, Calendar Years 1999-2075

	Percentage of GDP									
	OASDI			HI			Combined			GDP in
Calendar year	Income[1]	Outgo	Balance	Income[1]	Outgo	Balance	Income[1]	Outgo	Balance	dollars (billions)
Intermediate:										
1999	5.25	4.45	0.79	1.52	1.56	-0.04	6.77	6.02	0.75	$8,845
2000	5.21	4.45	.76	1.53	1.56	-.03	6.74	6.01	.73	9,194
2001	5.21	4.45	.76	1.53	1.55	-.02	6.74	6.01	.74	9,591
2002	5.19	4.47	.72	1.53	1.55	-.02	6.72	6.03	.69	10,020
2003	5.17	4.49	.68	1.53	1.56	-.03	6.70	6.05	.66	10,488
2004	5.15	4.51	.64	1.53	1.57	-.04	6.68	6.08	.60	11,001
2005	5.15	4.53	.61	1.53	1.58	-.06	6.67	6.12	.56	11,560
2006	5.13	4.57	.56	1.53	1.60	-.07	6.66	6.16	.49	12,154
2007	5.13	4.60	.52	1.53	1.61	-.09	6.65	6.22	.44	12,784
2008	5.11	4.65	.47	1.53	1.63	-.10	6.64	6.27	.37	13,446
2010	5.11	4.78	.33	1.53	1.66	-.13	6.64	6.44	.20	14,850
2015	5.09	5.28	-.19	1.53	1.77	-.25	6.62	7.05	-.43	18,863
2020	5.08	5.92	-.84	1.54	1.95	-.42	6.62	7.87	-1.26	23,723
2025	5.07	6.49	-1.42	1.55	2.20	-.65	6.62	8.69	-2.07	29,668
2030	5.05	6.84	-1.79	1.56	2.44	-.89	6.60	9.29	-2.68	37,152
2035	5.02	6.96	-1.94	1.56	2.62	-1.07	6.58	9.58	-3.01	46,668
2040	4.98	6.88	-1.90	1.55	2.73	-1.18	6.53	9.61	-3.08	58,640
2045	4.94	6.81	-1.87	1.54	2.78	-1.24	6.49	9.59	-3.11	73,438
2050	4.90	6.79	-1.89	1.54	2.80	-1.27	6.44	9.60	-3.16	91,706
2055	4.87	6.86	-1.99	1.53	2.82	-1.29	6.40	9.69	-3.28	114,252
2060	4.84	6.95	-2.11	1.53	2.87	-1.35	6.36	9.82	-3.46	142,346
2065	4.80	7.00	-2.19	1.52	2.94	-1.43	6.32	9.94	-3.62	177,455
2070	4.76	7.02	-2.26	1.51	3.02	-1.51	6.28	10.04	-3.77	221,171
2075	4.73	7.05	-2.32	1.50	3.09	-1.58	6.23	10.14	-3.91	275,416
Summarized rates:[2]										
25-year:										
1999-2023	5.55	5.24	.31	1.59	1.79	-.20	7.14	7.03	.11	—
50-year:										
1999-2048	5.34	5.83	-.50	1.57	2.10	-.53	6.91	7.93	-1.03	—
75-year										
1999-2073	5.23	6.04	-.80	1.56	2.26	-.70	6.79	8.30	-1.50	—
Low Cost:										
1999	5.24	4.41	.83	1.52	1.54	-.02	6.76	5.95	.81	8,910
2000	5.24	4.38	.86	1.54	1.51	.02	6.77	5.89	.89	9,292
2001	5.26	4.35	.91	1.54	1.48	.05	6.80	5.84	.96	9,704
2002	5.26	4.34	.92	1.54	1.46	.07	6.79	5.80	1.00	10,146
2003	5.25	4.32	.93	1.54	1.45	.09	6.78	5.77	1.02	10,619
2004	5.24	4.32	.92	1.54	1.44	.10	6.78	5.75	1.02	11,120
2005	5.24	4.32	.92	1.54	1.43	.11	6.78	5.75	1.03	11,644
2006	5.23	4.32	.91	1.53	1.42	.11	6.77	5.74	1.03	12,195
2007	5.24	4.33	.91	1.53	1.42	.12	6.77	5.74	1.03	12,772
2008	5.23	4.34	.89	1.54	1.41	.13	6.77	5.75	1.02	13,368
2010	5.23	4.43	.80	1.54	1.40	.14	6.77	5.82	.95	14,629
2015	5.23	4.83	.40	1.54	1.40	.14	6.77	6.22	.55	18,148
2020	5.24	5.40	-.16	1.55	1.44	.11	6.79	6.84	-.05	22,295
2025	5.24	5.86	-.62	1.57	1.50	.06	6.80	7.36	-.56	27,279
2030	5.23	6.11	-.88	1.58	1.54	.04	6.81	7.65	-.84	33,518
2035	5.21	6.11	-.89	1.58	1.56	.02	6.79	7.67	-.87	41,448
2040	5.19	5.93	-.74	1.57	1.56	.01	6.77	7.49	-.73	51,426
2045	5.17	5.77	-.60	1.57	1.57	(3)	6.74	7.33	-.59	63,753
2050	5.15	5.67	-.52	1.57	1.58	-.01	6.71	7.25	-.53	78,930
2055	5.13	5.64	-.51	1.56	1.60	-.04	6.69	7.24	-.54	97,676
2060	5.11	5.61	-.49	1.56	1.64	-.08	6.67	7.24	-.57	121,081
2065	5.09	5.54	-.45	1.55	1.68	-.13	6.65	7.22	-.58	150,371
2070	5.07	5.47	-.40	1.55	1.74	-.19	6.62	7.21	-.59	186,749
2075	5.05	5.44	-.39	1.54	1.79	-.24	6.59	7.22	-.63	231,672

Table III.C1.—Estimated OASDI and HI Income Excluding Interest, Outgo, and Balance as a Percentage of GDP by Alternative, Calendar Years 1999-2075 (Cont.)

	Percentage of GDP									
	OASDI			HI			Combined			GDP in dollars (billions)
Calendar year	Income[1]	Outgo	Balance	Income[1]	Outgo	Balance	Income[1]	Outgo	Balance	
Low Cost (Cont.):										
Summarized rates: [2]										
25-year:										
1999-2023	5.66	4.88	0.78	1.60	1.48	0.12	7.26	6.36	0.90	—
50-year:										
1999-2048	5.48	5.27	.22	1.59	1.50	.09	7.08	6.77	.31	—
75-year										
1999-2073	5.41	5.31	.09	1.58	1.53	.05	6.99	6.84	.15	—
High Cost:										
1999	5.25	4.47	.78	1.52	1.59	-.07	6.77	6.06	.71	$8,857
2000	5.21	4.56	.65	1.53	1.63	-.10	6.74	6.19	.55	9,112
2001	5.15	4.49	.66	1.52	1.62	-.10	6.67	6.11	.56	9,844
2002	5.13	4.55	.58	1.53	1.63	-.10	6.66	6.18	.48	10,548
2003	5.11	4.84	.27	1.52	1.70	-.17	6.63	6.54	.10	10,778
2004	5.06	4.81	.25	1.51	1.71	-.20	6.58	6.53	.05	11,553
2005	5.06	4.83	.23	1.52	1.75	-.23	6.58	6.58	[3]	12,320
2006	5.05	4.89	.16	1.52	1.79	-.27	6.57	6.69	-.11	13,038
2007	5.05	4.95	.09	1.52	1.84	-.32	6.57	6.79	-.23	13,788
2008	5.03	5.02	[3]	1.52	1.88	-.36	6.55	6.90	-.36	14,581
2010	5.02	5.19	-.18	1.52	1.97	-.45	6.54	7.16	-.63	16,258
2015	4.99	5.75	-.76	1.52	2.28	-.76	6.50	8.02	-1.52	21,182
2020	4.96	6.45	-1.49	1.52	2.71	-1.19	6.49	9.16	-2.68	27,325
2025	4.94	7.12	-2.18	1.53	3.32	-1.78	6.47	10.44	-3.97	34,990
2030	4.91	7.62	-2.71	1.54	3.98	-2.44	6.45	11.60	-5.15	44,724
2035	4.87	7.89	-3.02	1.54	4.53	-2.99	6.41	12.42	-6.01	57,142
2040	4.82	7.99	-3.17	1.54	4.89	-3.35	6.36	12.88	-6.53	72,751
2045	4.77	8.10	-3.32	1.53	5.06	-3.54	6.30	13.16	-6.86	92,009
2050	4.72	8.25	-3.53	1.52	5.10	-3.57	6.24	13.35	-7.11	115,775
2055	4.68	8.52	-3.84	1.52	5.11	-3.60	6.20	13.63	-7.44	145,009
2060	4.64	8.82	-4.18	1.51	5.18	-3.67	6.15	14.00	-7.85	181,249
2065	4.60	9.09	-4.50	1.51	5.28	-3.77	6.11	14.38	-8.27	226,329
2070	4.55	9.33	-4.78	1.51	5.40	-3.89	6.06	14.73	-8.67	282,389
2075	4.51	9.54	-5.03	1.50	5.50	-4.00	6.01	15.04	-9.03	352,058
Summarized rates: [2]										
25-year:										
1999-2023	5.46	5.64	-.18	1.58	2.20	-.61	7.04	7.84	-.80	—
50-year:										
1999-2048	5.21	6.49	-1.28	1.56	3.08	-1.52	6.78	9.57	-2.80	—
75-year										
1999-2073	5.09	6.95	-1.86	1.55	3.49	-1.94	6.64	10.44	-3.80	—

[1] Income excludes interest on the trust funds.

[2] Summarized rates are calculated on the present-value basis including the value of the trust funds on January 1, 1999 and the cost of reaching and maintaining a target trust fund level equal to 100 percent of annual expenditures by the end of the period.

[3] Between -0.005 and 0.005 percent of GDP.

Note: Totals do not necessarily equal the sums of rounded components.

The difference between trust fund operations expressed as percentages of taxable payroll and those expressed as percentages of GDP can be seen by analyzing the estimated ratios of OASDI taxable payroll to GDP, which are presented in table III.C2. HI taxable payroll is about 25 percent larger than the OASDI taxable payroll throughout the long-range period (see appendix A for a detailed description of the difference). The cost as a percentage of GDP is approximately equal to

the cost as a percentage of taxable payroll multiplied by the ratio of taxable payroll to GDP.

