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THE 2002 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 2002 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND THE FEDERAL DISABILITY INSURANCE TRUST FUNDS

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BOARD OF TRUSTEES OF THE
FEDERAL OLD-AGE AND SURVIVORS INSURANCE
AND DISABILITY INSURANCE TRUST FUNDS,
Washington, D.C., March 26, 2002

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

The Honorable Richard B. Cheney
President of the Senate
Washington, D.C.

Gentlemen:

We have the honor of transmitting to you the 2002 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 62d such report.

Respectfully,

Paul H. O'Neill, *Secretary of the Treasury, and Managing Trustee of the Trust Funds.*

Elaine L. Chao, *Secretary of Labor, and Trustee.*

Tommy G. Thompson, *Secretary of Health and Human Services, and Trustee.*

Jo Anne B. Barnhart, *Commissioner of Social Security, and Trustee.*

John L. Palmer, *Trustee.*

Thomas R. Saving, *Trustee.*

James B. Lockhart III, *Deputy Commissioner of Social Security, and Secretary, Board of Trustees.*

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I. INTRODUCTION

The Board of Trustees of the Social Security Trust Funds reports each year on the current and projected financial condition of the Social Security program, which is financed through two separate trust funds. The Old-Age and Survivors Insurance (OASI) Trust Fund pays monthly benefits to retired workers (including disabled workers who have reached normal retirement age) and their families and to survivors of deceased workers. The Disability Insurance (DI) Trust Fund pays monthly benefits to disabled workers and their families.[1] The report on the current financial status of the funds includes an accounting of the actual income and expenditures for the last year. For future years, the projections of the trust funds' financial condition reflect the Trustees' considered judgment after review of available evidence and expert opinion about all the demographic, economic, and program-specific factors that affect income and expenditures. Projections are presented separately for the next 10 years (the short range) and for the next 75 years (the long range).

Although, in general, a greater degree of certainty can be presumed for projections encompassing the next few years than for a period as long as the next 75 years, any estimation of future experience is uncertain. Therefore, three alternative sets of demographic, economic, and program-specific assumptions are used to show a range of possible outcomes for all projections. The "intermediate" set of assumptions, designated as alternative II, reflects the Trustees' "best estimates" of future experience; the "low cost" alternative I is more optimistic, and the "high cost" alternative III more pessimistic for the trust funds' future financial outlook. For both the short range and the long range, however, it is important to understand that the projections in this report are only an indication of the expected trend and of the likely range of future trust fund experience. Also, all projections are based on the Social Security program provisions in current law and are not intended to anticipate any changes in these provisions that might be made in the future.

For this report, demographic, economic, and program-specific factors were updated based on recent experience. On balance this experience was slightly less favorable than expected in its impact on the immediate status of the trust funds, principally due to the economic slowdown of 2001. The most significant changes in assumptions for the future were for mortality and real wage growth. Based on these and other changes, projected annual balances for the Social Security program (tax income minus cost obligations) are generally

[1] See appendix A for a description of these funds and a history of their operations.

larger in this report for about the next 40 years, but are smaller thereafter. As a result, the projected financial status of the program shown in this report is more favorable by the end of the short range, but about the same for the long range as a whole.

II. OVERVIEW

A. HIGHLIGHTS

The major findings of this report are summarized below.

- **Experience in Calendar Year 2001—**At the end of December 2001, 45.9 million people were receiving benefits. An estimated 153 million people had earnings covered by Social Security in 2001. Total benefits paid in 2001 were $432 billion. With $602 billion in income, assets held in special issue U.S. Treasury securities grew to $1.2 trillion.

- **Short-range results**—Under the intermediate assumptions the OASI and DI Trust Funds, individually and combined, are expected to be adequately financed over the next 10 years, with large and increasing annual surpluses over the period. The combined assets of the OASI and DI Trust Funds are projected to increase from the level of $1,213 billion at the beginning of 2002, or 261 percent of expenditures in 2002, to $3,382 billion at the beginning of 2011, or 447 percent of expenditures in 2011. Combined assets were projected in last year's report to rise to 264 percent of annual expenditures at the beginning of 2002, and 427 percent at the beginning of 2011.

- **Long-range results**—Under the intermediate assumptions the combined OASI and DI Trust Funds are expected to become exhausted in 2041, 3 years later than projected in last year's report. The projected actuarial deficit is 1.87 percent of taxable payroll, 0.01 percent larger than in last year's report. Between about 2010 and 2030, OASDI costs will increase rapidly due to the retirement of the large baby-boom generation, and annual costs will exceed tax income starting in 2017. Thereafter, the upward shift in the average age of the population will continue, but at a slower pace, due to continued increases in life expectancy and relatively low fertility rates. The OASDI annual cost rate is projected to increase from 10.84 percent of taxable payroll for 2002 to 19.84 percent for 2076, or 6.42 percent of taxable payroll more than the projected income rate for that year. Expressed in relation to the projected gross domestic product (GDP), the OASDI costs are estimated to rise from the current level of 4.5 percent of GDP to 7.0 percent for 2076. Separately, the DI fund is projected to be exhausted in 2028 and the OASI fund in 2043.

- **Low cost and high cost assumptions**—Under the low cost assumptions, both the OASI and the DI Trust Funds are projected to be adequately financed throughout the 75-year projection period, although

projected costs exceed tax income by the end of the period. Under the high cost assumptions, the combined OASI and DI Trust Funds are projected to be exhausted in 2029, and the OASDI cost rate rises sharply to 28.51 percent of taxable payroll by 2076. Individually, the DI fund would be exhausted in 2015 and the OASI fund in 2032 under the high cost assumptions.

B. TRUST FUND FINANCIAL OPERATIONS IN 2001

The table below shows the income and expenditures for the OASI, the DI, and the combined OASI and DI Trust Funds in calendar year 2001.

Table II.B1.—Summary of 2001 Trust Fund Financial Operations

Type of income or expenditure	Amount in calendar year 2001 (in billions)		
	OASI	DI	OASDI
Total income	$518.1	$83.9	$602.0
Net contributions	441.5	74.9	516.4
Taxation of benefits	11.9	.8	12.7
Interest	64.7	8.2	72.9
Total expenditures	377.5	61.4	438.9
Benefit payments	372.3	59.6	431.9
Railroad Retirement financial interchange	3.3	1/	3.3
Administrative expenses	2.0	1.7	3.7

[1] Less than $50 million.

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

In 2001, 86 percent of total income to the trust funds consisted of taxes paid by employees, employers and the self-employed on earnings covered by the Social Security program. These taxes were paid on covered earnings up to a specified maximum annual amount, called the contribution and benefit base, which was $80,400 in 2001 and is increased each year automatically as the average wage in the U.S. increases. The tax rates scheduled under current law for 2001 and later are shown in table II.B2.

Table II.B2.—Tax Rates for 2001 and Later

	OASI	DI	OASDI
Tax rate for employees and employers, each (in percent)	5.30	0.90	6.20
Tax rate for self-employed persons (in percent)	10.60	1.80	12.40

Income tax revenue that results from subjecting up to 50 percent of Social Security benefits to Federal personal income taxation is credited to the OASI and DI Trust Funds and provided 2 percent of total income in 2001.[1] The final major source of income to the trust funds is interest earned on their invested assets. By law these assets are invested in interest-bearing securities of the U.S. Government or in other securities guaranteed for both principal and interest by the U.S. Government. In 2001 the combined trust fund assets

[1] The Medicare Hospital Insurance Trust Fund receives the additional revenue from subjecting up to 85 percent of benefits to Federal personal income taxation.

earned interest at an effective annual rate of 6.6 percent. During the same period, the average interest rate on new securities purchased by the trust funds was 5.2 percent. This interest income provided 12 percent of total combined trust fund income.

Over 98 percent of expenditures from the combined OASI and DI Trust Funds in 2001 went to pay retirement, survivor and disability benefits totaling $431.9 billion. The financial interchange with the Railroad Retirement program resulted in a payment of $3.3 billion from the combined OASI and DI Trust Funds in 2001, or about 0.7 percent of total expenditures. The administrative expenses of the Social Security program were $3.7 billion in 2001, or about 0.8 percent of total expenditures in the year.

Assets of the trust funds increased by $163.1 billion in 2001 because income to each fund exceeded expenditures, as shown in table II.B3.

Table II.B3.—Trust Fund Results in 2001
[In billions]

	OASI	DI	OASDI
Assets (end of 2000)	$931.0	$118.5	$1,049.4
Income during 2001	518.1	83.9	602.0
Outgo during 2001	377.5	61.4	438.9
Net increase in assets	140.6	22.5	163.1
Assets (end of 2001)	1,071.5	141.0	1,212.5

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

The assets of each trust fund are intended to provide a reserve that can be used to pay benefits in years when expenditures exceed income due to, for example, a temporary downturn in the economy. Such reserves allow for time to enact legislation to correct unanticipated shortfalls, when needed, without disruption of the timely payment of benefits. At the end of 2001, the combined assets of the OASI and the DI Trust Funds were 261 percent of estimated expenditures for the following year.

C. ASSUMPTIONS ABOUT THE FUTURE

The actual future income and expenditures of the OASI and DI Trust Funds will depend on many factors, including future demographic and economic conditions. These factors include the size and characteristics of the population receiving benefits, the level of monthly benefit amounts, the size and characteristics of the work force, and the level of workers' earnings. These factors will depend in turn upon future birth rates, death rates, immigration, marriage and divorce rates, retirement-age patterns, disability incidence and termination rates, productivity gains, wage increases, inflation, and many other demographic, economic, and program-specific factors.

Assumptions regarding each of these variables must be made in order to project trust fund financing in the future. The assumptions selected vary, in most cases, from year to year during the first decade or more before reaching ultimate assumed values for the remainder of the 75-year projection period. This phasing-in process is particularly important if the projection period begins when a variable that has experienced distinct cycles in the past is at, or near, a cyclic extreme. An ultimate value for each variable is assumed for the long-range projection because any cycles in factors are assumed to average out at that ultimate value over the long range.

Any projection of the future is, of course, uncertain. The degree of uncertainty involved can be illustrated by imagining how difficult it would have been in 1925 to project the world of 1930, much less that of 2000. Three alternative sets of assumptions are used in this report to recognize this uncertainty and provide a range of possible future experience. The intermediate set of assumptions, designated as alternative II, reflects the Trustees' best estimates of future experience; the low cost alternative I is more optimistic and the high cost alternative III more pessimistic for the trust funds' future financial outlook.

While no assurance can be given that actual future experience will fall within the range provided by these sets of assumptions, there are factors that reduce the inherent uncertainty. For example, the number of beneficiaries over age 65 is subject to less uncertainty for the next several decades because all of these individuals are already born. In addition, the wage-indexing of many program provisions has reduced the sensitivity of projections to some economic factors, even in the long term. Thus, projections presented in this report can provide early notice of significant changes in future income and expenditures, as, for example, when the baby-boom generation retires during the period from 2010 to 2030. Also, the assumptions are reexamined each year in light of recent experience and new information that may influence

future trends, and are revised when warranted. This careful review and updating of the assumptions on an annual basis helps ensure that they provide a reasonable range of future possibilities.

Table II.C1 summarizes the ultimate values assumed for the key demographic and economic elements underlying the projections shown in this report. These ultimate values generally apply after the first 10 years. Two exceptions are the ultimate fertility rate and the ultimate mortality annual rate of reduction, which are reached in 2026.

Table II.C1.—Ultimate Values of Key Demographic and Economic Assumptions

Ultimate assumptions	Intermediate	Low Cost	High Cost
Demographic:			
Total fertility rate (children per woman)	1.95	2.2	1.7
Average annual percentage reduction in total age-sex-adjusted death rates from 2026 to 2076[1]	.73	.35	1.29
Annual net immigration (in thousands)	900	1,210	655
Economic:			
Annual percentage change in:			
Average wage in covered employment	4.1	3.6	4.6
Consumer Price Index (CPI)	3.0	2.0	4.0
Real-wage differential (percent)	1.1	1.6	.6
Productivity (total U.S. economy)	1.6	1.9	1.3
Unemployment rate (percent)	5.5	4.5	6.5
Annual trust fund interest rate (percent)	6.0	5.7	6.2

[1] Actual ultimate assumptions for reductions in death rates are specified in detail, by age group, sex, and cause of death. See section V.A.2 for further description.

The ultimate productivity growth assumption was increased by 0.1 percentage point in this year's report (from 1.5 to 1.6 percent for the intermediate assumptions). This increase is based on the growing body of evidence suggesting that the climate for productivity growth has improved in recent years. A number of prominent economists have argued that the higher productivity growth experienced during the last 5 to 7 years (annual average of 2.0 percent from 1995 to 2000) may signal a return to a higher productivity trend compared to the relatively slow growth experienced between 1973 and the early 1990s. This recent period of faster growth is generally ascribed to the development of an information technology driven "new economy". The key question is the degree to which this increased growth rate will be sustained into the long-term future. The Trustees will continue to closely monitor information concerning the future trend growth in productivity.