Table III.C2.—Ratio of OASDI Taxable Payroll to GDP by Alternative, Calendar Years 1999-2075

Calendar year	Intermediate	Low Cost	High Cost
1999	0.413	0.413	0.413
2000	.412	.415	.411
2001	.411	.416	.407
2002	.410	.416	.405
2003	.408	.415	.403
2004	.407	.414	.400
2005	.406	.414	.398
2006	.405	.413	.398
2007	.403	.413	.396
2008	.402	.413	.395
2010	.401	.412	.393
2015	.398	.410	.388
2020	.394	.408	.383
2025	.390	.406	.377
2030	.386	.404	.372
2035	.382	.401	.366
2040	.379	.399	.361
2045	.375	.397	.356
2050	.372	.396	.351
2055	.368	.394	.346
2060	.365	.392	.341
2065	.361	.390	.336
2070	.358	.389	.331
2075	.354	.387	.326

Projections of GDP for the first several years were based on assumed quarterly changes in real GDP and the GDP implicit price deflator. Thereafter, projections of GDP were based on the projected increases in U.S. employment, labor productivity, average hours worked, and the GDP implicit price deflator. Projections of taxable payroll reflect the projected growth in GDP, along with assumed changes in the ratio of worker compensation to GDP, the ratio of earnings to worker compensation, the ratio of OASDI covered earnings to total earnings, and the ratio of taxable to total covered earnings.

Over the long-range projection period, projected increases in taxable payroll differ from projected increases in GDP primarily due to the assumed trend in the ratio of wages to total employee compensation—i.e., wages plus fringe benefits. The ratio of wages to total employee compensation declined at an average annual rate of 0.28 percent for the 40 years 1958-96. For the 10-year periods 1958-67, 1968-77, 1978-87 the ratio declined by 0.31, 0.71, and 0.19 percent, respectively. For the 10-year period 1988-97 the ratio increased by 0.08 percent. Ultimate future annual rates of decline in the ratio of wages to employee compensation are assumed to be 0.1, 0.2, and 0.3 percent for alternatives I, II, and III, respectively. An additional factor that has made the

overall ratio of taxable payroll to GDP decline in recent years is the decline in the ratio of taxable earnings to covered earnings, as a result of the relatively greater increases in earnings for persons with earnings above the benefit and contribution base. This decline in the taxable ratio is assumed to continue at a slower pace through 2008.

D. TEN YEAR HISTORY OF ACTUARIAL BALANCE ESTIMATES

This appendix chronicles the recent history of the primary measure of long-range actuarial status, namely the actuarial balance, as shown in the annual reports for 1989 and later. Actuarial balance is defined in detail in section II.F, Actuarial Estimates. Conceptually, the two basic components of actuarial balance are the summarized income rate and the summarized cost rate. Both rates are expressed as percentages of taxable payroll. For any given period, the actuarial balance is the difference between the present value of tax income for the period, and the present value of the outgo for the period, each divided by the present value of taxable payroll for all years in the period. Also included in the calculation of the actuarial balance are:

- The amount of the trust fund balances on hand at the beginning of the valuation period, and
- The present value of a target trust fund balance equal to 100 percent of the amount of annual outgo to be reached and maintained by the end of the valuation period, as shown in the reports for 1991 and later.

It should be noted that the current method of calculating the actuarial balance based on present values, though used prior to the 1973 Annual Report, was not used for the annual reports of 1973-87. Instead, a simpler method that approximates the results of the present-value approach, called the "average-cost" method, was used during that period. Under the average-cost method, the sum of the annual cost rates (which are expressed as percentages of taxable payroll) over the 75-year projection period was divided by the total number of years, 75, to obtain the average cost rate per year. The average income rate was similarly calculated, and the difference between the average income rate and the average cost rate was called the actuarial balance.

In 1973, when the average-cost method was first used, the long-range financing of the program was more nearly on a pay-as-you-go basis. Also, based on the long-range economic and demographic assumptions then being used, the annual rate of growth in taxable payroll was about the same as the annual rate at which the trust funds earned interest. In either situation (i.e., pay-as-you-go financing, where the annual income rate is the same as the annual cost rate, or an annual rate of growth in taxable payroll equal to the annual interest rate),

the average-cost method produces the same result as the present-value method. However, by 1988, neither of these situations still existed.

As a result of legislation enacted in 1977 and in 1983, substantial increases in the trust funds were estimated to occur well into the next century, so that the program was partially "advance funded," rather than being funded on a pay-as-you-go basis. Also, because of declines in long-range fertility rates and average real-wage growth that were assumed in the annual reports over the period 1973-87, the annual rate of growth in taxable earnings assumed for the long range became significantly lower than the assumed interest rate. Therefore, during the period 1973-87, the results of the average-cost method and the present-value method began to diverge, and by 1988 they were quite different. While the average-cost method still accounted for most of the effects of the assumed interest rate, it no longer accounted for all of the interest effects. The present-value method, of course, does account for the full effect of the assumed interest rates. So, in 1988, the present-value method of calculating the actuarial balance was resumed.

A positive actuarial balance indicates that estimated income is more than sufficient to meet estimated trust fund obligations for the period as a whole. A negative actuarial balance indicates that estimated income is insufficient to meet estimated trust fund obligations for the entire period. An actuarial balance of zero indicates that the estimated income exactly matches estimated trust fund obligations for the period.

Table III.D1 shows the estimated OASDI actuarial balances, as well as the summarized income and cost rates, for the last 10 annual reports (1989-98), along with the estimates for the current report. The values shown are based on the intermediate alternative II assumptions, or alternative II-B for years prior to 1991.

Table III.D1.—Long-Range Actuarial Balances for the OASDI Program as Shown for the Intermediate Assumptions [1] in the Trustees Reports Issued in Years 1989-99

[As a percentage of taxable payroll]

Year of report	Summarized income rate	Summarized cost rate	Actuarial balance	Change from previous year
1989	13.02	13.72	-0.70	-0.13
1990	13.04	13.95	-.91	-.21
1991	13.11	14.19	-1.08	-.17
1992	13.16	14.63	-1.46	-.38
1993	13.21	14.67	-1.46	(2)
1994	13.24	15.37	-2.13	-.66
1995	13.27	15.44	-2.17	-.04
1996	13.33	15.52	-2.19	-.02
1997	13.37	15.60	-2.23	-.03
1998	13.45	15.64	-2.19	+.04
1999	13.49	15.56	-2.07	+.12

[1] Values shown are based on the intermediate alternative II assumptions for 1991-99, and on the intermediate alternative II-B assumptions for 1989-90.

[2] Between -0.005 and 0.005 percent of taxable payroll.

Note: Totals do not necessarily equal the sums of rounded components.

In 1989 and 1990, changes in economic assumptions accounted for most of the changes in the estimated actuarial balance. In 1991, the effect of legislation, changes in economic assumptions, and the introduction of the cost of reaching and maintaining an ending trust fund target combined to produce the change in actuarial balance. In 1992, changes in disability assumptions and the method for projecting average benefit levels accounted for most of the change in the actuarial balance. In 1993, numerous small changes in assumptions and methods had offsetting effects on the actuarial balance. In 1994, changes in the real-wage assumption, disability rates, and the earnings sample used for projecting average benefit levels accounted for most of the change in the actuarial balance. In 1995, numerous small changes had largely offsetting effects on the actuarial balance, including a substantial reallocation of the payroll tax rate, which reduced the OASI actuarial balance, but increased the DI actuarial balance. In 1996, a change in the method of projecting dually entitled beneficiaries produced a large increase in the actuarial balance, which almost totally offset decreases produced by changes in the valuation period and in the economic and demographic assumptions. Various changes in assumptions and methods for the 1997 report had roughly offsetting effects on the actuarial balance. In 1998, increases caused by changes in the economic assumptions, although partially offset by decreases produced by changes in the valuation period and in the demographic assumptions, accounted for most of the changes in the estimated actuarial balance. Changes affecting the actuarial balance shown for the 1999 report are described in section II.F2g.

E. ACTUARIAL ANALYSIS OF BENEFIT DISBURSEMENTS FROM THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE TRUST FUND WITH RESPECT TO DISABLED BENEFICIARIES
(Required by section 201(c) of the Social Security Act)

Effective January 1957, monthly benefits have been payable from the OASI Trust Fund to disabled children aged 18 and over of retired and deceased workers in those cases for which the disability began before age 18. The age before which disability is required to have begun was subsequently changed to age 22. Effective February 1968, reduced monthly benefits have been payable from this trust fund to disabled widows and widowers at ages 50 and above. Effective January 1991, the requirements for the disability of the widow or widower were made less restrictive.

On December 31, 1998, about 797,000 persons were receiving monthly benefits from the OASI Trust Fund because of their disabilities or the disabilities of children. This total includes 39,000 mothers and fathers (wives or husbands under age 65 of retired-worker beneficiaries and widows or widowers of deceased insured workers) who met all other qualifying requirements and were receiving unreduced benefits solely because they had disabled-child beneficiaries (or disabled children aged 16 or 17) in their care. Benefits paid from this trust fund to the persons described above totaled $4,838 million in calendar year 1998. Table III.E1 shows these and similar figures for selected calendar years during 1960-98, and estimated experience for 1999-2008 based on the intermediate set of assumptions.

Table III.E1.—Benefit Disbursements From the OASI Trust Fund With Respect to Disabled Beneficiaries, Selected Calendar Years 1960-98 and Estimated Future Disbursements During 1999-2008 Based on Intermediate Assumptions

[Beneficiaries in thousands; benefit payments in millions]

Calendar year	Disabled beneficiaries, end of year			Amount of benefit payments [1]		
	Total	Children [2]	Widows-widowers [3]	Total	Children [2]	Widows-widowers [4]
Historical data:						
1960	117	117	—	$59	$59	—
1965	214	214	—	134	134	—
1970	316	281	36	301	260	$41
1975	435	376	58	664	560	104
1980	519	460	59	1,223	1,097	126
1985	594	547	47	2,072	1,885	187
1986	614	565	49	2,219	2,022	197
1987	629	580	49	2,331	2,128	203
1988	640	591	49	2,518	2,307	211
1989	651	602	49	2,680	2,459	221
1990	662	613	49	2,882	2,649	233
1991	687	627	61	3,179	2,875	304
1992	715	643	72	3,459	3,079	380
1993	740	659	81	3,752	3,296	456
1994	758	671	86	3,973	3,481	492
1995	772	681	91	4,202	3,672	531
1996	782	687	94	4,410	3,846	565
1997	789	693	96	4,646	4,050	596
1998	797	698	99	4,838	4,210	627
Estimates:						
1999	809	707	102	5,020	4,358	663
2000	817	717	100	5,206	4,536	670
2001	824	725	98	5,401	4,728	673
2002	829	734	96	5,613	4,940	673
2003	834	742	93	5,829	5,157	672
2004	840	749	90	6,079	5,397	681
2005	845	756	89	6,350	5,654	696
2006	849	763	86	6,634	5,933	701
2004	851	770	81	6,924	6,225	699
2008	853	776	77	7,229	6,532	697

[1] Beginning in 1966, includes payments for vocational rehabilitation services.

[2] Also includes certain mothers and fathers (see text).

[3] In 1984 and later years, only disabled widows and widowers aged 50-59 are included because disabled widows and widowers aged 60-64 would be eligible for the same benefit as a nondisabled aged widow or widower; therefore, they are not receiving benefits solely because of a disability.

[4] In 1983 and prior years, reflects the offsetting effect of lower benefits payable to disabled widows and widowers who continue to receive benefits after attaining age 60 (62, for disabled widowers, prior to 1973) as compared to the higher nondisabled widow's and widower's benefits that would otherwise be payable. In 1984 and later years, only benefit payments to disabled widows and widowers aged 50-59 are included (see footnote 3).

Note: Totals do not necessarily equal the sums of rounded components.

Total benefit payments from the OASI Trust Fund with respect to disabled beneficiaries are estimated to increase from $5,020 million in calendar year 1999 to $7,229 million in calendar year 2008, based on the intermediate assumptions.

In calendar year 1998, benefit payments (including expenditures for vocational rehabilitation services) with respect to disabled persons from the OASI Trust Fund and from the DI Trust Fund (including

payments from the latter fund to all children and spouses of disabled-worker beneficiaries) totaled $53,062 million. Of this amount, $4,838 million or 9.1 percent represented payments from the OASI Trust Fund. These and similar figures for selected calendar years during 1960-98 and estimates for calendar years 1999-2008 are presented in table III.E2.

Table III.E2.—Benefit Disbursements Under the OASDI Program With Respect to Disabled Beneficiaries, by Trust Fund, Selected Calendar Years 1960-98, and Estimated Future Disbursements During 1999-2008 Based on Intermediate Assumptions

[Amounts in millions]

Calendar year	Total [1]	DI Trust Fund [2]	OASI Trust Fund	
			Amount [3]	Percentage of total
Historical data:				
1960	$627	$568	$59	9.4
1965	1,707	1,573	134	7.9
1970	3,386	3,085	301	8.9
1975	9,169	8,505	664	7.2
1980	16,738	15,515	1,223	7.3
1985	20,908	18,836	2,072	9.9
1986	22,075	19,856	2,219	10.1
1987	22,858	20,527	2,331	10.2
1988	24,226	21,708	2,518	10.4
1989	25,591	22,911	2,680	10.5
1990	27,717	24,835	2,882	10.4
1991	30,877	27,698	3,179	10.3
1992	34,583	31,124	3,459	10.0
1993	38,378	34,626	3,752	9.8
1994	41,730	37,757	3,973	9.5
1995	45,140	40,937	4,202	9.3
1996	48,615	44,205	4,410	9.1
1997	50,358	45,712	4,646	9.2
1998	53,062	48,224	4,838	9.1
Estimates:				
1999	56,265	51,245	5,020	8.9
2000	60,227	55,021	5,206	8.6
2001	64,603	59,203	5,401	8.4
2002	69,637	64,024	5,613	8.1
2003	75,256	69,427	5,829	7.7
2004	81,655	75,577	6,079	7.4
2005	88,725	82,375	6,350	7.2
2006	96,510	89,876	6,634	6.9
2007	104,835	97,910	6,924	6.6
2008	111,365	104,136	7,229	6.5

[1] Beginning in 1966, includes payments for vocational rehabilitation services.

[2] Benefit payments to disabled workers and their children and spouses.

[3] Benefit payments to disabled children aged 18 and over, to certain mothers and fathers (see text), and to disabled widows and widowers (see footnote 4, table III.E1).

Note: Totals do not necessarily equal the sums of rounded components.

F. FEDERAL REGISTER NOTICE

Social Security Administration

Office of the Commissioner

1999 Cost-of-Living Increase and Other Determinations

AGENCY: Office of the Commissioner, Social Security Administration

ACTION: Notice.

SUMMARY: The Commissioner has determined—

(1) A 1.3 percent cost-of-living increase in Social Security benefits under title II of the Social Security Act (the Act), effective for December 1998;

(2) An increase in the Federal Supplemental Security Income (SSI) monthly benefit amounts under title XVI of the Act for 1999 to $500 for an eligible individual, $751 for an eligible individual with an eligible spouse, and $250 for an essential person;

(3) The national average wage index for 1997 to be $27,426.00;

(4) The Old-Age, Survivors, and Disability Insurance (OASDI) contribution and benefit base to be $72,600 for remuneration paid in 1999 and self-employment income earned in taxable years beginning in 1999;

(5) For beneficiaries under age 65, the monthly exempt amount under the Social Security retirement earnings test for taxable years ending in calendar year 1999 to be $800;

(6) The dollar amounts ("bend points") used in the benefit formula for workers who become eligible for benefits in 1999 to be $505 and $3,043;

(7) The dollar amounts ("bend points") used in the formula for computing maximum family benefits for workers who become eligible for benefits in 1999 to be $645, $931, and $1,214;

(8) The amount of earnings a person must have to be credited with a quarter of coverage in 1999 to be $740;

(9) The "old-law" contribution and benefit base to be $53,700 for 1999;

(10) The monthly amount of substantial gainful activity applicable to statutorily blind individuals in 1999 to be $1,110;

(11) The domestic worker coverage threshold to be $1,100 for 1999; and

(12) The OASDI fund ratio to be 171.2 percent for 1998.

FOR FURTHER INFORMATION CONTACT: Jeffrey L. Kunkel, Office of the Chief Actuary, Social Security Administration, 6401 Security Boulevard, Baltimore, MD 21235, (410) 965-3013. For information on eligibility or claiming benefits, call 1-800-772-1213. A summary of the information in this announcement is available in a recorded message by telephoning (410) 965-3053. Information relating to this announcement is also available on the Internet. The address is http://www.ssa.gov/OACT/COLA/Intro.html.

SUPPLEMENTARY INFORMATION: The Commissioner is required by the Act to publish within 45 days after the close of the third calendar quarter of 1998 the benefit increase percentage and the revised table of "special minimum" benefits (section 215(i)(2)(D)). Also, the Commissioner is required to publish on or before November 1 the national average wage index for 1997 (section 215(a)(1)(D)), the OASDI fund ratio for 1998 (section 215(i)(2)(C)(ii)), the OASDI contribution and benefit base for 1999 (section 230(a)), the amount of earnings required to be credited with a quarter of coverage in 1999 (section 213(d)(2)), the monthly exempt amounts under the Social Security retirement earnings test for 1999 (section 203(f)(8)(A)), the formula for computing a primary insurance amount for workers who first become eligible for benefits or die in 1999 (section 215(a)(1)(D)), and the formula for computing the maximum amount of benefits payable to the family of a worker who first becomes eligible for old-age benefits or dies in 1999 (section 203(a)(2)(C)).

Cost-of-Living Increases

General. The cost-of-living increase is 1.3 percent for benefits under titles II and XVI of the Act.

Under title II, OASDI benefits will increase by 1.3 percent beginning with December 1998 benefits. (All benefits for a given month are normally payable in the following month. However, those benefits for December 1998 that are normally paid on the third of the following month will be paid on December 31, 1998, because January 3, 1999, is a Sunday.) This increase is based on the authority contained in section 215(i) of the Act (42 U.S.C. 415(i)).

Under title XVI, Federal SSI payment levels will also increase by 1.3 percent effective for payments made for the month of January 1999 but paid on December 31, 1998. This is based on the authority contained in section 1617 of the Act (42 U.S.C. 1382f).

Automatic Benefit Increase Computation.

Under section 215(i) of the Act, the third calendar quarter of 1998 is a cost-of-living computation quarter for all the purposes of the Act. The Commissioner is, therefore, required to increase benefits, effective with December 1998, for individuals entitled under section 227 or 228 of the Act, to increase primary insurance amounts of all other individu-

als entitled under title II of the Act, and to increase maximum benefits payable to a family. For December 1998, the benefit increase is the percentage increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers from the third quarter of 1997 through the third quarter of 1998.

Section 215(i)(1) of the Act provides that the Consumer Price Index for a cost-of-living computation quarter shall be the arithmetic mean of this index for the 3 months in that quarter. The arithmetic mean is rounded, if necessary, to the nearest 0.1. The Department of Labor's Consumer Price Index for Urban Wage Earners and Clerical Workers for each month in the quarter ending September 30, 1997, is: for July 1997, 157.5; for August 1997, 157.8; and for September 1997, 158.3. The arithmetic mean for this calendar quarter is 157.9. The corresponding Consumer Price Index for each month in the quarter ending September 30, 1998, is: for July 1998, 159.8; for August 1998, 160.0; and for September 1998, 160.2. The arithmetic mean for this calendar quarter is 160.0. Thus, because the Consumer Price Index for the calendar quarter ending September 30, 1998, exceeds that for the calendar quarter ending September 30, 1997 by 1.3 percent, a cost-of-living benefit increase of 1.3 percent is effective for benefits under title II of the Act beginning December 1998.

Title II Benefit Amounts. In accordance with section 215(i) of the Act, in the case of insured workers and family members for whom eligibility for benefits (i.e., the worker's attainment of age 62, or disability or death before age 62) occurred before 1999, benefits will increase by 1.3 percent beginning with benefits for December 1998 which are payable in January 1999. In the case of first eligibility after 1998, the 1.3 percent increase will not apply.

For eligibility after 1978, benefits are generally determined by a benefit formula provided by the Social Security Amendments of 1977 (Pub. L. 95-216), as described later in this notice.

For eligibility before 1979, benefits are determined by means of a benefit table. A copy of this table may be obtained by writing to: Social Security Administration, Office of Public Inquiries, 4100 Annex, Baltimore, MD 21235. The table is also available on the Internet at address http://www.ssa.gov/OACT/ProgData/tableForm.html.

Section 215(i)(2)(D) of the Act requires that, when the Commissioner determines an automatic increase in Social Security benefits, the Commissioner shall publish in the FEDERAL REGISTER a revision of the range of the primary insurance amounts and corresponding maximum family benefits based on the dollar amount and other provisions described in section 215(a)(1)(C)(i). These benefits are referred to as "special minimum" benefits and are payable to certain individuals with long periods of relatively low earnings. To qualify for such benefits, an individual must have at least 11 "years of coverage." To earn a year of coverage for purposes of the special minimum, a person must earn at least a certain proportion (25 percent for years before 1991, and 15 percent for years after 1990) of the "old-law" contribution and benefit base. In accordance with section 215(a)(1)(C)(i), the table below shows the revised range of primary insurance amounts and corresponding maximum family benefit amounts after the 1.3 percent benefit increase.