Modifications in mortality projections resulted in more rapid reductions in death rates (0.70 percent per year in this report versus 0.65 percent per year

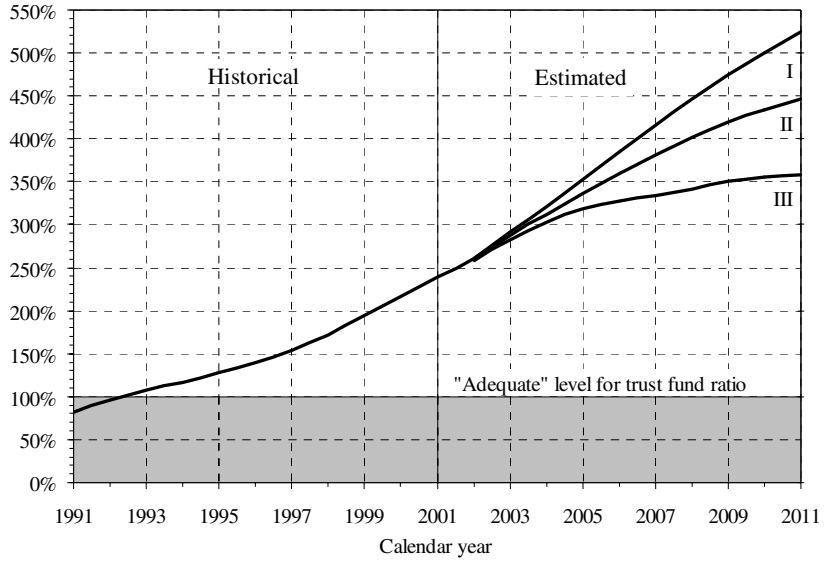
in last year's report for ages 65 and over, under the intermediate assumptions). A number of prominent demographers have argued that future mortality decline may be closer to that of the last century (0.75 percent per year for ages 65 and over) than to the experience of the last two decades (0.50 percent per year). As with other assumptions, the Trustees will continue to examine information related to future mortality improvement.

D. PROJECTIONS OF FUTURE FINANCIAL STATUS

Short-Range Actuarial Estimates

For the short range, the Trustees measure the adequacy of the trust funds by comparing assets at the beginning of each year to projected expenditures for that year under the intermediate set of assumptions. Having a trust fund ratio of 100 percent or more—that is, assets at the beginning of each year at least equal to projected outgo during the year—is considered a good indication of a trust fund's ability to cover most short-term contingencies. Both the OASI and the DI trust fund ratios under the intermediate assumptions exceed 100 percent throughout the short-range period. Therefore, both programs are considered to meet the Trustees' short-term test for financial adequacy. Figure II.D1 below shows the trust fund ratios for the combined OASI and DI Trust Funds under all three sets of assumptions for the next 10 years.

Figure II.D1.—Short-Range OASDI Trust Fund Ratios
[Assets as a percentage of annual expenditures]



During the short-range period, the income, expenditures and assets in dollars of the combined OASI and DI Trust Funds are also of interest and are shown in table II.D1. In addition, the combined trust fund ratios for each year are shown in the table. Additional details on the components of income and outgo, and the results for the individual trust funds are provided in chapter IV.

Table II.D1.—Summarized Operations of the Combined OASI and DI Trust Funds,[1] Calendar Years 2001-11
[Amounts in billions]

	Calendar year										
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Intermediate:											
Income	$602	$624	$664	$706	$752	$800	$852	$904	$958	$1,014	$1,074
Expenditures	439	465	477	499	525	555	587	624	664	708	756
Net increase	163	159	188	207	227	245	264	280	294	305	318
Assets at end of year	1,213	1,372	1,559	1,767	1,994	2,239	2,503	2,783	3,077	3,382	3,700
Trust fund ratio[2]	239	261	288	312	336	359	381	401	419	434	447
Low Cost:											
Income	$602	$630	$673	$718	$762	$804	$850	$899	$950	$1,005	$1,063
Expenditures	439	464	473	491	512	534	559	586	618	652	688
Net increase	163	166	199	227	250	270	291	312	333	353	375
Assets at end of year	1,213	1,379	1,578	1,805	2,055	2,325	2,616	2,928	3,261	3,614	3,988
Trust fund ratio[2]	239	261	291	321	353	385	416	446	474	500	525
High Cost:											
Income	$602	$619	$662	$712	$761	$812	$885	$943	$999	$1,055	$1,116
Expenditures	439	468	482	510	549	598	651	703	756	813	874
Net increase	163	151	180	202	211	214	234	241	243	242	242
Assets at end of year	1,213	1,363	1,544	1,746	1,957	2,171	2,405	2,646	2,889	3,131	3,373
Trust fund ratio[2]	239	259	283	303	318	327	334	342	350	355	358

[1] See section IV for more detailed operations of the trust funds.
[2] Represents assets at beginning of year (which are identical to assets at end of prior year) as a percentage of expenditures during the year. See text beginning on page 37 concerning interpretation of these ratios.

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

Long-Range Actuarial Estimates

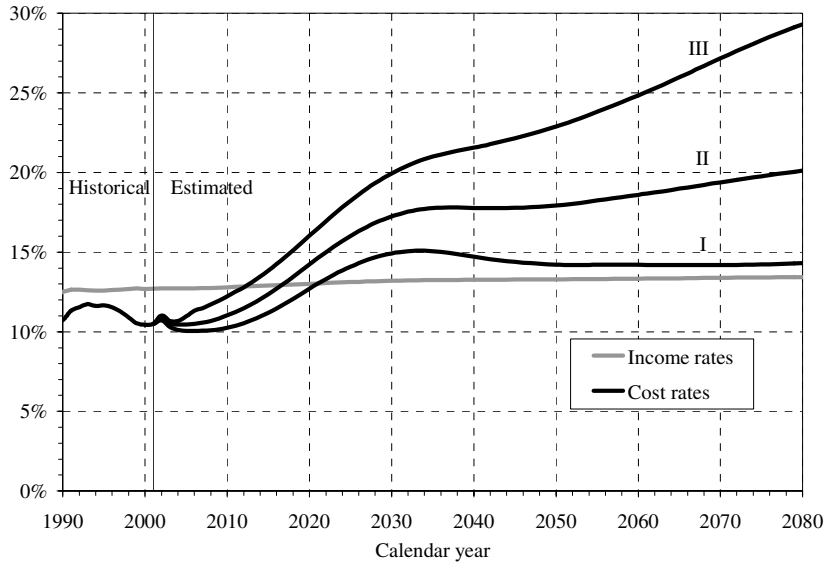
The financial status of the trust funds over the next 75 years is measured in terms of the cost and income rates (i.e., costs and income as a percent of taxable payroll), trust fund ratios, and the actuarial balance (also as a percentage of taxable payroll). Considering Social Security's cost as a percent of the total U.S. economy (i.e., gross domestic product or GDP) provides an additional perspective.

The year-by-year relationship of the income and cost rates shown in figure II.D2 illustrates the expected pattern of cash flow for the OASDI program over the full 75-year period. As the figure shows, the pattern of the OASDI program's estimated cost rate is much different from that of the income rate, which increases only slightly from just under to just over 13 percent during the next 75 years as income from taxation of benefits increases. Only the alternative II income rate is shown graphically because of the small difference among the three alternatives. Under the intermediate assumptions, the OASDI cost rate is estimated to remain fairly stable and well below the income rate for the next several years until about 2010. It then begins to increase rapidly

and first exceeds the income rate for 2017, producing cash-flow deficits thereafter. The cost rate continues rising through about 2030 as the baby-boom generation reaches retirement age. Thereafter, the cost rate is estimated to be fairly stable for about 15 years as the baby-boom generation ages and begins to decrease in size. However, by 2076, the projected continued reductions in death rates and relatively low birth rates will cause a significant upward shift in the average age of the population and will push the cost rate to near 20 percent of taxable payroll under the intermediate assumptions. Costs are projected to exceed non-interest income starting in 2017, and annual deficits occur throughout the remainder of the 75-year projection period, reaching more than 6 percent of taxable payroll for 2076. Figure II.D2 shows that the annual deficits are increasing at the end of the projection period. Although the projections in this report do not extend beyond 2080, the upward shift in the average age of the population is likely to continue and to increase the gap between OASDI costs and income.

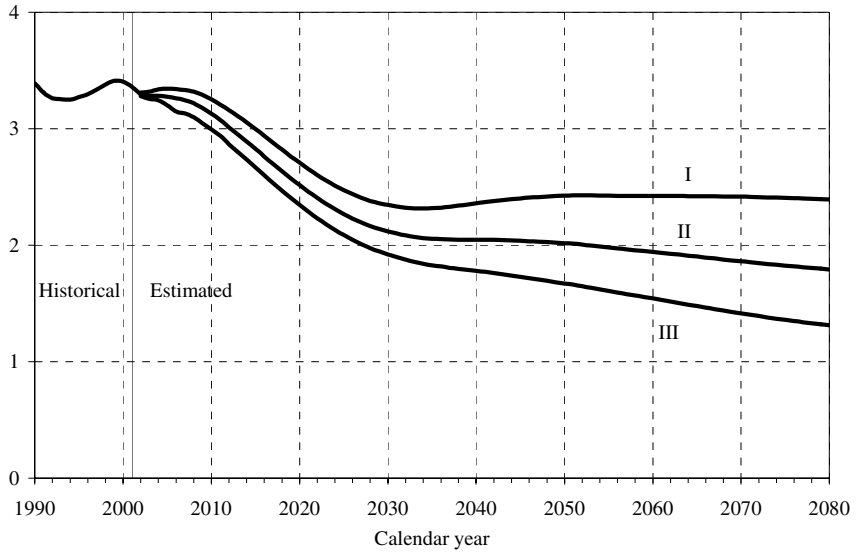
The OASDI cost rates for alternatives I and III differ significantly from those projected for alternative II but follow generally similar patterns. For alternative I, the cost rate declines somewhat for the first 4 years, and then rises, reaching the current level around 2013. The cost rate first exceeds the income rate for 2021, with relatively small cash-flow deficits thereafter. The cost rate rises to a peak of 15.09 percent of payroll for 2033. The cost rate then declines gradually, reaching a level of 14.24 percent of payroll for 2076. For alternative III, the cost rate rises generally throughout the 75-year period. It rises at a relatively fast pace between 2010 and 2030 because of the aging of the baby-boom generation. The cost rate first exceeds the income rate for 2013, with relatively large cash-flow deficits thereafter. After 2030 the projected cost rate continues rising and reaches 28.51 percent of payroll for 2076.

Figure II.D2.—Long-Range OASDI Annual Income Rate and Cost Rates
[As a percentage of taxable payroll]



The primary reason that the OASDI cost rate increases rapidly between 2010 and 2030 is that, as the large baby-boom generation born in the years 1946 through 1964 retires, the number of beneficiaries is projected to increase much more rapidly than the number of workers. The estimated number of workers per beneficiary is shown in figure II.D3. In 2001, there were about 3.4 workers for every OASDI beneficiary. By 2010, there are projected to be 3.1 workers per beneficiary, under the intermediate assumptions. The baby-boom generation is fully retired in about 2030 and the projected ratio of workers to beneficiaries is only 2.1. After 2030, the worker-to-beneficiary ratio is relatively stable until about 2050. Thereafter, the number of workers per beneficiary slowly declines, and the cost rate for OASDI slowly increases, due primarily to projected continued reductions in death rates and relatively low birth rates.

Figure II.D3.—Number of Covered Workers Per OASDI Beneficiary



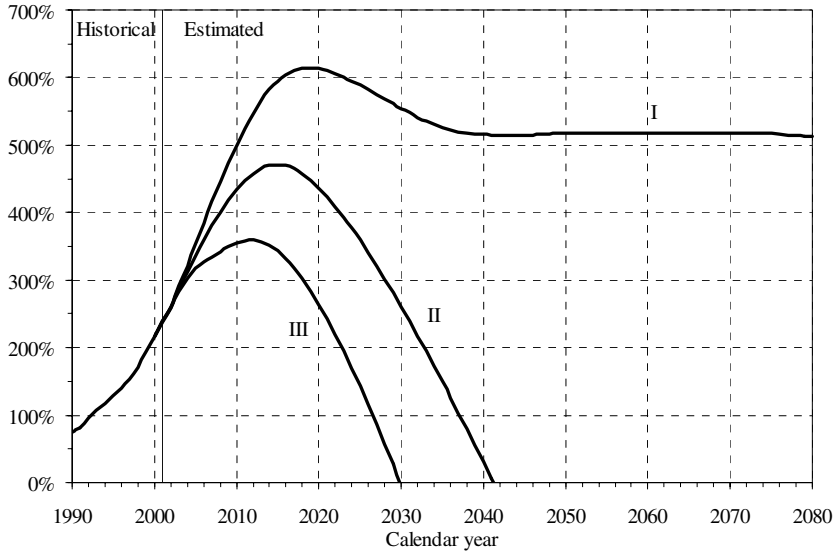
Under the intermediate assumptions, the trust fund ratio for OASDI declines after 2015, due to the demographic changes and resulting rise in costs after 2010. Interest earnings are required to supplement tax income in order to pay benefits beginning in 2017, asset redemptions begin to reduce the size of the combined trust funds in 2027, and the assets of the combined OASI and DI Trust Funds are exhausted in 2041. Table II.D2 shows the maximum projected trust fund ratio of the OASI, DI, and combined funds, and the year it is attained under all three sets of assumptions. It also shows the year each fund's assets are projected to be exhausted.