Special Minimum Primary Insurance Amounts and Maximum Family Benefits

Primary insurance amount payable for Dec. 1997	Number of years of coverage	Primary insurance amount payable for Dec. 1998	Family benefit payable for Dec. 1998
$27.60	11	$27.90	$42.20
55.40	12	56.10	84.80
83.70	13	84.70	127.40
111.40	14	112.80	169.80
139.40	15	141.20	212.00
167.50	16	169.60	255.00
195.50	17	198.00	297.70
223.50	18	226.40	340.10
251.50	19	254.70	382.70
279.40	20	283.00	425.10
307.70	21	311.70	468.00
335.50	22	339.80	510.40
363.70	23	368.40	553.60
391.80	24	396.80	595.90
419.70	25	425.10	638.00
448.00	26	453.80	681.40
475.90	27	482.00	723.70
503.80	28	510.30	766.10
531.70	29	538.60	808.80
559.80	30	567.00	851.10

Section 227 of the Act provides flat-rate benefits to a worker who became age 72 before 1969 and was not insured under the usual requirements, and to his or her spouse or surviving spouse. Section 228 of the Act provides similar benefits at age 72 for certain uninsured persons. The current monthly benefit amount of $203.10 for an individual under sections 227 and 228 of the Act is increased by 1.3 percent to obtain the new amount of $205.70. The current monthly benefit amount of $101.50 for a spouse under section 227 is increased by 1.3 percent to $102.80.

Title XVI Benefit Amounts. In accordance with section 1617 of the Act, Federal SSI benefit amounts for the aged, blind, and disabled are increased by 1.3 percent effective January

1999. For 1998, the monthly benefit amounts for an eligible individual, an eligible individual with an eligible spouse, and for an essential person—$494, $741, and $247, respectively—were derived from corresponding yearly unrounded Federal SSI benefit amounts of $5,932.89, $8,898.33, and $2,973.24. For 1999, these yearly unrounded amounts are increased by 1.3 percent to $6,010.02, $9,014.01, and $3,011.89, respectively, Each of these resulting amounts must be rounded, when not a multiple of $12, to the next lower multiple of $12. Accordingly, the corresponding annual amounts, effective for 1999, are $6,000, $9,012, and $3,000. The corresponding monthly amounts for 1999 are determined by dividing the yearly amounts by 12, giving $500, $751, and $250, respectively. The monthly amount is reduced by subtracting monthly countable income. In the case of an eligible individual with an eligible spouse, the amount payable is further divided equally between the two spouses.

Fee for Services Performed as a Representative Payee. Sections 205(j)(4)(A)(i) and 1631(a)(2)(D)(i) of the Act permit a qualified organization to collect from an individual a monthly fee for expenses incurred in providing services performed as such individual's representative payee. Currently the fee is limited to the lesser of (1) 10 percent of the monthly benefit involved, or (2) $27 per month ($52 per month in any case in which the individual is entitled to disability benefits and the Commissioner has determined that payment to the representative payee would serve the interest of the individual because the individual has an alcoholism or drug addiction condition and is incapable of managing such benefits). The dollar fee limits are subject to increase by the automatic cost-of-living increase, with the resulting amounts rounded to the nearest whole dollar amount. Due to the rounding provision, the current $27 amount remains the same for 1999, while the current $52 amount is increased by 1.3 percent to $53 for 1999.

National Average Wage Index for 1997

General. Under various provisions of the Act, several amounts are scheduled to increase automatically for 1999 based on the annual increase in the national average wage index. The amounts are (1) the OASDI contribution and benefit base,(2) the retirement test exempt amount for beneficiaries under age 65, (3) the dollar amounts, or "bend points," in the primary insurance amount and maximum family benefit formulas,(4) the amount of earnings required for a worker to be credited with a quarter of coverage, (5) the "old-law" contribution and benefit base (as determined under section 230 of the Act as in effect before the 1977 amendments), and (6) the substantial gainful activity amount applicable to statutorily blind individuals. Also, section 3121(x) of the Internal Revenue Code requires that the domestic employee coverage threshold be based on changes in the national average wage index.

Computation. The determination of the national average wage index for calendar year 1997 is based on the 1996 national average wage index of $25,913.90 announced in the FEDERAL REGISTER on October 30, 1997 (62 FR 58762), along with the percentage increase in average wages from 1996 to 1997 measured by annual wage data tabulated by the Social Security Administration (SSA). The wage data tabulated by SSA include contributions to deferred compensation plans, as required by section 209(k) of the Act. The average amounts of wages calculated directly from these data were $24,859.17 and $26,309.73 for 1996 and 1997, respectively. To determine the national average wage index for 1997 at a level that is consistent with the national average wage indexing series for 1951 through 1977 (published December 29, 1978, at 43 FR 61016), the 1996 national average wage index of $25,913.90 is multiplied by the percentage increase in average wages from 1996 to 1997 (based on SSA-tabulated wage data) as follows (with the result rounded to the nearest cent):

Amount. The national average wage index for 1997 is $25,913.90 times $26,309.73 divided by $24,859.17, which equals $27,426.00. Therefore, the national average wage index for calendar year 1997 is determined to be $27,426.00.

OASDI Contribution and Benefit Base

General. The OASDI contribution and benefit base is $72,600 for remuneration paid in 1999 and self-employment income earned in taxable years beginning in 1999.

The OASDI contribution and benefit base serves two purposes:

(a) It is the maximum annual amount of earnings on which OASDI taxes are paid. The OASDI tax rate for remuneration paid in 1999 is set by statute at 6.2 percent for employees and employers, each. The OASDI tax rate for self-employment income earned in taxable years beginning in 1999 is 12.4 percent. (The Hospital Insurance tax is due on remuneration, without limitation, paid in 1999, at the rate of 1.45 percent for employees and employers, each, and on self-employment income earned in taxable years beginning in 1999, at the rate of 2.9 percent.)

(b) It is the maximum annual amount used in determining a person's OASDI benefits.

Computation. Section 230(b) of the Act provides the formula used to determine the OASDI contribution and benefit base. Under the formula, the base for 1999 shall be equal to the larger of (1) the 1994 base of $60,600 multiplied by the ratio of the national average wage index for 1997 to that for 1992, or (2) the cur-

rent base ($68,400). If the amount so determined is not a multiple of $300, it shall be rounded to the nearest multiple of $300.

Amount. The ratio of the national average wage index for 1997, $27,426.00 as determined above, compared to that for 1992, $22,935.42, is 1.1957924. Multiplying the 1994 OASDI contribution and benefit base amount of $60,600 by the ratio of 1.1957924 produces the amount of $72,465.02 which must then be rounded to $72,600. Because $72,600 exceeds the current base amount of $68,400, the OASDI contribution and benefit base is determined to be $72,600 for 1999.

Retirement Earnings Test Exempt Amounts

General. Social Security benefits are withheld when a beneficiary under age 70 has earnings in excess of the retirement earnings test exempt amount. Since 1978, higher exempt amounts have applied to beneficiaries aged 65 through 69 compared to those under age 65. Formulas for determining the monthly exempt amounts are provided in section 203(f)(8)(B) of the Act, as amended by section 102 of the "Senior Citizens' Right to Work Act of 1996," title I of Pub. L. 104-121. This amendment set the annual exempt amount for beneficiaries aged 65 through 69 to $12,500 for 1996, $13,500 for 1997, $14,500 for 1998, $15,500 for 1999, $17,000 for 2000, $25,000 for 2001, and $30,000 for 2002. The corresponding monthly exempt amounts are exactly one-twelfth of the annual amounts. After 2002, the monthly exempt amount for this group of beneficiaries will increase under the applicable formula.

For beneficiaries aged 65 through 69, $1 in benefits is withheld for every $3 of earnings in excess of the annual exempt amount. For beneficiaries under age 65, $1 in benefits is withheld for every $2 of earnings in excess of the annual exempt amount.

Computation. Under the formula applicable to beneficiaries under age 65, the monthly exempt amount for 1999 shall be the larger of (1) the 1994 monthly exempt amount multiplied by the ratio of the national average wage index for 1997 to that for 1992, or (2) the 1998 monthly exempt amount ($760). If the amount so determined is not a multiple of $10, it shall be rounded to the nearest multiple of $10.

Exempt Amount for Beneficiaries Under Age 65. The ratio of the national average wage index for 1997, $27,426.00, compared to that for 1992, $22,935.42, is 1.1957924. Multiplying the 1994 retirement earnings test monthly exempt amount of $670 by the ratio 1.1957924 produces the amount of $801.18. This must then be rounded to $800. Because $800 is larger than the corresponding current exempt amount of $760, the retirement earnings test monthly exempt amount for beneficiaries under age 65 is thus determined to be $800 for 1999. The corresponding retirement earnings test annual exempt amount for these beneficiaries is $9,600.

Computing Benefits After 1978

General. The Social Security Amendments of 1977 provided a method for computing benefits which generally applies when a worker first becomes eligible for benefits after 1978. This method uses the worker's "average indexed monthly earnings" to compute the primary insurance amount. The computation formula is adjusted automatically each year to reflect changes in general wage levels, as measured by the national average wage index.

A worker's earnings are adjusted, or "indexed," to reflect the change in general wage levels that occurred during the worker's years of employment. Such indexation ensures that a worker's future benefits reflect the general rise in the standard of living that occurs during his or her working lifetime. A certain number of years of earnings are needed to compute the average indexed monthly earnings. After the number of years is determined, those years with the highest indexed earnings are chosen, the indexed earnings are summed, and the total amount is divided by the total number of months in those years. The resulting average amount is then rounded down to the next lower dollar amount. The result is the average indexed monthly earnings.

For example, to compute the average indexed monthly earnings for a worker attaining age 62, becoming disabled before age 62, or dying before attaining age 62, in 1999, the national average wage index for 1997, $27,426.00, is divided by the national average wage index for each year prior to 1997 in which the worker had earnings. The actual wages and self-employment income, as defined in section 211(b) of the Act and credited for each year, is multiplied by the corresponding ratio to obtain the worker's indexed earnings for each year before 1997. Any earnings in 1997 or later are considered at face value, without indexing. The average indexed monthly earnings is then computed and used to determine the worker's primary insurance amount for 1999.

Computing the Primary Insurance Amount.

The primary insurance amount is the sum of three separate percentages of portions of the average indexed monthly earnings. In 1979 (the first year the formula was in effect), these portions were the first $180, the amount between $180 and $1,085, and the amount over $1,085. The dollar amounts in the formula which govern the portions of the average indexed monthly earnings are frequently referred to as the "bend points" of the formula. Thus, the bend points for 1979 were $180 and $1,085.