Table II.D2.—Projected Maximum Trust Fund Ratios Achieved and Trust Fund Exhaustion Dates

	OASI	DI	Combined
Intermediate:			
Maximum trust fund ratio (percent)	522	246	471
Year attained	2015	2007	2015
Year of exhaustion	2043	2028	2041
Low Cost:			
Maximum trust fund ratio (percent)	633	1,459	614
Year attained	2018	2077	2019
Year of exhaustion	—	—	—
High Cost:			
Maximum trust fund ratio (percent)	425	205	359
Year attained	2013	2004	2012
Year of exhaustion	2032	2015	2029

The trust fund ratios for the combined OASI and DI Trust Funds are shown graphically in figure II.D4.

Figure II.D4.—Long-Range OASDI Trust Fund Ratios
[Assets as a percentage of annual expenditures]



Even if a trust fund's assets are exhausted, tax income will continue to flow into the fund. Table II.D3 shows the relationship between tax revenues and estimated expenditures for the combined trust funds at the time of exhaustion and at the end of the 75-year projection period under intermediate assumptions.

Table II.D3.—Relationship Between OASDI Expenditures and Tax Income at the Time of Exhaustion of the Combined Funds and at the End of the 75-Year Projection Period Under Intermediate Assumptions

Year	Tax revenues as a percentage of expenditures	Percentage by which expenditures exceed tax revenues
2041	73%	37%
2076	66	52

The actuarial balance is a measure of the program's financial status for the 75-year valuation period as a whole. It is essentially the difference between income and cost of the program expressed as a percentage of taxable payroll summarized over the valuation period. As a single number, it provides a summary of the adequacy of program financing for the period as a whole.

When the actuarial balance is negative, the actuarial deficit can be interpreted as the percentage that would have to be added to the current law income rate in each of the next 75 years, or subtracted from the cost rate in each year, to bring the funds into actuarial balance. In this report, the actuarial balance under intermediate assumptions is a deficit of 1.87 percent of taxable payroll for the combined OASI and DI Trust Funds. The comparable actuarial deficit number in the 2001 report was 1.86 percent.

Reasons for changes from last year's report to this report in the long-range actuarial balance under the intermediate assumptions are listed in table II.D4 by broad category. Also shown are the estimated effects associated with changes in each category.

Table II.D4.—Reasons for Change in the 75-Year Actuarial Balance Under Intermediate Assumptions
[As a percentage of taxable payroll]

Item	OASI	DI	Combined
Shown in last year's report:			
Income rate	11.68	1.90	13.58
Cost rate	13.21	2.23	15.44
Actuarial balance	-1.53	-.33	-1.86
Changes in actuarial balance due to changes in:			
Legislation / Regulation	.00	.00	.00
Valuation period[1]	-.06	-.01	-.07
Demographic assumptions	-.04	-.01	-.05
Economic assumptions	+.11	+.01	+.12
Disability assumptions	.00	+.03	+.03
Projection methods and data	-.01	-.03	-.04
Total change in actuarial balance	.00	-.01	-.01
Shown in this report:			
Actuarial balance	-1.54	-.34	-1.87
Income rate	11.79	1.92	13.72
Cost rate	13.33	2.26	15.59

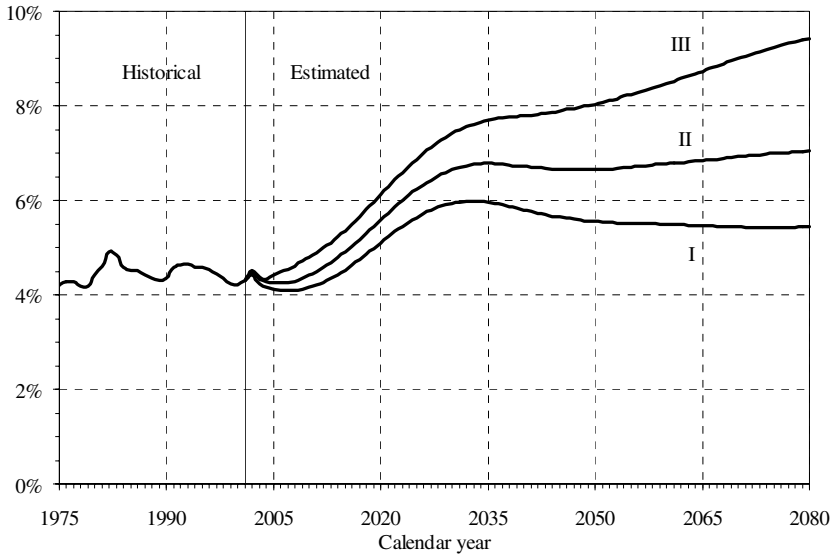
[1] In changing from the valuation period of last year's report, which was 2001-75, to the valuation period of this report, 2002-76, the relatively large negative annual balance for 2076 is included. This results in a larger long-range actuarial deficit. The fund balance at the end of 2001, i.e., at the beginning of the projection period, is included in the 75-year actuarial balance.

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

Two laws were enacted since the 2001 report that have negligible long-range financial effects on the OASDI program. A number of changes in assumptions had significant effects on the actuarial balance. These changes were made based on recent data for birth rates, death rates, immigration, average earnings, and disability experience. In addition, several methodological changes had effects on the actuarial balance. More detail on these changes is presented in sections IV.A.4, IV.B.7 and chapter V of this report.

The cost of Social Security as a percentage of GDP, shown graphically in figure II.D5, follows the same upward pattern as the cost rate discussed earlier for the same reasons, primarily the retirement of the baby-boom generation from 2010 to 2030 and the projected reductions in death rates and relatively low birth rates thereafter. Today, the cost of Social Security is 4.5 percent of GDP, but that cost is projected under the intermediate assumptions to increase to 7.0 percent of GDP by 2076.

Figure II.D5.—OASDI Cost as a Percentage of GDP



E. CONCLUSION

A significant shift upward in the average age of the United States population in the decades ahead due to the aging of the baby-boom generation, expected continuing low fertility, and increasing life expectancy, will increase the cost of Social Security faster than its income under current law. Based on the Trustees' best estimates, expenditures, which are now well below tax revenues, are expected to exceed tax revenues starting in 2017 (1 year later than in last year's report) and throughout the remainder of the 75-year projection period. Assets in the Social Security combined trust funds are projected to be adequate to allow full payment of benefits, until becoming exhausted in 2041, 3 years later than was projected in last year's report. At that time annual tax income to the trust funds is projected to equal about 73 percent of program cost. Separately, the OASI and DI funds are projected to have sufficient funds to pay full benefits on time until 2043 and 2028, respectively. By 2076, however, annual tax income is projected to be only about two-thirds as large as the annual cost of the OASDI program.

Over the full 75-year projection period the actuarial deficit estimated for the combined trust funds is 1.87 percent of taxable payroll. This is about the same as the deficit of 1.86 percent projected in last year's report. This deficit indicates that financial adequacy of the program for the next 75 years could be restored (under the Trustees' best estimates), if the Social Security payroll tax were immediately and permanently increased, from its current level of 12.4 percent (combined employee-employer shares) to 14.27 percent. Alternatively, all current and future benefits could be reduced by about 13 percent (or there could be some combination of tax increases and benefit reductions).

Changes of this magnitude would be sufficient to eliminate the actuarial deficit over the 75-year projection period. However, because of the increasing average age of the population, annual deficits are projected to increase to levels in excess of 6 percent of taxable payroll by the end of the 75-year period. The large annual deficit at the end of the projection period indicates that the annual cost will very likely continue to exceed tax revenues after 2076. As a result, ensuring the sustainability of the system beyond 2076 would require larger changes than those needed to restore actuarial balance for the 75-year period.

The trust fund deficits projected for the longer run should be addressed in a timely way to allow for a gradual phasing in of any necessary changes and to provide advance notice so that workers can adjust their plans to take account of those changes. The sooner adjustments are made, the smaller and less abrupt they will have to be. With informed public discussion and timely legislative action, Social Security will continue to play an important role in the life of virtually every American.

III. FINANCIAL OPERATIONS OF THE TRUST FUNDS AND LEGISLATIVE CHANGES IN THE LAST YEAR

A. OPERATIONS OF THE OLD-AGE AND SURVIVORS INSURANCE (OASI) AND DISABILITY INSURANCE (DI) TRUST FUNDS, IN CALENDAR YEAR 2001

Detailed information on the operations of the OASI and DI Trust Funds[1] during calendar year 2001 is presented in this section. Section IV.A provides projections for calendar years 2002-11.

1. OASI Trust Fund

A statement of the income and disbursements of the Federal Old-Age and Survivors Insurance Trust Fund in calendar year 2001, and of the assets of the fund at the beginning and end of the calendar year, is presented in table III.A1. Included in total receipts during calendar year 2001 were $444.1 billion in employment tax contributions. These contributions were partially offset by transfers totaling $2.7 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 on total earnings in excess of the contribution and benefit base.

In addition, $7 million was received from the General Fund of the Treasury representing partial payment for the taxes that were payable on estimated deemed wage credits for military service in 2001. The remainder of the amount that should have been received totals $264 million. This amount, together with the remainder of the amount that should have been received for deemed wage credits based on military service in 2000 ($219 million) totals $482 million. Estimates presented later in this report do not include receipt of this total amount because no date has been set for the transfer. Although recent legislation eliminated deemed wage credits for military service after 2001, current law still requires payments for military service through 2001 and periodic adjustments for 1984-2001 to the extent that estimated amounts differ from actual wage credits.

Net contributions thus amounted to $441.5 billion, an increase of 4.8 percent over the amount in the preceding year. The increase in OASI tax contributions from calendar year 2000 to calendar year 2001 is due to increased earnings and the increases in the contribution and benefit base that became

[1] Trust fund data are available by month, quarter, or year on the Internet at http://www.ssa.gov/OACT/ProgData/fundsQuery.html.

effective on January 1 of each year 2000 and 2001. (Table VI.A1 shows the tax rates and contribution and benefit bases in effect for past years.)

Income based on taxation of benefits amounted to $11.9 billion in 2001. Nearly 99 percent represented amounts credited to the trust funds, on an estimated basis, generally in advance of the actual receipt of taxes by the Treasury. The remaining 1 percent of the total income from taxation of benefits represented amounts withheld from the benefits paid to nonresident aliens.

Table III.A1.—Operations of the OASI Trust Fund, Calendar Year 2001
[In millions]

Total assets, December 31, 2000		$930,986
Receipts:		
Contributions:		
Employment taxes	$444,112	
Payments from the General Fund of the Treasury for:		
Contributions subject to refund	-2,660	
Employee-employer contributions on deemed wage credits for military service	7	
Net contributions		441,460
Income based on taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	138	
All other, not subject to withholding	11,765	
Total income from taxation of benefits		11,903
Investment income and interest adjustments:		
Interest on investments	64,733	
Interest adjustments[1]	4	
Total investment income and interest adjustments		64,737
Gifts		2/
Total receipts		518,100
Disbursements:		
Benefit payments:		
Gross benefit payments	373,108	
Offset for collected overpayments	-738	
Reimbursement from the general fund for unnegotiated checks	-58	
Net benefit payments		372,312
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		3,273
Administrative expenses:		
Costs incurred by:		
Social Security Administration	1,740	
Department of the Treasury	229	
Offsetting receipts from sales of supplies, materials, etc.	-3	
Miscellaneous reimbursements from the general fund[3]	-5	
Net administrative expenses		1,961
Total disbursements		377,546
Net increase in assets		140,554
Total assets, December 31, 2001		1,071,540

[1] Includes (1) 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, (2) interest arising from the revised allocation of administrative expenses among the trust funds and (3) interest on reimbursements to the trust fund for costs associated with union activities and pension reform.
[2] Less than $500,000.
[3] Reimbursements for costs incurred in performing certain legislatively mandated activities not directly related to administering the OASI program.

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

The OASI Trust Fund was credited with interest netting $64.7 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, and (4) interest on reimbursements to the trust fund for costs associated with union activities and pension reform. The remaining $1,400 of receipts consisted of gifts received under the provisions authorizing the deposit of money gifts or bequests in the trust funds.

Of the $377.5 billion in total disbursements, $372.3 billion was for net benefit payments. The amount of net benefit payments in calendar year 2001 represents an increase of 5.6 percent over the corresponding amount in calendar year 2000. This increase is due primarily to (1) the automatic cost-of-living benefit increase of 3.5 percent which became effective for December 2000 under the automatic-adjustment provisions in section 215(i) of the Social Security Act, (2) an increase in the total number of beneficiaries, (3) an increase in the average benefit amount, and (4) an adjustment to the December 1999 benefit increase, effectively changing that increase from 2.4 percent to 2.5 percent, reflected in August 2001 benefit payments.

Provisions of the Railroad Retirement Act require an annual financial interchange between the Railroad Retirement and OASDI programs. The purpose of such provisions is to put the OASI and DI Trust Funds in the same financial position they would have been had railroad employment always been covered by Social Security. Under those provisions, the Railroad Retirement Board and the Commissioner of Social Security determined that a transfer of $3.3 billion to the Social Security Equivalent Benefit Account from the OASI Trust Fund was required in June 2001.

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 allocated for administering the Supplemental Security Income program are 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. As described earlier, the interest adjustments arising from the reallo-

cation of administrative expenses are recorded in the trust fund accounting under investment income.

The vast majority of OASI disbursements recorded as administrative expenses represent the cost of administering the program and are charged to the trust fund by the Social Security Administration ($1.7 billion in 2001). In addition, the Department of the Treasury charges directly to the trust fund certain expenses that it incurs in helping to administer the OASI program ($229 million in 2001). Finally, there are some relatively small adjustments which reduced total administrative expenses by $8 million in 2001. The first of these adjustments is an offset ($3 million in 2001) representing income from the sale of excess supplies and equipment. The second adjustment represents net reimbursements from the General Fund of the Treasury for administrative costs incurred by the Social Security Administration in performing certain legislatively mandated activities that are not directly related to the OASI program. Such reimbursements totaled $5 million in 2001.

The assets of the OASI Trust Fund at the end of calendar year 2001 totaled $1,071.5 billion, consisting of $1,071.8 billion in U.S. Government obligations and, as an offset, an extension of credit amounting to $0.3 billion against securities to be redeemed within the following few days. The effective annual rate of interest earned by the assets of the OASI Trust Fund during calendar year 2001 was 6.7 percent, as compared to 6.9 percent earned during calendar year 2000. Table III.A2 shows the total assets of the fund and their distribution at the end of each calendar year 2000 and 2001.

Table III.A2.—Assets of the OASI Trust Fund, End of Calendar Years 2000 and 2001
(In thousands)

	December 31, 2000	December 31, 2001
Obligations sold only to the trust funds (special issues):		
Certificates of indebtedness:		
5 percent, 2002	—	$54,987,439
5.125 percent, 2002	—	8,866,909
5.625 percent, 2001	$54,046,271	—
5.625 percent, 2002	—	677,850
6 percent, 2001	8,531,241	—
6.125 percent, 2001	1,837,302	—
6.25 percent, 2001	8,071,035	—
Bonds:		
5.625 percent, 2003	—	9,621,438
5.625 percent, 2004	—	9,621,437
5.625 percent, 2005-11	—	67,350,066
5.625 percent, 2012-15	—	38,485,748
5.625 percent, 2016	—	68,151,331
5.875 percent, 2002	6,169,273	783,303
5.875 percent, 2003-12	61,692,730	61,692,730
5.875 percent, 2013	43,258,869	43,258,869
6 percent, 2002-11	66,936,270	66,936,270
6 percent, 2012-13	13,387,256	13,387,256
6 percent, 2014	49,952,497	49,952,497
6.25 percent, 2002-06	15,754,875	15,754,875
6.25 percent, 2007	3,150,974	3,150,974
6.25 percent, 2008	23,350,034	23,350,034
6.5 percent, 2001	7,493,737	—
6.5 percent, 2002-03	22,017,298	22,017,298
6.5 percent, 2004-09	66,051,900	66,051,900
6.5 percent, 2010	38,320,240	38,320,240
6.5 percent, 2011-14	34,309,584	34,309,584
6.5 percent, 2015	58,529,893	58,529,893
6.875 percent, 2001	3,975,270	—
6.875 percent, 2002-03	7,950,540	7,950,540
6.875 percent, 2004-09	23,851,626	23,851,626
6.875 percent, 2010-11	7,950,544	7,950,544
6.875 percent, 2012	37,089,596	37,089,596
7 percent, 2001	3,371,481	—
7 percent, 2002-03	6,742,962	6,742,962
7 percent, 2004-10	23,600,360	23,600,360
7 percent, 2011	33,114,324	33,114,324
7.25 percent, 2001	3,961,556	—
7.25 percent, 2002-06	19,807,780	19,807,780
7.25 percent, 2007-08	7,923,114	7,923,114
7.25 percent, 2009	27,311,591	27,311,591
7.375 percent, 2001	3,575,474	—
7.375 percent, 2002-06	17,877,370	17,877,370
7.375 percent, 2007	20,199,060	20,199,060
8.125 percent, 2001	3,611,348	—
8.125 percent, 2002-05	14,445,392	14,445,392
8.125 percent, 2006	16,623,586	16,623,586
8.375 percent, 2001	2,370,396	—
8.625 percent, 2001	1,301,731	—
8.625 percent, 2002	3,672,127	3,672,127
8.75 percent, 2001	7,099,803	—
8.75 percent, 2002-03	14,199,606	14,199,606
8.75 percent, 2004-05	26,024,476	26,024,476
9.25 percent, 2001	2,240,308	—
9.25 percent, 2002	2,240,308	2,240,308
9.25 percent, 2003	5,912,435	5,912,435
Total investments	930,905,443	1,071,794,738
Undisbursed balances[1]	80,780	-254,822
Total assets	930,986,223	1,071,539,916

[1] 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, 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 on a daily basis for 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.

Section 201(d) of the Social Security Act provides that the 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, 2001, were selected so that the maturity dates of the total portfolio of special issues were spread evenly over the 15-year period 2002-16. The amount of bonds purchased on June 30, 2001 is shown in table III.A9.

2. DI Trust Fund

A statement of the income and disbursements of the Federal Disability Insurance Trust Fund in calendar year 2001, and of the assets of the fund at the beginning and end of the calendar year, is presented in table III.A3.

Line entries in the DI statement are similar to those in the OASI statement and the explanations of the OASI entries generally apply to DI as well. One additional source of disbursements in the DI statement is $58 million 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 vocational rehabilitation services is made only in those cases where the services contributed to the successful rehabilitation of the beneficiaries.

Net contributions amounted to $74.9 billion, an increase of 5.4 percent from the amount in the preceding calendar 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.

Of the $61.4 billion in total disbursements, $59.6 billion was for net benefit payments. This represents an increase of 8.4 percent over the corresponding amount of benefit payments in calendar year 2000. This increase in DI benefit payments was due to the same factors that resulted in the net increase in benefit payments from the OASI Trust Fund. However, the number of persons receiving benefits from the DI Trust Fund increased more rapidly in 2001 than the number receiving benefits from the OASI Trust Fund.

Table III.A3.—Operations of the DI Trust Fund, Calendar Year 2001
[In millions]

Total assets, December 31, 2000		$118,459
Receipts:		
Contributions:		
Employment taxes	$75,378	
Payments from the General Fund of the Treasury for:		
Contributions subject to refund	-447	
Employee-employer contributions on deemed wage credits for military service	2	
Net contributions		74,933
Income based on taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	5	
All other, not subject to withholding	806	
Total income from taxation of benefits		811
Investment income and interest adjustments:		
Interest on investments	8,158	
Interest adjustments[1]	1	
Total investment income and interest adjustments		8,158
Total receipts		83,903
Disbursements:		
Benefit payments:		
Gross benefit payments	59,952	
Offset for collected overpayments	-372	
Reimbursement from the general fund for unnegotiated checks	-18	
Net benefit payments		59,561
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		10
Payment for costs of vocational rehabilitation services for disabled beneficiaries		58
Administrative expenses:		
Costs incurred by:		
Social Security Administration	1,702	
Department of the Treasury	42	
Miscellaneous reimbursements from the general fund[2]	-2	
Net administrative expenses		1,741
Total disbursements		61,369
Net increase in assets		22,534
Total assets, December 31, 2001		140,993

[1] Includes (1) 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, (2) interest arising from the revised allocation of administrative expenses among the trust funds, (3) interest earned on the investments of the trust fund, and (4) interest on reimbursements to the trust fund for costs associated with union activities and pension reform.

[2] Reimbursements for costs incurred in performing certain legislatively mandated activities not directly related to administering the DI program.

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

The assets of the DI Trust Fund at the end of calendar year 2001 totaled $141.0 billion, consisting of $140.9 billion in U.S. Government obligations and cash totaling $46 million. The effective annual rate of interest earned by the assets of the DI Trust Fund during calendar year 2001 was 6.5 percent, compared to 6.6 percent earned during calendar year 2000. Table III.A4 shows the total assets of the fund and their distribution at the end of each calendar year 2000 and 2001.

Table III.A4.—Assets of the DI Trust Fund, End of Calendar Years 2000 and 2001
(In thousands)

	December 31, 2000	December 31, 2001
Investments in public-debt obligations:		
Obligations sold only to the trust funds (special issues):		
Certificates of indebtedness:		
5 percent, 2002	—	$7,948,770
5.125 percent, 2002	—	1,011,890
5.25 percent, 2002	—	275,928
5.625 percent, 2001	$6,503,860	—
5.625 percent, 2002	—	497,885
6 percent, 2001	2,095,895	—
6.125 percent, 2001	847,414	—
6.25 percent, 2001	735,407	—
Bonds:		
5.625 percent, 2003-06	—	6,099,868
5.625 percent, 2007-13	—	10,674,776
5.625 percent, 2014-15	—	3,049,934
5.625 percent, 2016	—	8,899,848
5.875 percent, 2002	916,286	116,192
5.875 percent, 2003-12	9,162,860	9,162,860
5.875 percent, 2013	5,361,805	5,361,805
6 percent, 2002	1,612,426	1,612,426
6 percent, 2003	1,437,946	1,437,946
6 percent, 2004-06	2,087,895	2,087,895
6 percent, 2007-12	4,175,796	4,175,796
6 percent, 2013	695,967	695,967
6 percent, 2014	6,057,772	6,057,772
6.5 percent, 2001	3,464,768	—
6.5 percent, 2002-06	17,323,840	17,323,840
6.5 percent, 2007	3,464,767	3,464,767
6.5 percent, 2008	4,381,228	4,381,228
6.5 percent, 2009-13	6,585,540	6,585,540
6.5 percent, 2014	1,317,109	1,317,109
6.5 percent, 2015	7,374,881	7,374,881
6.875 percent, 2001	265,249	—
6.875 percent, 2002	265,249	265,249
6.875 percent, 2003	265,252	265,252
6.875 percent, 2004-07	1,061,000	1,061,000
6.875 percent, 2008-09	530,498	530,498
6.875 percent, 2010-12	13,336,560	13,336,560
7 percent, 2001	1,116,151	—
7 percent, 2002-08	7,813,057	7,813,057
7 percent, 2009	4,180,271	4,180,271
7.375 percent, 2004-06	142,803	142,803
7.375 percent, 2007	916,460	916,460
8.125 percent, 2004-05	300,322	300,322
8.125 percent, 2006	868,859	868,859
8.75 percent, 2003	174,477	174,477
8.75 percent, 2004-05	1,437,396	1,437,396
Total obligations sold only to the trust funds (special issues)	118,277,066	140,907,127
Public issues:		
Treasury bonds:		
7.625 percent, 2007	10,000	10,000
11.75 percent, 2010	30,250	30,250
Total investments in public issues at par value, as shown above	40,250	40,250
Unamortized premium or discount, net	-156	-146
Total investments in public issues at book value	40,094	40,104
Total investments in public-debt obligations (book value [1])	118,317,160	140,947,231
Undisbursed balances	142,013	45,925
Total assets (book value [1])	118,459,173	140,993,156

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

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. OASI and DI 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 III.A5. The entries in this table represent the sums of the corresponding values from tables III.A1 and III.A3. For a discussion of the nature of these income and expenditure transactions, reference should be made to the two preceding subsections covering OASI and DI separately.