The bend points for 1999 are obtained by multiplying the corresponding 1979 bend-point amounts by the ratio between the national average wage index for 1997, $27,426.00, and for 1977, $9,779.44. These results are then rounded to the nearest dollar. For 1999, the ratio is 2.8044551. Multiplying the 1979 amounts of $180 and $1,085 by 2.8044551 produces the amounts of $504.80 and $3,042.83. These must then be rounded to $505 and $3,043. Accordingly, the portions of the average indexed monthly earnings to be used in 1999 are determined to be the first $505, the amount between $505 and $3,043, and the amount over $3,043.

Consequently, for individuals who first become eligible for old-age insurance benefits or disability insurance benefits in 1999, or who die in 1999 before becoming eligible for benefits, their primary insurance amount will be the sum of:

(a) 90 percent of the first $505 of their average indexed monthly earnings, plus

(b) 32 percent of their average indexed monthly earnings over $505 and through $3,043, plus

(c) 15 percent of their average indexed monthly earnings over $3,043.

This amount is then rounded to the next lower multiple of $.10 if it is not already a multiple of $.10. This formula and the rounding adjustment described above are contained in section 215(a) of the Act (42 U.S.C. 415(a)).

Maximum Benefits Payable to a Family

General. The 1977 amendments continued the long established policy of limiting the total monthly benefits that a worker's family may receive based on his or her primary insurance amount. Those amendments also continued the then existing relationship between maximum family benefits and primary insurance amounts but did change the method of computing the maximum amount of benefits that may be paid to a worker's family. The Social Security Disability Amendments of 1980 (Pub. L. 96-265) established a formula for computing the maximum benefits payable to the family of a disabled worker. This formula is applied to the family benefits of workers who first become entitled to disability insurance benefits after June 30, 1980, and who first become eligible for these benefits after 1978. For disabled workers initially entitled to disability benefits before July 1980, or whose disability began before 1979, the family maximum payable is computed the same as the old-age and survivor family maximum.

Computing the Old-Age and Survivor Family Maximum. The formula used to compute the family maximum is similar to that used to compute the primary insurance amount. It involves computing the sum of four separate percentages of portions of the worker's primary insurance amount. In 1979, these portions were the first $230, the amount between $230 and $332, the amount between $332 and $433, and the amount over $433. The dollar amounts in the formula which govern the portions of the primary insurance amount are frequently referred to as the "bend points" of the family-maximum formula. Thus, the bend points for 1979 were $230, $332, and $433.

The bend points for 1999 are obtained by multiplying the corresponding 1979 bend-point amounts by the ratio between the national average wage index for 1997, $27,426.00, and the average for 1977, $9,779.44. This amount is then rounded to the nearest dollar. For 1999, the ratio is 2.8044551. Multiplying the amounts of $230, $332, and $433 by 2.8044551 produces the amounts of $645.02, $931.08, and $1,214.33. These amounts are then rounded to $645, $931, and $1,214. Accordingly, the portions of the primary insurance amounts to be used in 1999 are determined to be the first $645, the amount between $645 and $931, the amount between $931 and $1,214, and the amount over $1,214.

Consequently, for the family of a worker who becomes age 62 or dies in 1999 before age 62, the total amount of benefits payable to them will be computed so that it does not exceed:

(a) 150 percent of the first $645 of the worker's primary insurance amount, plus

(b) 272 percent of the worker's primary insurance amount over $645 through $931, plus

(c) 134 percent of the worker's primary insurance amount over $931 through $1,214, plus

(d) 175 percent of the worker's primary insurance amount over $1,214.

This amount is then rounded to the next lower multiple of $.10 if it is not already a multiple of $.10. This formula and the rounding adjustment described above are contained in section 203(a) of the Act (42 U.S.C. 403(a)).

Quarter of Coverage Amount

General. The 1999 amount of earnings required for a quarter of coverage is $740. A quarter of coverage is the basic unit for determining whether a worker is insured under the Social Security program. For years before 1978, an individual generally was credited with a quarter of coverage for each quarter in which wages of $50 or more were paid, or an individual was credited with 4 quarters of coverage for every taxable year in which $400 or more of self-employment income was earned. Beginning in 1978, wages generally are no longer reported on a quarterly basis; instead, annual reports are made. With the change to annual reporting, section 352(b) of the Social Security Amendments of 1977 amended section 213(d)

of the Act to provide that a quarter of coverage would be credited for each $250 of an individual's total wages and self-employment income for calendar year 1978 (up to a maximum of 4 quarters of coverage for the year).

Computation. Under the prescribed formula, the quarter of coverage amount for 1999 shall be equal to the larger of (1) the 1978 amount of $250 multiplied by the ratio of the national average wage index for 1997 to that for 1976, or (2) the current amount of $700. Section 213(d) further provides that if the amount so determined is not a multiple of $10, it shall be rounded to the nearest multiple of $10.

Quarter of Coverage Amount. The ratio of the national average wage index for 1997, $27,426.00, compared to that for 1976, $9,226.48, is 2.9725312. Multiplying the 1978 quarter of coverage amount of $250 by the ratio of 2.9725312 produces the amount of $743.13, which must then be rounded to $740. Because $740 exceeds the current amount of $700, the quarter of coverage amount is determined to be $740 for 1999.

"Old-Law" Contribution and Benefit Base

General. The 1999 "old-law" contribution and benefit base is $53,700. This is the base that would have been effective under the Act without the enactment of the 1977 amendments. The base is computed under section 230(b) of the Act as it read prior to the 1977 amendments.

The "old-law" contribution and benefit base is used by:

(a) the Railroad Retirement program to determine certain tax liabilities and tier II benefits payable under that program to supplement the tier I payments which correspond to basic Social Security benefits,

(b) the Pension Benefit Guaranty Corporation to determine the maximum amount of pension guaranteed under the Employee Retirement Income Security Act (as stated in section 230(d) of the Social Security Act),

(c) Social Security to determine a year of coverage in computing the special minimum benefit, as described earlier, and

(d) Social Security to determine a year of coverage (acquired whenever earnings equal or exceed 25 percent of the "old-law" base for this purpose only) in computing benefits for persons who are also eligible to receive pensions based on employment not covered under section 210 of the Act.

Computation. The base is computed using the automatic adjustment formula in section 230(b) of the Act as it read prior to the enactment of the 1977 amendments, but with the revised indexing formula introduced by section 321(g) of the "Social Security Independence and Program Improvements Act of 1994." Under the formula, the "old-law" contribution and benefit base shall be the larger of (1) the 1994 "old-law" base ($45,000) multiplied by the ratio of the national average wage index for 1997 to that for 1992, or (2) the current "old-law" base ($50,700). If the amount so determined is not a multiple of $300, it shall be rounded to the nearest multiple of $300.

Amount. The ratio of the national average wage index for 1997, $27,426.00, compared to that for 1992, $22,935.42, is 1.1957924. Multiplying the 1994 "old-law" contribution and benefit base amount of $45,000 by the ratio of 1.1957924 produces the amount of $53,810.66 which must then be rounded to $53,700. Because $53,700 exceeds the current amount of $50,700, the "old-law" contribution and benefit base is determined to be $53,700 for 1999.

Substantial Gainful Activity Amount for Blind Individuals

General. A finding of disability under titles II and XVI of the Act requires that a person be unable to engage in substantial gainful activity (SGA). Under current regulations, a person who is not statutorily blind and who is earning more than $500 a month (net of impairment-related work expenses) is ordinarily considered to be engaging in SGA. Section 223(d)(4)(A) of the Act specifies a higher SGA amount for statutorily blind individuals. This higher SGA amount increases in accordance with increases in the national average wage index.

Computation. The monthly SGA amount for statutorily blind individuals for 1999 shall be the larger of (1) such amount for 1994 multiplied by the ratio of the national average wage index for 1997 to that for 1992, or (2) such amount for 1998. If the amount so determined is not a multiple of $10, it shall be rounded to the nearest multiple of $10.

SGA Amount for Statutorily Blind Individuals. The ratio of the national average wage index for 1997, $27,426.00, compared to that for 1992, $22,935.42, is 1.1957924. Multiplying the 1994 monthly SGA amount for statutorily blind individuals of $930 by the ratio of 1.1957924 produces the amount of $1,112.09. This must then be rounded to $1,110. Because $1,110 is larger than the current amount of $1,050, the monthly SGA amount for statutorily blind individuals is determined to be $1,110 for 1999.

Domestic Employee Coverage Threshold

General. Section 2 of the "Social Security Domestic Employment Reform Act of 1994" (Pub. L. 103-387) increased the threshold for coverage of a domestic employee's wages paid per employer from $50 per calendar quarter to $1,000 in calendar year 1994. The statute holds the coverage threshold at the $1,000 level for 1995 and then increases the threshold in $100 increments for years after 1995. The

formula for increasing the threshold is provided in section 3121(x) of the Internal Revenue Code.

Computation. Under the formula, the domestic employee coverage threshold amount for 1999 shall be equal to the 1995 amount of $1,000 multiplied by the ratio of the national average wage index for 1997 to that for 1993. If the amount so determined is not a multiple of $100, it shall be rounded to the next lower multiple of $100.

Domestic Employee Coverage Threshold Amount. The ratio of the national average wage index for 1997, $27,426.00, compared to that for 1993, $23,132.67, is 1.1855960. Multiplying the 1995 domestic employee coverage threshold amount of $1,000 by the ratio of 1.1855960 produces the amount of $1,185.60, which must then be rounded to $1,100. Accordingly, the domestic employee coverage threshold amount is determined to be $1,100 for 1999.

OASDI Fund Ratio

General. In addition to providing an annual automatic cost-of-living increase in OASDI benefits, section 215(i) of the Act also includes a "stabilizer" provision that can limit such benefit increase under certain circumstances. If the combined assets of the OASI and DI Trust Funds, as a percentage of annual expenditures, are below a specified threshold, the automatic benefit increase is equal to the lesser of (1) the increase in the national average wage index or (2) the increase in prices. The threshold specified for the OASDI fund ratio is 20.0 percent for benefit increases for December of 1989 and later. The law also provides for subsequent "catch-up" benefit increases for beneficiaries whose previous benefit increases were affected by this provision. "Catch-up" benefit increases can occur only when trust fund assets exceed 32.0 percent of annual expenditures.

Computation. Section 215(i) specifies the computation and application of the OASDI fund ratio. The OASDI fund ratio for 1998 is the ratio of (1) the combined assets of the OASI and DI Trust Funds at the beginning of 1998 to (2) the estimated expenditures of the OASI and DI Trust Funds during 1998, excluding transfer payments between the OASI and DI Trust Funds, and reducing any transfers to the Railroad Retirement Account by any transfers from that account into either trust fund.