Table III.A5.—Operations of the Combined OASI and DI Trust Funds, Calendar Year 2001
[In millions]

Total assets, December 31, 2000		$1,049,445
Receipts:		
Contributions:		
Employment taxes	$519,490	
Payments from the General Fund of the Treasury for:		
Contributions subject to refund	-3,106	
Employee-employer contributions on deemed wage credits for military service	9	
Net contributions		516,393
Income based on taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	144	
All other, not subject to withholding	12,571	
Total income from taxation of benefits		12,715
Investment income and interest adjustments:		
Interest on investments	72,891	
Interest adjustments[1]	5	
Total investment income and interest adjustments		72,895
Gifts		2/
Total receipts		602,003
Disbursements:		
Benefit payments:		
Gross benefit payments	433,059	
Offset for collected overpayments	-1,110	
Reimbursement from the general fund for unnegotiated checks	-76	
Net benefit payments		431,873
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		3,283
Payment for costs of vocational rehabilitation services for disabled beneficiaries		58
Administrative expenses:		
Costs incurred by:		
Social Security Administration	3,442	
Department of the Treasury	271	
Offsetting receipts from sales of supplies, materials, etc.	-3	
Miscellaneous reimbursements from the general fund[3]	-8	
Net administrative expenses		3,702
Total disbursements		438,916
Net increase in assets		163,088
Total assets, December 31, 2001		1,212,533

[1] Includes (1) 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, (2) interest arising from the revised allocation of administrative expenses among the trust funds, (3) interest earned on the investments of the trust fund, and (4) interest on reimbursements to the trust fund for costs associated with union activities and pension reform.
[2] Less than $500,000.
[3] Reimbursements for costs incurred in performing certain legislatively mandated activities not directly related to administering the OASI and DI programs.

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

To provide a context for estimates of future trust fund income and expenditures provided later in this report, table III.A6 compares past estimates of contributions and benefit payments for calendar year 2001, as shown in the 1997-2001 Annual Reports, with the corresponding actual amounts in 2001.

A number of factors can contribute to differences between estimates and subsequent actual amounts, including actual values for key demographic, economic, and other variables that differ from assumed levels. Another factor contributing to such differences is new legislation. In particular, legislation eliminating the retirement earnings test for workers over the normal retirement age was enacted shortly after publication of the 2000 report. Consequently, actual OASI benefit payments in 2001 were larger than estimated for the 1998-2000 reports.

Table III.A6.—Comparison of Actual Calendar Year 2001 Trust Fund Operations With Estimates Made in Prior Reports[1]

[Amounts in billions]

	Net contributions[2]		Benefit payments[3]	
	Amount	Difference from actual (percent)	Amount	Difference from actual (percent)
OASI Trust Fund:				
Estimate in 1997 report	$408.4	-7.5	$382.9	2.8
Estimate in 1998 report	408.5	-7.5	366.4	-1.6
Estimate in 1999 report	417.9	-5.3	360.9	-3.1
Estimate in 2000 report	441.9	.1	365.5	-1.8
Estimate in 2001 report	443.0	.3	372.6	.1
Actual amount	441.5	—	372.3	—
DI Trust Fund:				
Estimate in 1997 report	69.4	-7.4	63.4	6.4
Estimate in 1998 report	69.4	-7.4	59.2	-.6
Estimate in 1999 report	71.0	-5.3	59.2	-.7
Estimate in 2000 report	75.1	.2	59.4	-.4
Estimate in 2001 report	75.2	.4	59.1	-.8
Actual amount	74.9	—	59.6	—
OASI and DI Trust Funds, combined:				
Estimate in 1997 report	477.7	-7.5	446.3	3.3
Estimate in 1998 report	477.9	-7.4	425.6	-1.5
Estimate in 1999 report	488.9	-5.3	420.0	-2.8
Estimate in 2000 report	517.0	.1	424.9	-1.6
Estimate in 2001 report	518.2	.4	431.8	4/
Actual amount	516.4	—	431.9	—

[1] The estimates shown are based on the intermediate assumptions.

[2] "Actual" contributions for 2001 reflect adjustments for prior calendar years (see appendix A on page 127 for description of these adjustments). "Estimated" contributions also include such adjustments, but on an estimated basis.

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

[4] Between 0.00 and -0.05 percent.

At the end of calendar year 2001, about 45.9 million persons were receiving monthly benefits under the OASDI program. Of these persons, about 39.0 million and 6.9 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 0.6 percent and 3.6 percent, respectively, during the calendar year. The estimated distribution of benefit payments in calendar years 2000 and 2001, by type of beneficiary, is shown in table III.A7 for each trust fund separately.

Table III.A7.—Distribution of Benefit Payments by Type of Beneficiary or Payment, Calendar Years 2000 and 2001
[Amounts in millions]

	Calendar year 2000		Calendar year 2001	
	Amount	Percentage of total	Amount	Percentage of total
Total OASDI benefit payments	$407,572	100.0	$431,873	100.0
OASI benefit payments	352,652	86.5	372,312	86.2
DI benefit payments	54,921	13.5	59,561	13.8
OASI benefit payments, total	352,652	100.0	372,312	100.0
Monthly benefits:				
Retired workers and auxiliaries	274,602	77.9	290,754	78.1
Retired workers	253,503	71.9	268,934	72.2
Wives and husbands	18,966	5.4	19,488	5.2
Children	2,133	.6	2,331	.6
Survivors of deceased workers	77,836	22.1	81,347	21.8
Aged widows and widowers	62,556	17.7	65,356	17.6
Disabled widows and widowers	1,318	.4	1,392	.4
Parents	26	1/	26	1/
Children	12,530	3.6	13,132	3.5
Widowed mothers and fathers caring for child beneficiaries	1,406	.4	1,441	.4
Uninsured persons generally aged 72 before 1968	2/	1/	2/	1/
Lump-sum death payments	214	.1	212	.1
DI benefit payments, total	54,921	100.0	59,561	100.0
Disabled workers	49,831	90.7	54,230	91.0
Wives and husbands	421	.8	416	.7
Children	4,668	8.5	4,916	8.3

[1] Less than 0.5 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 calendar year 2001 totaled $3.7 billion. This amount represented 0.7 percent of contribution income and 0.8 percent of expenditures. Corresponding percentages for each trust fund separately and for the OASDI program as a whole are shown in table III.A8 for each of the last 5 years.

Table III.A8.—Administrative Expenses as a Percentage of Contribution Income and of Total Expenditures, Calendar Years 1997-2001

	OASI Trust Fund		DI Trust Fund		OASI and DI Trust Funds, combined	
Calendar year	Contribution income	Total expenditures	Contribution income	Total expenditures	Contribution income	Total expenditures
1997	0.6	0.7	2.3	2.7	0.8	0.9
1998	.5	.6	2.7	3.1	.8	.9
1999	.5	.5	2.4	2.9	.7	.8
2000	.5	.6	2.3	2.9	.8	.9
2001	.4	.5	2.3	2.8	.7	.8

Tables III.A2 and III.A4, presented earlier, showed the assets of the OASI and DI Trust Funds at the end of calendar years 2000 and 2001. The changes in the invested assets of the funds between those two dates are a result of the acquisition and disposition of securities during calendar year 2001. Table III.A9 presents these investment transactions for each trust fund separately and combined.

Table III.A9.—Trust Fund Investment Transactions, Calendar Year 2001
[In thousands]

	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Invested assets, December 31, 2000	$930,905	$118,317	$1,049,223
Acquisitions:			
Special issues:			
Certificates of indebtedness	492,089	80,963	573,052
Bonds[1]	202,851	30,249	233,101
Public issues:			
Treasury bonds	—	—	—
Total acquisitions	694,941	111,213	806,153
Dispositions:			
Special issues:			
Certificates of indebtedness	500,043	81,411	581,454
Bonds	54,009	7,171	61,180
Public issues:			
Treasury bonds	—	—	—
Total dispositions	554,051	88,582	642,634
Net increase in invested assets	140,889	22,630	163,519
Invested assets, December 31, 2001	1,071,795	140,947	1,212,742

[1] Amounts shown were purchased on June 30, 2001. The interest rate on such purchases was 5.625 percent.

Note: All investments are shown at par value.

B. SOCIAL SECURITY AMENDMENTS SINCE THE 2001 REPORT

Since the 2001 Annual Report was transmitted to Congress on March 19, 2001, one law has been enacted that has a direct financial effect on the OASDI program.

The Department of Defense Appropriations Act, FY 2002, Public Law 107-117, enacted on January 10, 2002, contains a provision to eliminate deemed wage credits for members of the uniformed armed services (primarily military) for all years after calendar year 2001. Social Security benefit computations will continue to include deemed wage credits earned prior to 2002.

The actuarial estimates shown in this report reflect the expected effects of this amendment. The amendment has a significant effect on the short-range operations of the OASI and DI Trust Funds (see section IV.A.4). However, the long-range financial effect of this new law on the OASDI program is negligible (see section IV.B.7).

In addition, the Economic Growth and Tax Relief Reconciliation Act of 2001, Public Law 107-16, enacted on June 7, 2001, has an indirect effect on projected revenue to the trust funds based on the taxation of benefit payments for years through 2010. While this law has a significant effect on the short-range financial operations of the OASI and DI Trust Funds, it has a negligible effect on the long-range financial status of the program. The effects of this law are reflected in the projections of future revenue presented in this report.

IV. ACTUARIAL ESTIMATES

This chapter presents actuarial estimates of the future financial condition of the Social Security program. These estimates include projected income and expenditures of the OASI and DI Trust Funds, in dollars over the next 10 years and as a percentage of taxable payroll over the full 75-year period, along with a discussion of a variety of measures of the adequacy of current program financing. As described in the Overview section of this report, these estimates depend upon a broad set of demographic and economic assumptions. Since these assumptions are subject to uncertainty, the estimates presented in this section are prepared under three sets of assumptions, to show a range of possible outcomes. The intermediate set of assumptions, designated as alternative II, reflects the Trustees' best estimates of future experience; the low cost alternative I is more optimistic and the high cost alternative III more pessimistic for the trust funds' future financial outlook. The intermediate estimates are shown first in the tables in this report, followed by the low cost and high cost estimates. These sets of assumptions, along with actuarial methods used to produce the estimates, are described in chapter V. In this chapter, the estimates and measures of trust fund financial adequacy for the short range (2002-11) are presented first, followed by estimates and measures of actuarial status for the long range (2002-76).

A. SHORT-RANGE ESTIMATES

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 projected outgo during the year. Thus, 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 income exceeds disbursements, the trust funds serve to help fund a portion of the Social Security program's future financial obligations in advance. 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 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 is applicable to the OASI and DI Trust Funds individually and on a combined basis. The requirements of this test are as follows: If the estimated trust fund ratio 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 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 legislative action is needed to improve the short-range financial adequacy of the program.

1. Operations of the OASI Trust Fund

This subsection presents estimates of the operations and financial status of the OASI Trust Fund for the period 2002-11, based on the assumptions described in chapter V. No changes are assumed to occur in the present statutory provisions and regulations under which the OASDI program operates.[1]

These estimates are shown in table IV.A1 and indicate that the assets of the OASI Trust Fund would continue to increase rapidly throughout the next 10 years under all three sets of assumptions. Also, based on the intermediate 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 2011. Consequently, the OASI Trust Fund satisfies the test of short-range financial adequacy by a wide margin. The estimates in table IV.A1 also indicate that the short-range test would be satisfied even under the high cost assumptions (see figure IV.A1 for graphical illustration of these results).

The increases in estimated income shown in table IV.A1 under each set of assumptions reflect increases in estimated OASDI 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 2011 (with the exception that employment is estimated to decline in 2002 as a result of the recession late in 2001, and in 2006 for the high cost assumptions due to a recession in 2005; these recessions are described in section V.B on page 85). The number of persons with taxable earnings would increase on the basis of alternatives I, II, and III from 153 million during cal-

[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.

endar year 2001 to about 170 million, 167 million, and 164 million, respectively, in 2011. The total annual amount of taxable earnings is projected to increase from $4,198 billion in 2001 to $6,658 billion, $6,752 billion, and $7,017 billion, in 2011, on the basis of alternatives I, II, and III, respectively. (In constant 2001 dollars—taking account of assumed increases in the CPI from 2001 to 2011 under each alternative—the estimated amounts of taxable earnings in 2011 are $5,506 billion, $5,150 billion, and $4,660 billion, respectively.) These increases in taxable earnings are due primarily to (1) projected increases in employment levels as the working age (20-64) population increases and in average earnings in covered employment, (2) increases in the contribution and benefit base in 2002-11 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 2011, interest income to the OASI Trust Fund is projected to be about 21 percent of total trust fund income on the basis of the intermediate assumptions, as compared to 12.5 percent in 2001.

Figure IV.A1.—Short-Range OASI and DI Trust Fund Ratios
[Assets as a percentage of annual expenditures]

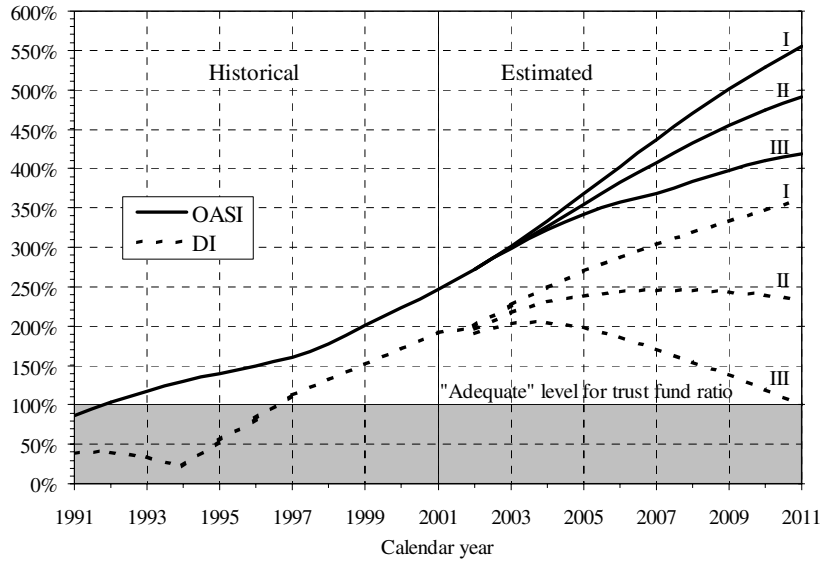


Table IV.A1.—Operations of the OASI Trust Fund, Calendar Years 1997-2011[1]

[Amounts in billions]

	Income				Expenditures				Assets		
Calendar year	Total[2]	Net contributions	Taxation of benefits	Net interest	Total	Benefit payments	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust fund ratio[3]
Historical data:											
1997 . .	$397.2	$349.9	$7.4	$39.8	$322.1	$316.3	$2.1	$3.7	$75.1	$589.1	160
1998 . .	424.8	371.2	9.1	44.5	332.3	326.8	1.9	3.7	92.5	681.6	177
1999 . .	457.0	396.4	10.9	49.8	339.9	334.4	1.8	3.7	117.2	798.8	201
2000 . .	490.5	421.4	11.6	57.5	358.3	352.7	2.1	3.5	132.2	931.0	223
2001 . .	518.1	441.5	11.9	64.7	377.5	372.3	2.0	3.3	140.6	1,071.5	247
Intermediate:											
2002 . .	537.4	453.7	12.8	70.6	393.7	387.7	2.3	3.7	143.7	1,215.3	272
2003 . .	571.8	479.5	13.5	78.8	404.9	398.9	2.4	3.6	166.8	1,382.1	300
2004 . .	608.2	504.1	14.3	89.8	422.4	416.5	2.4	3.5	185.8	1,567.9	327
2005 . .	648.3	531.2	15.2	102.0	442.4	436.5	2.4	3.5	205.9	1,773.8	354
2006 . .	689.7	558.3	15.9	115.5	464.9	459.2	2.4	3.4	224.8	1,998.7	382
2007 . .	735.1	587.9	17.2	130.0	490.0	484.0	2.4	3.6	245.1	2,243.8	408
2008 . .	781.2	617.4	18.6	145.2	518.2	512.2	2.4	3.6	263.0	2,506.8	433
2009 . .	828.7	647.5	20.3	160.9	550.8	544.7	2.4	3.7	277.9	2,784.7	455
2010 . .	878.3	678.6	22.3	177.3	586.9	580.7	2.5	3.8	291.4	3,076.1	475
2011 . .	932.2	711.1	26.3	194.8	626.0	619.8	2.5	3.7	306.2	3,382.3	491
Low Cost:											
2002 . .	542.3	458.0	12.8	71.1	393.5	387.6	2.3	3.7	148.7	1,220.3	272
2003 . .	579.1	485.6	13.5	80.1	403.6	397.6	2.4	3.6	175.5	1,395.8	302
2004 . .	617.8	512.5	14.2	91.2	418.1	412.3	2.4	3.5	199.7	1,595.5	334
2005 . .	655.8	538.2	14.9	102.7	434.1	428.3	2.3	3.4	221.7	1,817.2	368
2006 . .	692.2	561.9	15.5	114.8	451.5	445.9	2.3	3.3	240.7	2,057.9	402
2007 . .	732.3	587.8	16.5	128.0	471.1	465.3	2.3	3.4	261.2	2,319.1	437
2008 . .	774.8	614.6	17.7	142.5	493.4	487.6	2.3	3.4	281.4	2,600.5	470
2009 . .	820.0	642.8	19.2	158.0	519.4	513.6	2.3	3.4	300.6	2,901.1	501
2010 . .	867.2	671.7	20.9	174.6	548.3	542.4	2.4	3.5	319.0	3,220.0	529
2011 . .	918.1	701.4	24.3	192.4	579.5	573.8	2.4	3.3	338.6	3,558.7	556
High Cost:											
2002 . .	532.5	448.7	12.8	70.6	393.9	388.0	2.3	3.7	138.6	1,210.1	272
2003 . .	570.0	476.3	13.5	80.2	406.2	400.2	2.4	3.6	163.8	1,373.9	298
2004 . .	613.9	504.8	14.5	94.7	427.0	421.1	2.4	3.5	186.9	1,560.8	322
2005 . .	656.7	529.6	15.6	111.4	456.3	450.3	2.4	3.5	200.5	1,761.2	342
2006 . .	702.4	557.3	16.9	128.3	493.4	487.5	2.4	3.5	209.0	1,970.2	357
2007 . .	767.4	599.6	18.7	149.1	533.4	527.0	2.5	3.9	234.0	2,204.2	369
2008 . .	820.1	634.2	20.6	165.4	573.4	566.8	2.5	4.0	246.7	2,450.9	384
2009 . .	870.0	668.0	22.7	179.3	615.1	608.4	2.6	4.2	254.9	2,705.8	398
2010 . .	921.3	702.4	25.1	193.7	660.6	653.6	2.6	4.4	260.7	2,966.5	410
2011 . .	977.2	738.9	29.8	208.6	710.0	702.9	2.6	4.4	267.3	3,233.8	418

[1] A detailed description of the components of income and expenditures, along with complete historical values, is presented in appendix A.

[2] "Total Income" column includes transfers made between the OASI Trust Fund and the General Fund of the Treasury that are not included in the separate components of income shown. These transfers consist of payments for (1) the cost of noncontributory wage credits for military service before 1957, and (2) the cost of benefits to certain uninsured persons who attained age 72 before 1968. In 2002, these transfers include $414 million from the General Fund of the Treasury to the OASI Trust Fund for the cost of pre-1957 military service wage credits. Otherwise, these transfers are estimated to be less than $500,000 in each year of the projection period.

[3] The "Trust fund ratio" column represents assets at the beginning of a year (which are identical to assets at the end of the prior year shown in the "Amount at end of year" column) as a percentage of expenditures during the year. See text beginning on page 37 concerning interpretation of these ratios.

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

Rising expenditures during 2002-11 reflect automatic benefit increases as well as the upward trend in the number 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.

Growth has also occurred, and will continue to occur, in the proportion of eligible persons who receive benefits. This growth is due to several factors, including (1) the amendments enacted since 1950 which affect the conditions governing the receipt of benefits and (2) the increasing percentage of eligible persons who have attained normal retirement age and who therefore may receive benefits regardless of earnings.

The estimates under all three sets of assumptions shown in table IV.A1 indicate that income to the OASI Trust Fund would substantially exceed expenditures in every year of the short-range projection period, and assets are therefore estimated to increase substantially.

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 can be used to meet various Federal outlays or to reduce the amount of publicly-held Federal debt. 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 is borrowed by the general fund, resulting in a substantial net cash flow to the general fund. As discussed in the following section on page 56, this cash flow will reverse sometime in the next 10-20 years; as increasingly larger amounts of annual interest income are used in that period 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.

In interpreting the trust fund ratios in table IV.A1, 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 6 to 7 percent of annual expenditures are sufficient for this purpose, although this minimum requirement will decline very gradually in the future as cycling of payments throughout the month phases in and replaces payment of most benefits on the third of the month. 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 IV.A1 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.

2. Operations of the DI Trust Fund

The estimated operations and financial status of the DI Trust Fund during calendar years 2002-11 under the three sets of assumptions are shown in table IV.A2, together with figures on actual experience in 1997-2001. 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. 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, but at a slightly lower rate than for the OASI Trust Fund. Under the high cost assumptions, DI assets would increase through 2007 and decline steadily thereafter.

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 3.9 percent over the period 2001-11. Growth is largely attributable to the gradual progression of the baby-boom generation toward ages 50-64 at which higher rates of disability incidence are experienced.

The proportion of insured workers who are awarded disability benefits in a given year is referred to as the disability incidence rate. 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 2001 disability incidence rate (calculated on an age-sex-adjusted basis) was 4.94 awards per

1,000 insured workers. This figure was slightly higher than the average incidence rate of 4.91 per thousand that was experienced during the period 1975-2000. The 2001 rate, however, represented an 8 percent increase over the corresponding value for 2000. This sharp one-year increase is a dramatic departure from the experience of the previous 8 years which generally observed modest annual declines in the age-sex adjusted incidence rate for disabled workers.

The increase in the incidence rate in 2001 is likely due in large part to the economic downturn experienced during that year. There was, however, a special administrative activity undertaken by SSA beginning in 2001 that contributed to the upsurge in disabled worker awards. This special workload was the result of discovering roughly 200,000 recipients of Supplemental Security Income (SSI) benefits whose disability-insured status under the DI program was not previously recognized. As the DI benefits for those in this special workload continue to be processed over the next 12-18 months, it is anticipated that a temporary increase in DI incidence rates will be observed. The first part of that temporary increase contributed to the higher than expected incidence rates in 2001. After the special workload cases are processed, the incidence rates projected in this report over the short range are expected to return to levels slightly higher than those assumed in last year's report due in part to the continuing effect of this effort to better identify DI disability insured status for SSI recipients. Under the intermediate assumptions, incidence rates are assumed to increase to 5.53 per thousand in 2002 and then decline to 4.8 per thousand in 2003 and remain at roughly that level for the remainder of the short-range projection period, slightly below the average level for the past 25 years. Under the low and high cost alternatives, incidence rates are assumed to follow a similar pattern of a temporary increase in 2002, followed by a decline in 2003. Under the low cost alternative, incidence rates decline further after 2003 to roughly 4 per thousand by the end of the short-range period. The high cost alternative assumes that incidence rates increase after 2003 to roughly 5.5 per thousand by 2011.

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 exclude drug addicts and alcoholics from the DI rolls; the diminished 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 beneficia-

ries whose benefits cease because of their recovery from disability is very low in comparison to levels experienced throughout the 1970s and early 1980s.

Table IV.A2.—Operations of the DI Trust Fund, Calendar Years 1997-2011[1]
[Amounts in billions]

	Income				Expenditures				Assets		
Calendar year	Total[2]	Net contributions	Taxation of benefits	Net interest	Total	Benefit payments	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust fund ratio[3]
Historical data:											
1997 . .	$60.5	$56.0	$0.5	$4.0	$47.0	$45.7	$1.3	$0.1	$13.5	$66.4	113
1998 . .	64.4	59.0	.6	4.8	49.9	48.2	1.6	.2	14.4	80.8	133
1999 . .	69.5	63.2	.7	5.7	53.0	51.4	1.5	.1	16.5	97.3	152
2000 . .	77.9	71.1	.7	6.9	56.8	55.0	1.6	.2	21.1	118.5	171
2001 . .	83.9	74.9	.8	8.2	61.4	59.6	1.7	[4]	22.5	141.0	193
Intermediate:											
2002 . .	87.0	77.0	.9	9.0	71.4	69.4	1.8	.2	15.5	156.5	197
2003 . .	92.4	81.4	1.0	10.0	71.7	69.7	1.8	.2	20.8	177.3	218
2004 . .	98.1	85.6	1.1	11.4	76.6	74.6	1.8	.2	21.4	198.7	231
2005 . .	104.1	90.2	1.2	12.8	83.0	80.7	2.0	.3	21.1	219.9	239
2006 . .	110.2	94.8	1.3	14.1	90.0	87.6	2.2	.3	20.2	240.0	244
2007 . .	116.6	99.8	1.4	15.3	97.5	94.9	2.3	.3	19.1	259.1	246
2008 . .	122.8	104.8	1.6	16.4	105.4	102.6	2.4	.4	17.5	276.5	246
2009 . .	129.1	109.9	1.8	17.4	113.3	110.4	2.5	.4	15.8	292.3	244
2010 . .	135.4	115.2	2.0	18.2	121.6	118.4	2.7	.5	13.9	306.2	240
2011 . .	142.1	120.8	2.4	19.0	130.2	126.9	2.8	.5	11.9	318.1	235
Low Cost:											
2002 . .	87.8	77.8	.9	9.1	70.4	68.4	1.8	.2	17.4	158.4	200
2003 . .	93.7	82.5	1.0	10.3	69.8	67.8	1.8	.2	23.9	182.3	227
2004 . .	99.9	87.0	1.0	11.9	73.0	70.9	1.8	.2	27.0	209.3	250
2005 . .	105.9	91.4	1.1	13.4	77.6	75.3	2.0	.3	28.4	237.6	270
2006 . .	111.5	95.4	1.2	15.0	82.5	80.1	2.1	.3	29.0	266.6	288
2007 . .	117.6	99.8	1.3	16.5	87.8	85.2	2.2	.3	29.9	296.5	304
2008 . .	123.9	104.4	1.4	18.1	93.1	90.4	2.3	.4	30.8	327.3	319
2009 . .	130.5	109.2	1.5	19.8	98.2	95.3	2.4	.4	32.3	359.7	333
2010 . .	137.3	114.1	1.7	21.6	103.3	100.3	2.6	.4	34.1	393.7	348
2011 . .	144.6	119.1	2.0	23.5	108.6	105.5	2.7	.4	35.9	429.6	362
High Cost:											
2002 . .	86.1	76.2	.9	9.0	73.7	71.7	1.8	.2	12.4	153.3	191
2003 . .	91.9	80.9	1.0	9.9	75.3	73.3	1.8	.2	16.5	169.9	204
2004 . .	98.2	85.7	1.2	11.3	83.0	80.9	1.8	.2	15.3	185.2	205
2005 . .	103.9	89.9	1.3	12.6	93.0	90.7	2.0	.3	10.9	196.1	199
2006 . .	109.5	94.6	1.5	13.4	104.8	102.3	2.2	.3	4.6	200.7	187
2007 . .	117.4	101.8	1.7	13.9	117.3	114.5	2.4	.4	.1	200.8	171
2008 . .	123.3	107.7	1.9	13.7	129.2	126.3	2.5	.4	-5.9	194.9	155
2009 . .	128.7	113.4	2.2	13.1	140.5	137.4	2.7	.5	-11.8	183.1	139
2010 . .	133.9	119.3	2.5	12.1	152.1	148.8	2.8	.5	-18.3	164.9	120
2011 . .	139.2	125.5	3.0	10.7	164.4	160.9	3.0	.6	-25.2	139.7	100