Ratio. The combined assets of the OASI and DI Trust Funds at the beginning of 1998 equaled $655,510 million, and the expenditures are estimated to be $382,871 million. Thus, the OASDI fund ratio for 1998 is 171.2 percent, which exceeds the applicable threshold of 20.0 percent. Therefore, the stabilizer provision does not affect the benefit increase for December 1998. Although the OASDI fund ratio exceeds the 32.0-percent threshold for potential "catch-up" benefit increases, no past benefit increase has been reduced under the stabilizer provision. Thus, no "catch-up" benefit increase is required.

(Catalog of Federal Domestic Assistance: Program Nos. 96.001 Social Security-Disability Insurance; 96.002 Social Security-Retirement Insurance; 96.003 Social Security-Special Benefits for Persons Aged 72 and Over; 96.004 Social Security-Survivors Insurance; 96.006 Supplemental Security Income.)

Dated: October 21, 1998.

Kenneth S. Apfel

Commissioner,

Social Security Administration

[FR Doc. 98-28988 Filed 10-29-98; 8:45 am]

BILLING CODE 4190-29-P

This material was published in the Federal Register on October 30, 1998, at 63 FR 58446.

G. GLOSSARY

Actuarial balance. The difference between the summarized income rate and the summarized cost rate over a given valuation period.

Actuarial deficit. A negative actuarial balance.

Adjusted gross income—AGI. Amount of income potentially subject to Federal income taxation, before consideration of exemptions and deductions.

Administrative expenses. Expenses incurred by the Social Security Administration and the Department of the Treasury in administering the OASDI program and the provisions of the Internal Revenue Code relating to the collection of contributions. Such administrative expenses are paid from the OASI and DI Trust Funds.

Advance tax transfers. Amounts representing the estimated total OASDI tax contributions for a given month. From May 1983 through November 1990, such amounts were credited to the OASI and DI Trust Funds at the beginning of each month. Reimbursements were made from the trust funds to the general fund of the Treasury for the associated loss of interest. Advance tax transfers are no longer made unless needed in order to pay benefits.

Alternatives I, II, or III. See "Assumptions."

Annual balance. The difference between the income rate and the cost rate in a given year.

Assets. Treasury notes and bonds, other securities guaranteed by the Federal Government, certain Federally sponsored agency obligations, and cash, held by the trust funds for investment purposes.

Assumptions. Values relating to future trends in certain key factors which affect the balance in the trust funds. Demographic assumptions include fertility, mortality, net immigration, marriage, divorce, retirement patterns, disability incidence and termination rates, and changes in the labor force. Economic assumptions include unemployment, average earnings, inflation, interest rates, and productivity. Three sets of economic assumptions are presented in this report—

- Alternative I is characterized as a "low cost" set—it assumes relatively rapid economic growth, low inflation, and favorable (from the standpoint of program financing) demographic conditions.
- Alternative II is the "intermediate" set of assumptions, and represents the Trustees' "best estimates" of likely future economic and demographic conditions.
- Alternative III, characterized as a "high cost" set, assumes slow economic growth, more rapid inflation, and financially disadvantageous demographic conditions.

See tables II.D1 and II.D2.

Automatic cost-of-living increase. The annual increase in benefits, effective for December, reflecting the increase in the cost of living. The benefit increase equals the percentage increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers measured from the average over July, August, and September of the preceding year to the average for the same 3 months in the current year. If the increase is less than one-tenth of 1 percent, when rounded, there is no automatic increase for the current year; the increase for the next year would reflect the increase in the cost of living over a 2-year period. See table II.E2. If the "stabilizer provision" applies, the increase may be less than the cost-of-living increase.

Auxiliary beneficiary. Monthly benefits payable to a spouse or child of a retired or disabled worker, or to a survivor of a deceased worker.

Average indexed monthly earnings—AIME. The amount of earnings used in determining the primary insurance amount (PIA) for most workers who attain age 62, become disabled, or die after 1978. A worker's actual past earnings are adjusted by changes in the "average wage index," in order to bring them up to their approximately equivalent value at the time of retirement or other eligibility for benefits.

Average wage index. The average amount of total wages for each year after 1950, including wages in noncovered employment and wages in covered employment in excess of the OASDI contribution and benefit base. These amounts are used to index the earnings of most workers first becoming eligible for benefits in 1979 or later, and for automatic adjustments in the contribution and benefit base, bend points, earnings test exempt amounts, and other wage-indexed amounts. See tables II.E1, II.E2, and III.B1.

Award. An administrative determination that an individual is entitled to receive a specified type of OASDI benefit. Awards can represent not only new entrants to the benefit rolls but also persons already on the rolls who become entitled to a different type of benefit. Awards usually result in the immediate payment of benefits, although payments may be deferred or withheld depending on the individual's particular circumstances.

Baby boom. The period from the end of World War II through the mid-1960s marked by unusually high birth rates.

Bend points. The dollar amounts defining the AIME or PIA brackets in the benefit formulas. For the bend points for years 1979 and later, see table II.E3.

Beneficiary. A person who has been awarded benefits on the basis of his or her own or another's earnings record. The benefits may be either in current-payment status or withheld.

Benefit award. See "Award."

Benefit payments. The amounts disbursed for OASI and DI benefits by the Department of the Treasury in specified periods.

Benefit termination. See "Termination."

Best estimate assumptions. See "Assumptions."

Board of Trustees. A Board established by the Social Security Act to oversee the financial operations of the Federal Old-Age and Survivors Insurance Trust Fund and the Federal Disability Insurance Trust Fund. The Board is composed of six members, four of whom serve automatically by virtue of their positions in the Federal Government: the Secretary of the Treasury, who is the Managing Trustee, the Secretary of Labor, the Secretary of Health and Human Services, and the Commissioner of Social Security. The other two members are appointed by the President and confirmed by the Senate to serve as public representatives. Stephen G. Kellison and Marilyn Moon began serving 4-year terms on July 20, 1995.

Book value. A bond's value between its price at purchase and its value at maturity. Book value is calculated as par value plus unamortized premium, if purchased at a price above its par value, or less unamortized discount, if purchased below par.

COLA. See "Automatic cost-of-living increase."

Constant dollars. Amounts adjusted by the CPI to the value of the dollar in a particular year.

Consumer Price Index—CPI. Relative measure of inflation. In this report, all references to the CPI relate to the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). See table II.D1.

Contribution and benefit base. Annual dollar amount above which earnings in employment covered under the OASDI program are neither taxable nor creditable for benefit computation purposes. (Also referred to as "maximum contribution and benefit base," "annual creditable maximum," "taxable maximum," and "maximum taxable.") See tables II.B1 and II.E2. See also, "HI contribution base."

Contributions. The amount based on a percent of earnings, up to an annual maximum, that must be paid by—

- employers and employees on wages from employment under the Federal Insurance Contributions Act,
- the self-employed on net earnings from self-employment under the Self-Employment Contributions Act, and
- States on the wages of State and local government employees covered under the Social Security Act through voluntary agreements under section 218 of the Act.

Generally, employers withhold contributions from wages, add an equal amount of contributions, and pay both on a current basis. Also referred to as "taxes."

Cost-of-living increase. See "Automatic cost-of-living increase."

Cost rate. The cost rate for a year is the ratio of the cost (also called outgo, expenditures, or disbursements) of the program to the taxable payroll for the year. In this context, the outgo is defined to include benefit payments, special monthly payments to certain uninsured persons who have 3 or more quarters of coverage (and whose payments are therefore not reimbursable from the general fund of the Treasury), administrative expenses, net transfers from the trust funds to the Railroad Retirement program under the financial-interchange provisions, and payments for vocational rehabilitation services for disabled beneficiaries; it excludes special monthly payments to certain uninsured persons whose payments are reimbursable from the general fund of the Treasury (as described above), and transfers under the interfund borrowing provisions.

Covered earnings. Earnings in employment covered by the OASDI program.

Covered employment. All employment and self-employment creditable for Social Security purposes. Almost every kind of employment and self-employment is covered under the program. In a few employment situations, for example, religious orders under a vow of poverty, foreign affiliates of American employers, or State and local governments, coverage must be elected by the employer. However, effective July 1991, coverage is mandatory for State and local employees who are not participating in a public employee retirement system. In a few situations, for example, ministers or self-employed members of certain religious groups, workers can opt out of coverage.

Covered worker. A person who has earnings creditable for Social Security purposes on the basis of services for wages in covered employment and/or on the basis of income from covered self-employment.

Current-cost financing. See "Pay-as-you-go financing."

Current dollars. Amounts expressed in nominal dollars with no adjustment for inflationary changes in the value of the dollar over time.

Current-payment status. Status of a beneficiary to whom a benefit is being paid for a given month (with or without deductions, provided the deductions add to less than a full month's benefit). A benefit in current-payment status for a month is usually payable on the third day of the following month.

Deemed wage credit. See "Military service wage credits."

Delayed Retirement Credit. Increases the benefit amount for certain individuals who did not receive benefits for months after attainment of the normal retirement age but before age 70. Delayed retirement credit increases apply for benefits beginning January of the year following the year the individual attains the normal retirement age. See table II.E4.

Demographic assumptions. See "Assumptions."

Disability. For Social Security purposes, the inability to engage in substantial gainful activity (see "Substantial gainful activity—SGA") by reason of any medically determinable physical or mental impairment that can be expected to result in death or to last for a continuous period of not less than 12 months. Special rules apply for workers age 55 or older whose disability is based on blindness.

The law generally requires that a person be disabled continuously for 5 months before he or she can qualify for a disabled-worker benefit.

Disability incidence rate. The proportion of workers in a given year, insured for but not receiving disability benefits, who apply for and are awarded disability benefits.

Disability Insurance (DI) Trust Fund. See "Trust fund."

Disability termination rate. The proportion of disabled-worker beneficiaries in a given year whose disability benefits terminate as a result of the individual's recovery, death, or attainment of normal retirement age.

Disabled-worker benefit. A monthly benefit payable to a disabled worker under normal retirement age and insured for disability. Before November 1960, disability benefits were limited to disabled workers aged 50-64.

Earnings. Unless otherwise qualified, all wages from employment and net earnings from self-employment, whether or not taxable or covered.

Earnings test. The provision requiring the withholding of benefits if beneficiaries under age 70 have earnings in excess of certain exempt amounts. See table II.E2.

Economic assumptions. See "Assumptions."

Effective interest rate. See "Interest rate."

Excess wages. Wages in excess of the contribution and benefit base on which a worker initially pays taxes (usually as a result of working for more than one employer during a year). Employee taxes on excess wages are refunded to affected employees, while the employer taxes are not refunded.

Federal Insurance Contributions Act—FICA. Provision authorizing taxes on the wages of employed persons to provide for Retirement, Survivors, and Disability Insurance, and for Hospital Insurance. The tax is paid in equal amounts by workers and their employers.

Financial interchange. Provisions of the Railroad Retirement Act providing for transfers between the trust funds and the Social Security Equivalent Benefit Account of the Railroad Retirement program in order to place each trust fund in the same position it would have been in if railroad employment had always been covered under Social Security.

Fiscal year. The accounting year of the United States Government. Since 1976, a fiscal year is the 12-month period ending September 30. For

example, fiscal year 1999 began October 1, 1998 and will end September 30, 1999.

Full advance funding. A financing scheme where taxes or contributions are established to match the full cost of future benefits as these costs are incurred through current service. Such financing methods also provide for amortization over a fixed period of any financial liability that is incurred at the beginning of the program (or subsequent modification) as a result of granting credit for past service.

General fund of the Treasury. Funds held by the Treasury of the United States, other than receipts collected for a specific purpose (such as Social Security) and maintained in a separate account for that purpose.

General fund reimbursements. Transfers from the general fund of the Treasury to the trust funds for specific purposes defined in the law, such as:

- The costs associated with providing special payments made to uninsured persons who attained age 72 before 1968, and who had fewer than 3 quarters of coverage.
- Payments corresponding to the employee-employer taxes on deemed wage credits for military personnel.
- Interest on checks which are not negotiated 6 months after the month of issue. (For checks issued before October, 1989, the principal was returned to the trust funds as a general fund reimbursement; since that time, the principal amount is automatically returned to the issuing fund when the check is uncashed after a year.)
- Administrative expenses incurred as a result of furnishing information on deferred vested benefits to pension plan participants, as required by the Employee Retirement Income Security Act of 1974 (Public Law 93-406).

Gross Domestic Product—GDP. The total dollar value of all goods and services produced by labor and property located in the United States, regardless of who supplies the labor or property.

HI contribution base. Annual dollar amount above which earnings in employment covered under the HI program are not taxable. (Also referred to as "maximum contribution base," "taxable maximum," and "maximum taxable.") Beginning in 1994, the HI contribution base was eliminated.

High cost assumptions. See "Assumptions."

Hospital Insurance (HI) Trust Fund. See "Trust fund."

Income rate. Ratio of income from tax revenues on a liability basis (payroll-tax contributions and income from the taxation of benefits) to the OASDI taxable payroll for the year.

Inflation. An increase in the volume of money and credit relative to available goods, resulting in an increase in the general price level.

Insured status. The state or condition of having sufficient quarters of coverage to meet the eligibility requirements for retired-worker or disabled-worker benefits, or to permit the worker's spouse and children or survivors to establish eligibility for benefits in the event of his or her disability, retirement, or death. See "Quarters of coverage."

Interest. A payment in exchange for the use of money during a specified period.

Interest rate. Interest rates on new public-debt obligations issuable to Federal trust funds (see "Special public-debt obligation") are determined monthly. Such rates are set equal to the average market yield on all outstanding marketable U.S. securities not due to mature for at least 4 years from the date of the determination. See table II.D1 for historical and assumed future interest rates on new special-issue securities. The "effective" interest rate for a trust fund is the ratio of the interest earned by the fund over a given period of time to the average level of assets held by the fund during the period. The effective rate of interest thus represents a measure of the overall average interest earnings on the fund's portfolio of assets.

Interfund borrowing. The borrowing of assets by a trust fund (OASI, DI, or HI) from another of the trust funds when the first fund is in danger of exhaustion. Interfund borrowing was permitted by the Social Security Act only during 1982 through 1987; all amounts borrowed were to be repaid prior to the end of 1989. The only exercise of this authority occurred in 1982, when the OASI Trust Fund borrowed assets from the DI and HI Trust Funds. The final repayment of borrowed amounts occurred in 1986.

Intermediate assumptions. See "Assumptions."

Long range. The next 75 years. Long-range actuarial estimates are made for this period because it is approximately the maximum remaining lifetime of current Social Security participants.

Low cost assumptions. See "Assumptions."

Lump-sum death benefit. A lump sum, generally $255, payable on the death of a fully or currently insured worker. The lump sum is payable to the surviving spouse of the worker, under most circumstances, or to the worker's children.

Maximum family benefit. The maximum monthly amount that can be paid on a worker's earnings record. Whenever the total of the individual monthly benefits payable to all the beneficiaries entitled on one earnings record exceeds the maximum, each dependent's or survivor's benefit is proportionately reduced to bring the total within the maximum. Benefits payable to divorced spouses or surviving divorced spouses are not reduced under the family maximum provision.

Medicare. A nationwide, Federally administered health insurance program authorized in 1965 to cover the cost of hospitalization, medical care, and some related services for most people over age 65, people receiving Social Security Disability Insurance payments for 2 years, and people with End-Stage Renal Disease. Medicare consists of two separate but coordinated programs—Part A (Hospital Insurance, HI) and Part B (Supplementary Medical Insurance, SMI). All persons entitled to HI are eligible to enroll in the SMI program on a voluntary basis by paying a monthly premium. Health insurance protection is available to Medicare beneficiaries without regard to income.

Military service wage credits. Credits recognizing that military personnel receive wages in kind (such as food and shelter) in addition to their basic pay and other cash payments. Noncontributory wage credits of $160 were provided for each month of active military service from September 16, 1940, through December 31, 1956. For years after 1956, the basic pay of military personnel is covered under the Social Security program on a contributory basis. In addition to the contributory credits for basic pay, noncontributory wage credits of $300 were granted for each calendar quarter, from January 1957 through December 1977, in which a person received pay for military service. In years after 1977, noncontributory wage credits of $100 are granted for each $300 of military wages, up to a maximum credit of $1,200 per calendar year.

National average wage index. See "Average wage index."

Non-Accelerating Inflation Rate of Unemployment. The rate of unemployment associated with no upward or downward pressure on the rate of inflation.

Normal retirement age. The age at which a person may first become entitled to unreduced retirement benefits. Currently age 65, but scheduled under present law to increase gradually to 67 for persons reaching that age in 2027 or later, beginning with an increase to 65 years and 2 months for persons reaching age 65 in 2003. See table II.E4.

Old-Age and Survivors Insurance (OASI) Trust Fund. See "Trust fund."

Old-law base. Amount the contribution and benefit base would have been if the discretionary increases in the base under the 1977 amendments had not been enacted. The Social Security Amendments of 1972 provided for automatic annual indexing of the contribution and benefit base. The Social Security Amendments of 1977 provided ad hoc increases to the bases for 1979-81, with subsequent bases updated in accordance with the normal indexing procedure. See table II.E3.

Par value. The value printed on the face of a bond. For both public and special issues held by the trust funds, par value is also the redemption value at maturity.

Partial advance funding. A financing scheme where taxes are scheduled to provide a substantial accumulation of trust fund assets, thereby generating additional interest income to the trust funds and reducing the need for payroll tax increases in periods when costs are relatively high. (Higher general taxes or additional borrowing may be required, however, to support the payment of such interest.) While substantial, the trust fund buildup under partial advance funding is much smaller than it would be with full advance funding.

Pay-as-you-go financing. A financing scheme where taxes are scheduled to produce just as much income as required to pay current benefits, with trust fund assets built up only to the extent needed to prevent exhaustion of the fund by random economic fluctuations.

Payment cycling. Beneficiaries on the rolls before May 1, 1997, are paid on the third of the month. Persons applying for OASDI benefits after April 1997, however, generally are paid on the second, third, or fourth Wednesday of the month following the month for which payment is due. The particular Wednesday payment date is based on the wage earner's date of birth. For those born on the first through tenth, the benefit payment day is the second Wednesday of the month; for those born on the eleventh through the twentieth, the benefit payment day is the third Wednesday of the month; and for those born after the twentieth of the month, the payment day is the fourth Wednesday of the month.

Payroll taxes. A tax levied on the gross wages of workers. See tables II.B1 and III.A1.

Population in the Social Security Area. The population comprised of (i) residents of the 50 States and the District of Columbia (adjusted for net census undercount); (ii) civilian residents of Puerto Rico, the Virgin Islands, Guam, and American Samoa; (iii) Federal civilian employees and persons in the Armed Forces abroad and their dependents; (iv) crew members of merchant vessels; and (v) all other U.S. citizens abroad.

Present value. The equivalent value, at the present time, of a future stream of payments (either income or expenditures). The present value of a future stream of payments may be thought of as the lump-sum amount that, if invested today, together with interest earnings would be just enough to meet each of the payments as they fell due. At the time of the last payment, the invested fund would be exactly zero. For example, a home mortgage of $100,000 represents the present value at 8 percent interest of future monthly payments of $714.40 for the next 30 years. Present values are widely used in calculations involving financial transactions over long periods of time to account for the time value of money (interest) and the changing value of the dollar (inflation).

Primary insurance amount—PIA. The monthly amount payable to a retired worker who begins to receive benefits at normal retirement age or (generally) to a disabled worker. This amount, which is related to the worker's average monthly wage or average indexed monthly earnings, is also the amount used as a base for computing all types of benefits payable on the basis of one individual's earnings record.

Primary insurance amount formula. The mathematical formula relating the PIA to the AIME for workers who attain age 62, become disabled, or die after 1978. The PIA is equal to the sum of 90 percent of AIME up to the first bend point, plus 32 percent of AIME above the first bend point up to the second bend point, plus 15 percent of AIME in excess of the second bend point. Automatic benefit increases are applied beginning with the year of eligibility. See table II.E3 for historical and assumed future bend points and table II.E2 for historical and assumed future benefit increases.

Quarters of coverage. Basic unit of measurement for determining insured status. In 1999, a worker receives one quarter of coverage (up to a total of four) for each $740 of annual covered earnings. The amount of earnings required for a quarter of coverage is subject to annual automatic increases in proportion to increases in average wages. For amounts applicable for years after 1978, see table II.E3.

Railroad retirement. A Federal insurance program, somewhat similar to Social Security, designed for workers in the railroad industry. The provisions of the Railroad Retirement Act provide for a system of coordination and financial interchange between the Railroad Retirement program and the Social Security program.

Reallocation of tax rates. An increase in the tax rate payable to either the OASI or DI Trust Fund, with a corresponding reduction in the rate for the other fund, so that the total OASDI tax rate is not changed.

Real-wage differential. The difference between the percentage increases in (1) the average annual wage in covered employment and (2) the average annual Consumer Price Index. See table II.D1.

Recession. A period of adverse economic conditions; in particular, two or more successive calendar quarters of negative growth in Gross Domestic Product.