[1] A detailed description of the components of income and expenditures is presented in appendix A.
[2] "Total Income" column includes transfers made between the DI Trust Fund and the General Fund of the Treasury that are not included in the separate components of income shown. These transfers consist of payments for the cost of noncontributory wage credits for military service before 1957. In particular, a transfer was made in December 2000 in the amount of $836 million from the DI Trust Fund to the General Fund of the Treasury. Such transfers are estimated to be less than $500,000 in each year of the projection period.
[3] The "Trust fund ratio" column represents assets at the beginning of a year (which are identical to assets at the end of the prior year shown in the "Amount at end of year" column) as a percentage of expenditures during the year. See text beginning on page 37 concerning interpretation of these ratios.
[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 remain steady through 2002 at roughly 40 per thousand disabled. This rate then drops in 2003 and remains at a depressed level for 5 more years as a result of the increase in the normal retirement age which begins with individuals attaining age 65 in that year. Age-specific death rates for disabled beneficiaries are assumed to decline gradually from the current experience levels. Projected levels of recovery terminations for this year's report remain consistent with last year's report after adjusting for (1) 2001 actual experience, and (2) the somewhat higher numbers of disabled workers expected to return to work and leave the DI rolls as a result of the provisions in Public Law 106-170 enacted December 17, 1999. The overall termination rate (reflecting all causes) is projected to either remain level (under the low cost alternative) or decline slightly (under the intermediate and high cost alternatives) during 2002. The overall rate then declines in 2003 due largely to the increase in the normal retirement age cited above.

At the beginning of calendar year 2001, the assets of the DI Trust Fund represented 193 percent of annual expenditures. During 2001, DI income exceeded DI expenditures by $22.5 billion, contributing to an increase in the trust fund ratio for the beginning of 2002 to about 197 percent. Under the intermediate set of assumptions, total income is estimated to exceed expenditures in each year of the short-range projection period. However, the projected decline in the trust fund ratio from a peak of 246 percent in 2007 to 235 percent by the beginning of 2011 is an early warning of the eventual shortfall in available DI Trust Fund assets needed to cover current expenditures—projected under the intermediate assumptions to occur after the end of the short-range period.

Under the low cost assumptions, the trust fund ratio would increase rapidly to 362 percent at the beginning of 2011. Under the high cost assumptions, the assets of the DI Trust Fund would increase through 2004 and then decline steadily thereafter, dipping below the level of 1 year's expenditures near the middle of 2011.

Because DI assets were greater than 1 year's expenditures at the beginning of 2002 and would remain above that level in 2003 and later the DI Trust Fund satisfies the Trustees' short-range test of financial adequacy under both the intermediate and low cost assumptions. However, under the high cost assumptions the DI Trust Fund fails to meet the short-range test of financial adequacy, because assets fall below 1 year's expenditures by the end of the short-range period, as described above (see also figure IV.A1).

3. Operations of the Combined OASI and DI Trust Funds

The estimated operations and status of the OASI and DI Trust Funds, combined, during calendar years 2002-11 on the basis of the three alternatives, are shown in table IV.A3, together with figures on actual experience in 1997-2001. The dollar amounts are the sums of the corresponding figures shown in tables IV.A1 and IV.A2. Like the individual funds, the combined OASI and DI Trust Funds meet the requirements of the short-range test of financial adequacy (see also figure II.D1).

Table IV.A3.—Operations of the Combined OASI and DI Trust Funds, Calendar Years 1997-2011[1]

[Amounts in billions]

	Income				Expenditures				Assets		
Calendar year	Total[2]	Net contributions	Taxation of benefits	Net interest	Total	Benefit payments	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust fund ratio[3]
Historical data:											
1997 . .	$457.7	$406.0	$7.9	$43.8	$369.1	$362.0	$3.4	$3.7	$88.6	$655.5	154
1998 . .	489.2	430.2	9.7	49.3	382.3	375.0	3.5	3.8	107.0	762.5	171
1999 . .	526.6	459.6	11.6	55.5	392.9	385.8	3.3	3.8	133.7	896.1	194
2000 . .	568.4	492.5	12.3	64.5	415.1	407.6	3.8	3.7	153.3	1,049.4	216
2001 . .	602.0	516.4	12.7	72.9	438.9	431.9	3.7	3.3	163.1	1,212.5	239
Intermediate:											
2002 . .	624.4	530.7	13.7	79.6	465.2	457.1	4.2	3.9	159.2	1,371.8	261
2003 . .	664.2	560.9	14.5	88.8	476.6	468.6	4.2	3.8	187.6	1,559.4	288
2004 . .	706.3	589.7	15.4	101.1	499.0	491.0	4.2	3.8	207.3	1,766.6	312
2005 . .	752.5	621.4	16.4	114.7	525.4	517.3	4.4	3.8	227.1	1,993.7	336
2006 . .	799.9	653.2	17.2	129.6	554.9	546.7	4.5	3.6	245.0	2,238.7	359
2007 . .	851.7	687.8	18.6	145.3	587.5	578.9	4.7	3.9	264.2	2,502.9	381
2008 . .	904.1	722.2	20.2	161.7	623.6	614.8	4.8	4.0	280.5	2,783.4	401
2009 . .	957.8	757.4	22.1	178.3	664.2	655.1	5.0	4.1	293.6	3,077.0	419
2010 . .	1,013.7	793.8	24.3	195.6	708.4	699.1	5.1	4.2	305.3	3,382.3	434
2011 . .	1,074.3	831.9	28.7	213.8	756.2	746.7	5.3	4.2	318.1	3,700.4	447
Low Cost:											
2002 . .	630.1	535.7	13.7	80.2	464.0	455.9	4.2	3.9	166.1	1,378.6	261
2003 . .	672.9	568.1	14.4	90.4	473.4	465.4	4.2	3.8	199.4	1,578.1	291
2004 . .	717.8	599.5	15.2	103.1	491.1	483.2	4.2	3.7	226.7	1,804.7	321
2005 . .	761.7	629.6	16.0	116.2	511.6	503.6	4.3	3.7	250.1	2,054.8	353
2006 . .	803.7	657.3	16.6	129.8	534.0	526.0	4.4	3.5	269.7	2,324.5	385
2007 . .	849.9	687.6	17.8	144.5	558.8	550.5	4.6	3.8	291.1	2,615.6	416
2008 . .	898.7	718.9	19.1	160.6	586.4	578.0	4.7	3.8	312.3	2,927.9	446
2009 . .	950.5	751.9	20.7	177.8	617.6	609.0	4.8	3.8	332.9	3,260.8	474
2010 . .	1,004.5	785.8	22.6	196.2	651.5	642.7	4.9	3.9	353.0	3,613.8	500
2011 . .	1,062.7	820.5	26.3	215.9	688.1	679.3	5.0	3.8	374.6	3,988.3	525

Table IV.A3.—Operations of the Combined OASI and DI Trust Funds, Calendar Years 1997-2011[1] (Cont.)
[Amounts in billions]

	Income				Expenditures				Assets		
Calendar year	Total[2]	Net contributions	Taxation of benefits	Net interest	Total	Benefit payments	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust fund ratio[3]
High Cost:											
2002 . .	$618.6	$524.9	$13.7	$79.5	$467.7	$459.7	$4.2	$3.9	$150.9	$1,363.4	259
2003 . .	661.8	557.2	14.6	90.1	481.5	473.5	4.2	3.8	180.3	1,543.7	283
2004 . .	712.1	590.5	15.6	106.0	509.9	502.0	4.2	3.8	202.2	1,745.9	303
2005 . .	760.6	619.6	17.0	124.1	549.2	541.0	4.4	3.8	211.4	1,957.3	318
2006 . .	811.9	651.9	18.4	141.6	598.3	589.8	4.7	3.8	213.6	2,170.9	327
2007 . .	884.7	701.4	20.4	163.0	650.7	641.6	4.9	4.2	234.1	2,405.0	334
2008 . .	943.5	741.8	22.5	179.1	702.6	693.1	5.1	4.5	240.9	2,645.8	342
2009 . .	998.8	781.5	24.9	192.4	755.7	745.7	5.3	4.7	243.1	2,888.9	350
2010 . .	1,055.2	821.7	27.6	205.9	812.7	802.3	5.4	4.9	242.5	3,131.4	355
2011 . .	1,116.5	864.3	32.8	219.3	874.4	863.7	5.6	5.0	242.1	3,373.4	358

[1] A detailed description of the components of income and expenditures is presented in appendix A.
[2] "Total Income" column includes transfers made between the OASI and DI Trust Funds and the General Fund of the Treasury that are not included in the separate components of income shown. These transfers consist of payments for (1) the cost of noncontributory wage credits for military service before 1957, and (2) the cost of benefits to certain uninsured persons who attained age 72 before 1968. In particular, a transfer was made in December 2000 in the amount of $836 million from the DI Trust Fund to the General Fund of the Treasury. In 2002, $414 million was transferred from the General Fund of the Treasury to the OASI Trust Fund for the cost of pre-1957 military service wage credits. Otherwise, these transfers are estimated to be less than $500,000 in each year of the projection period.
[3] The "Trust fund ratio" column represents assets at the beginning of a year (which are identical to assets at the end of the prior year shown in the "Amount at end of year" column) as a percentage of expenditures during the year. See text beginning on page 37 concerning interpretation of these ratios.

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

4. Factors Underlying Changes in 10-Year Trust Fund Ratio Estimates From the 2001 Report

The factors underlying the changes in the intermediate estimates for the OASI, DI and the combined funds from last year's annual report to this report are analyzed in table IV.A4. In the 2001 Annual Report, the trust fund ratio for OASI was estimated to reach 453 percent at the beginning of 2010—the tenth projection year from that report. The corresponding ratio shown in this report for the tenth projection year (2011) is 491 percent. If there had been no changes to the projections, the estimated ratio at the beginning of 2011 would have been 13 percentage points higher than at the beginning of 2010. 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 23 percentage points by the beginning of 2011. Legislation enacted since last year's report eliminating deemed military wage credits, and the indirect effects of Public Law 107-16 on the taxation of benefit payments, as described earlier, resulted in a decrease in the trust fund ratio of 2 percentage points. In addition, the tenth-year trust fund

ratio showed a small net change due to the effects of (1) revised population projections and (2) 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 IV.A4. Other than the effect of the revised economic assumptions, the key factor affecting the new trust fund ratio estimates for the DI Trust Fund was the increase in the projected number of beneficiaries described earlier.

Table IV.A4.—Reasons for Change in Trust Fund Ratios at the Beginning of the Tenth Year of Projection
[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 2010	453	249	419
Change in trust fund ratio due to changes in:			
Valuation period	13	-8	9
Demographic assumptions	1/	1/	1/
Economic assumptions	23	16	22
Programmatic assumptions	4	-21	-1
Legislation	-2	-1	-2
Total change in trust fund ratio	38	-14	28
Trust fund ratio shown in this report for calendar year 2011	491	235	447

[1] Between -0.5 and 0.5 percent.

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

B. LONG-RANGE ESTIMATES

Three financial measures are useful in assessing the actuarial status of the Social Security trust funds under the financing approach specified in current law: (1) annual income and cost rates, and balances, (2) trust fund ratios, and (3) actuarial balance. The first long-range estimates presented are the series of projected annual balances, which are the differences between the projected annual income rates and annual cost rates. In assessing the financial condition of the program, particular attention should be 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. The next measure to be discussed is the pattern of projected trust fund ratios. The trust fund ratio represents the proportion of a year's projected outgo that can be paid with the funds available at the beginning of the year. Particular attention should be paid to the amount and year of maximum trust fund ratio, 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. The final measure discussed in this section is the actuarial balance, which summarizes the total income and expenditures over the valuation period and indicates whether projected income will be adequate. This section also includes a comparison of workers to beneficiaries, the long-range test of close actuarial balance, and the reasons for change in the actuarial balance from the last report.