Retired-worker benefit. A monthly benefit payable to a fully insured retired worker aged 62 or older or to a person entitled under the transitionally insured status provision in the law. Retired-worker benefit data do not include special age-72 benefits.

Retirement age. The age at which an individual establishes entitlement to retirement benefits. See also, "Normal retirement age."

Retirement earnings test. See "Earnings test."

Retirement test. See "Earnings test."

Self-employment. Operation of a trade or business by an individual or by a partnership in which an individual is a member.

Self-Employment Contributions Act—SECA. Provision authorizing Social Security taxes on the net earnings of most self-employed persons.

Short range. The next 10 years. Short-range actuarial estimates are prepared for this period because of the short-range test of financial adequacy. The Social Security Act requires estimates for 5 years; estimates are prepared for an additional 5 years to help clarify trends which are only starting to develop in the mandated first 5-year period.

Social Security Act. Provisions of the law governing most operations of the Social Security program. Original Social Security Act is Public Law 74-271, enacted August 14, 1935. With subsequent amendments, the Social Security Act consists of 20 titles, of which four have been repealed. The Old-Age, Survivors, and Disability Insurance program is authorized by title II of the Social Security Act.

Special public-debt obligation. Securities of the United States Government issued exclusively to the OASI, DI, HI, and SMI Trust Funds and other Federal trust funds. Section 201(d) of the Social Security Act provides that the public-debt obligations issued for purchase by the OASI and DI Trust Funds shall have maturities fixed with due regard for the needs of the funds. The usual practice in the past has been to spread the holdings of special issues, as of each June 30, so that the amounts maturing in each of the next 15 years are approximately equal. Special public-debt obligations are redeemable at par value at any time and carry interest rates determined by law (see "Interest rate"). See also tables II.C2 and II.C4 for a listing of the obligations held by the OASI and DI Trust Funds, respectively.

Stabilizer provision. Section 215(i)(1)(C) of the Act, which provides that if the combined assets of the OASI and DI Trust Funds, as a percentage of estimated annual expenditures, fall below a specified level, automatic benefit increases will be limited to the lower of the increases in wages or prices. The specified level is 20 percent for benefit increases in 1989 and later.

Statutory blindness. Central visual acuity of 20/200 or less in the better eye with the use of a correcting lens or tunnel vision of 20^{o} or less.

Substantial gainful activity—SGA. The level of work activity used to establish disability. A finding of disability requires that a person be unable to engage in substantial gainful activity. Under current regulations, a person who is not statutorily blind and is actually earning more than $500 a month (net of impairment-related work expenses) is ordinarily considered to be engaging in substantial gainful activity. SSA published in the Federal Register on February 16, 1999 (64 FR 7559) a notice of proposed rulemaking indicating the intent to raise this SGA amount for

the nonblind to $700, effective this year. A person who is statutorily blind (see "Statutory blindness") is not considered to be engaging in substantial gainful activity, for the purpose of determining a condition of disability, unless the person's earnings are more than $1,110 a month in 1999 (net of impairment-related work expenses). This amount for the blind is subject to adjustment each year to reflect increases in average wage levels.

Summarized balance. The difference between the summarized cost rate and the summarized income rate, expressed as a percentage of taxable payroll.

Summarized cost rate. The ratio of the present value of expenditures to the present value of the taxable payroll for the years in a given period. This ratio can be used as a measure of the relative level of expenditures during the period in question. For purposes of evaluating the financial adequacy of the program, the summarized cost rate is adjusted to include the cost of reaching and maintaining a "target" trust fund level. Because a trust fund level of about 1 year's expenditures is considered to be an adequate reserve for unforeseen contingencies, the targeted trust fund ratio used in determining summarized cost rates is 100 percent of annual expenditures. Accordingly, the adjusted summarized cost rate is equal to the ratio of (a) the sum of the present value of the outgo during the period plus the present value of the targeted ending trust fund level, to (b) the present value of the taxable payroll during the projection period.

Summarized income rate. The ratio of the present value of tax income to the present value of taxable payroll for the years in a given period. This ratio can be used as a measure of the relative level of income during the period in question. For purposes of evaluating the financial adequacy of the program, the summarized income rate is adjusted to include assets on hand at the beginning of the period. Accordingly, the adjusted summarized income rate equals the ratio of (a) the sum of the trust fund balance at the beginning of the period plus the present value of the total income from taxes during the period, to (b) the present value of the taxable payroll for the years in the period.

Supplemental Security Income—SSI. A Federally administered program (often with State supplementation) of cash assistance for needy aged, blind, or disabled persons. SSI is funded through the general fund of the Treasury and administered by the Social Security Administration.

Supplementary Medical Insurance (SMI) Trust Fund. See "Trust fund."

Survivor benefit. Benefit payable to a survivor of a deceased worker.

Taxable earnings. Wages and/or self-employment income, in employment covered by the OASDI and/or HI programs, that is under the applicable annual maximum taxable limit. For 1994 and later, no maximum taxable limit applies to the HI program.

Taxable payroll. A weighted average of taxable wages and taxable self-employment income. When multiplied by the combined employee-employer tax rate, it yields the total amount of taxes incurred by employees, employers, and the self-employed for work during the period.

Taxable self-employment income. The maximum amount of net earnings from self employment by an earner which, when added to any taxable wages, does not exceed the contribution and benefit base. For HI beginning in 1994, all of net earnings from self employment.

Taxable wages. See "Taxable earnings."

Taxation of benefits. During 1984-93, up to one-half of an individual's or a couple's OASDI benefits was potentially subject to Federal income taxation under certain circumstances. The revenue derived from this provision was allocated to the OASI and DI Trust Funds on the basis of the income taxes paid on the benefits from each fund. Beginning in 1994, the maximum portion of OASDI benefits potentially subject to taxation was increased to 85 percent. The additional revenue derived from taxation of benefits in excess of one-half, up to 85 percent, is allocated to the HI Trust Fund.

Taxes. See "Contributions."

Termination. Cessation of payment of a specific type of benefit because the beneficiary is no longer entitled to receive it. For example, benefits might terminate as a result of the death of the beneficiary, the recovery of a disabled beneficiary, or the attainment of age 18 by a child beneficiary. In some cases, the individual may become immediately entitled to another type of benefit (such as the conversion of a disabled-worker beneficiary at normal retirement age to a retired-worker beneficiary).

Test of Long-Range Close Actuarial Balance. Summarized income rates and cost rates are calculated for each of 66 valuation periods within the full 75-year long-range projection period. The first of these periods consists of the next 10 years. Each succeeding period becomes longer by 1 year, culminating with the period consisting of the next 75 years. The long-range test is met if, for each of the 66 valuation periods, the actuarial balance is not less than zero or is negative by, at most, a specified percentage of the summarized cost rate for the same time period. The percentage allowed for a negative actuarial balance is 0 percent for the 10-year period, grading uniformly to 5 percent for the full 75-year period. The criterion for meeting the test is less stringent for the longer periods in recognition of the greater uncertainty associated with estimates for more distant years. The test is applied to OASI and DI separately, as well as combined, based on the intermediate (alternative II) set of assumptions.

Test of Short-Range Financial Adequacy. The conditions required to meet this test are as follows:

- If the trust fund ratio for a fund exceeds 100 percent at the beginning of the projection period, then it must be projected to remain at or above 100 percent throughout the 10-year projection period;
- Alternatively, if the fund ratio is initially less than 100 percent, it must be projected to reach a level of at least 100 percent within 5 years (and not be depleted at any time during this period) and then remain at or above 100 percent throughout the remainder of the 10-year period.

These conditions apply to each trust fund separately, as well as to the combined funds, and are evaluated based on the intermediate (alternative II) set of assumptions.

Total fertility rate. The average number of children who would be born to a woman in her lifetime if she were to experience the birth rates by age observed in, or assumed for, a specified year, and if she were to survive the entire childbearing period.

Trust fund. Separate accounts in the United States Treasury in which are deposited the taxes received under the Federal Insurance Contributions Act, the Self-Employment Contributions Act, contributions resulting from coverage of State and local government employees; any sums received under the financial interchange with the railroad retirement account; voluntary hospital and medical insurance premiums; and transfers of Federal general revenues. Funds not withdrawn for current monthly or service benefits, the financial interchange, and administrative expenses are invested in interest-bearing Federal securities, as required by law; the interest earned is also deposited in the trust funds.

- **Old-Age and Survivors Insurance (OASI).** The trust fund used for paying monthly benefits to retired-worker (old-age) beneficiaries and their spouses and children and to survivors of deceased insured workers.
- **Disability Insurance (DI).** The trust fund used for paying monthly benefits to disabled-worker beneficiaries and their spouses and children and for providing rehabilitation services to the disabled.
- **Hospital Insurance (HI).** The trust fund used for paying part of the costs of inpatient hospital services and related care for aged and disabled individuals who meet the eligibility requirements.
- **Supplementary Medical Insurance (SMI).** The trust fund used for paying part of the costs of physician's services, outpatient hospital services, and other related medical and health services for voluntarily enrolled aged and disabled individuals.

Trust fund ratio. A measure of the adequacy of the trust fund level. Defined as the assets at the beginning of the year, including advance tax transfers (if any), expressed as a percentage of the outgo during the year. The trust fund ratio represents the proportion of a year's outgo which could be paid with the funds available at the beginning of the year.

Unnegotiated check. A check which has not been cashed 6 months after the end of the month in which the check was issued. When a check has been outstanding for a year (i) the check is administratively cancelled by the Department of the Treasury and (ii) the issuing trust fund is reimbursed separately for the amount of the check and interest for the period the check was outstanding. The appropriate trust fund also receives an interest adjustment for the time the check was outstanding if it is cashed 6-12 months after the month of issue. If a check is presented for payment after it is administratively cancelled, a replacement check is issued.

Valuation period. A period of years which is considered as a unit for purposes of calculating the financial status of a trust fund.

Vocational rehabilitation. Services provided to disabled persons to help enable them to return to gainful employment. Reimbursement from the trust funds for the costs of such services is made only in those cases where the services contributed to the successful rehabilitation of the beneficiaries.

Year of exhaustion. The year in which a trust fund would become unable to pay benefits when due because the assets of the fund were exhausted.

H. STATEMENT OF ACTUARIAL OPINION

It is my opinion that (1) the techniques and methodology used herein to evaluate the financial and actuarial status of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds are generally accepted within the actuarial profession; and (2) the assumptions used and the resulting actuarial estimates are, in the aggregate, reasonable for the purpose of evaluating the financial and actuarial status of the trust funds, taking into consideration the experience and expectations of the program.

Harry C. Ballantyne,
Associate of the Society of Actuaries,
Member of the American Academy of Actuaries,
Chief Actuary, Social Security Administration