If the 75-year actuarial balance is zero (or positive) then the trust fund ratio at the end of the period, by definition, will be at 100 percent (or greater) and financing for the program is considered to be adequate for the 75-year period. Whether or not financial adequacy is stable in the sense that it is likely to continue for subsequent 75-year periods in succeeding reports is also important when considering the actuarial status of the program. One indication of this stability is the behavior of the trust fund ratio at the end of the projection period. If projected trust fund ratios for the last several years of the long-range period are constant or rising, then it is likely that subsequent Trustees' Reports will also show projections of financial adequacy (assuming no changes in demographic and economic assumptions).

1. Annual Income Rates, Cost Rates, and Balances

Basic to the consideration of the long-range actuarial status of the trust funds 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 associated with special monthly payments to certain uninsured persons who attained age 72 before 1968 and who have fewer than 3 quarters of coverage, 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. 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.)

Table IV.B1 presents a comparison of the estimated annual income rates and cost rates by trust fund and alternative. Detailed long-range projections of trust fund operations, in nominal dollar amounts, are shown in table VI.E9.

The projections for OASI under the intermediate assumptions show the income rate increasing 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 of the cost rate is much different. It is projected to remain fairly stable for the next several years. However, from about 2010 to 2030 the cost rate increases rapidly as the baby-boom generation reaches retirement age. After 2030 the cost rate rises less rapidly through 2037 and then declines slightly for the next 9 years as the baby-boom generation ages and begins to diminish and the relatively small birth cohorts of the late 1970s reach retire-

[1] Adjustments are made to include deemed wage credits based on military service for 1983-2001, 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.

ment age. Thereafter, the cost rate rises steadily, but slowly, reflecting projected reductions in death rates and continued relatively low birth rates, reaching 17.18 percent of taxable payroll for 2076. The income rate under the intermediate assumptions also rises, reaching 11.54 percent of taxable payroll for 2076.

Projected income rates under the low cost and high cost sets of assumptions are very similar to those projected for the intermediate assumptions as they are largely a reflection of the tax rates specified in the law. OASI cost rates for the low cost and high cost assumptions differ significantly from those projected for the intermediate assumptions, but follow generally similar patterns. For the low cost assumptions, the cost rate declines somewhat for the first 5 years, and then rises, reaching the current level around 2013 and a peak of 13.35 percent of payroll for 2034. The cost rate then declines gradually, reaching a level of 12.42 percent of payroll for 2076. For the high cost assumptions, the cost rate rises generally throughout the 75-year period. It rises at a relatively fast pace 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 24.76 percent of payroll for 2076.

The projected pattern of the OASI annual balance is important in the analysis of the financial condition of the program. Under the intermediate assumptions the annual balance is positive for 16 years (through 2017) and is negative thereafter. This annual deficit rises rapidly, reaching over 2 percent of taxable payroll by 2024, and continues rising thereafter, to a level of 5.64 percent of taxable payroll for 2076.

Under the low cost assumptions the projected OASI annual balance is positive for 19 years (through 2020) and thereafter is negative. The deficit under the low cost assumptions rises to a peak of 2.08 percent of taxable payroll for 2034, but declines over the next 15 to 20 years, as the effect of the baby-boom generation diminishes and the assumed higher fertility rates increase the size of the work force. The deficit under the low cost assumptions remains fairly stable over the period 2051 through 2076. Under the high cost assumptions, however, the OASI balance is projected to be positive for only 13 years (through 2014) and to be negative thereafter, with a deficit of 2.12 percent for 2020, 7.78 percent for 2050, and 12.81 percent of payroll for 2076.

Table IV.B1.—Estimated Annual Income Rates, Cost Rates, and Balances
Calendar Years 1990-2080
[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
Historical data:									
1990.....	11.32	9.66	1.66	1.17	1.09	0.09	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	11.67	.92
1996.....	10.73	10.06	.68	1.89	1.48	.41	12.62	11.53	1.09
1997.....	10.93	9.83	1.09	1.71	1.44	.28	12.64	11.27	1.37
1998.....	10.96	9.47	1.49	1.72	1.42	.29	12.68	10.89	1.79
1999.....	10.99	9.11	1.89	1.72	1.42	.30	12.71	10.53	2.18
2000.....	10.89	9.01	1.88	1.80	1.43	.37	12.69	10.44	2.25
2001.....	10.88	9.02	1.86	1.82	1.47	.35	12.70	10.49	2.21
Intermediate:									
2002.....	10.91	9.18	1.73	1.82	1.67	.16	12.73	10.84	1.88
2003.....	10.90	8.93	1.97	1.82	1.58	.24	12.72	10.51	2.21
2004.....	10.90	8.86	2.04	1.82	1.61	.22	12.72	10.46	2.26
2005.....	10.90	8.81	2.09	1.82	1.65	.17	12.73	10.46	2.26
2006.....	10.90	8.79	2.11	1.82	1.70	.12	12.73	10.50	2.23
2007.....	10.91	8.82	2.09	1.83	1.75	.07	12.73	10.57	2.16
2008.....	10.92	8.87	2.04	1.83	1.80	.02	12.75	10.68	2.07
2009.....	10.93	8.99	1.94	1.83	1.85	-.02	12.76	10.84	1.92
2010.....	10.95	9.14	1.81	1.83	1.89	-.06	12.78	11.04	1.74
2011.....	10.99	9.31	1.68	1.84	1.94	-.10	12.83	11.25	1.58
2015.....	11.06	10.34	.72	1.84	2.02	-.18	12.90	12.36	.54
2020.....	11.16	12.09	-.92	1.85	2.15	-.30	13.01	14.24	-1.22
2025.....	11.27	13.67	-2.41	1.85	2.34	-.49	13.12	16.02	-2.90
2030.....	11.35	14.87	-3.52	1.86	2.37	-.52	13.20	17.24	-4.04
2035.....	11.39	15.42	-4.03	1.86	2.34	-.49	13.25	17.77	-4.52
2040.....	11.40	15.40	-4.00	1.86	2.37	-.51	13.26	17.77	-4.51
2045.....	11.41	15.31	-3.90	1.86	2.47	-.61	13.27	17.78	-4.51
2050.....	11.42	15.38	-3.96	1.87	2.54	-.68	13.29	17.92	-4.63
2055.....	11.44	15.65	-4.21	1.87	2.59	-.72	13.31	18.24	-4.93
2060.....	11.47	16.01	-4.54	1.87	2.59	-.72	13.34	18.60	-5.27
2065.....	11.49	16.37	-4.88	1.87	2.61	-.74	13.36	18.98	-5.62
2070.....	11.51	16.75	-5.24	1.87	2.63	-.76	13.39	19.38	-6.00
2075.....	11.54	17.11	-5.58	1.87	2.65	-.78	13.41	19.76	-6.35
2080.....	11.56	17.45	-5.89	1.87	2.66	-.79	13.43	20.11	-6.68

Table IV.B1.—Estimated Annual Income Rates, Cost Rates, and Balances Calendar Years 1990-2080 (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:									
2002.....	10.90	9.09	1.82	1.82	1.63	0.19	12.73	10.71	2.01
2003.....	10.89	8.78	2.11	1.82	1.52	.30	12.71	10.30	2.41
2004.....	10.89	8.62	2.27	1.82	1.50	.32	12.71	10.13	2.59
2005.....	10.89	8.53	2.36	1.82	1.52	.30	12.71	10.06	2.66
2006.....	10.89	8.49	2.40	1.82	1.55	.27	12.71	10.04	2.67
2007.....	10.90	8.48	2.42	1.82	1.58	.24	12.72	10.06	2.66
2008.....	10.90	8.49	2.42	1.82	1.60	.22	12.73	10.09	2.64
2009.....	10.92	8.54	2.37	1.82	1.61	.21	12.74	10.16	2.58
2010.....	10.93	8.63	2.30	1.83	1.63	.20	12.75	10.26	2.50
2011.....	10.97	8.74	2.23	1.83	1.64	.19	12.80	10.38	2.42
2015.....	11.02	9.57	1.45	1.83	1.63	.21	12.85	11.19	1.66
2020.....	11.11	11.04	.07	1.84	1.66	.17	12.95	12.71	.24
2025.....	11.19	12.31	-1.12	1.84	1.78	.06	13.03	14.09	-1.05
2030.....	11.25	13.15	-1.89	1.84	1.77	.07	13.10	14.92	-1.82
2035.....	11.28	13.33	-2.05	1.84	1.73	.11	13.12	15.06	-1.94
2040.....	11.27	12.99	-1.71	1.84	1.72	.12	13.12	14.71	-1.59
2045.....	11.26	12.61	-1.34	1.85	1.78	.07	13.11	14.38	-1.27
2050.....	11.26	12.41	-1.15	1.85	1.80	.05	13.11	14.21	-1.11
2055.....	11.27	12.40	-1.13	1.85	1.81	.04	13.11	14.20	-1.09
2060.....	11.27	12.42	-1.14	1.85	1.79	.06	13.12	14.21	-1.09
2065.....	11.27	12.39	-1.12	1.85	1.79	.06	13.12	14.18	-1.06
2070.....	11.28	12.38	-1.11	1.85	1.80	.05	13.12	14.19	-1.06
2075.....	11.28	12.41	-1.13	1.85	1.82	.03	13.13	14.23	-1.10
2080.....	11.28	12.48	-1.19	1.85	1.83	.02	13.13	14.31	-1.18
High Cost:									
2002.....	10.91	9.29	1.62	1.82	1.74	.08	12.73	11.02	1.71
2003.....	10.90	9.01	1.89	1.82	1.67	.15	12.72	10.69	2.04
2004.....	10.90	8.94	1.96	1.82	1.74	.09	12.73	10.68	2.05
2005.....	10.91	9.12	1.80	1.83	1.86	-.03	12.74	10.97	1.77
2006.....	10.92	9.34	1.58	1.83	1.98	-.16	12.75	11.33	1.42
2007.....	10.93	9.41	1.52	1.83	2.07	-.24	12.76	11.48	1.28
2008.....	10.94	9.56	1.39	1.83	2.15	-.32	12.78	11.71	1.06
2009.....	10.96	9.73	1.23	1.83	2.22	-.39	12.79	11.95	.84
2010.....	10.98	9.94	1.04	1.84	2.29	-.45	12.82	12.23	.59
2011.....	11.03	10.16	.86	1.84	2.35	-.51	12.87	12.51	.36
2015.....	11.11	11.35	-.24	1.85	2.49	-.64	12.96	13.84	-.89
2020.....	11.23	13.34	-2.12	1.86	2.69	-.83	13.09	16.03	-2.95
2025.....	11.35	15.25	-3.91	1.87	2.98	-1.11	13.21	18.23	-5.02
2030.....	11.45	16.88	-5.43	1.87	3.05	-1.18	13.32	19.93	-6.61
2035.....	11.52	17.95	-6.42	1.88	3.05	-1.17	13.40	20.99	-7.59
2040.....	11.56	18.44	-6.87	1.88	3.12	-1.24	13.44	21.56	-8.11
2045.....	11.60	18.84	-7.25	1.89	3.31	-1.42	13.48	22.15	-8.67
2050.....	11.64	19.42	-7.78	1.89	3.46	-1.57	13.53	22.88	-9.35
2055.....	11.69	20.23	-8.54	1.89	3.59	-1.69	13.58	23.82	-10.23
2060.....	11.75	21.22	-9.47	1.90	3.63	-1.73	13.64	24.84	-11.20
2065.....	11.81	22.30	-10.49	1.90	3.68	-1.78	13.71	25.98	-12.27
2070.....	11.88	23.45	-11.57	1.90	3.72	-1.82	13.78	27.17	-13.39
2075.....	11.94	24.55	-12.61	1.90	3.74	-1.84	13.84	28.30	-14.46
2080.....	12.00	25.54	-13.54	1.90	3.76	-1.86	13.90	29.30	-15.40

[1] Income rates for DI in 2000 and for OASI in 2002 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.

Under the intermediate assumptions, the cost rate for DI generally increases over the long-range period from 1.67 percent of taxable payroll for 2002, reaching 2.65 for 2076. The income rate increases only very slightly from 1.82 percent of taxable payroll for 2002 to 1.87 percent for 2076. The annual balance turns negative in 2009, and the annual deficit reaches 0.78 percent for 2076.

Under the low cost assumptions, the DI cost rate increases much less, reaching 1.82 percent for 2076, with a positive annual balance throughout the period. For the high cost assumptions, DI cost rises much more, reaching 3.75 percent for 2076, with an annual deficit beginning in 2005 and reaching 1.85 percent for 2076.

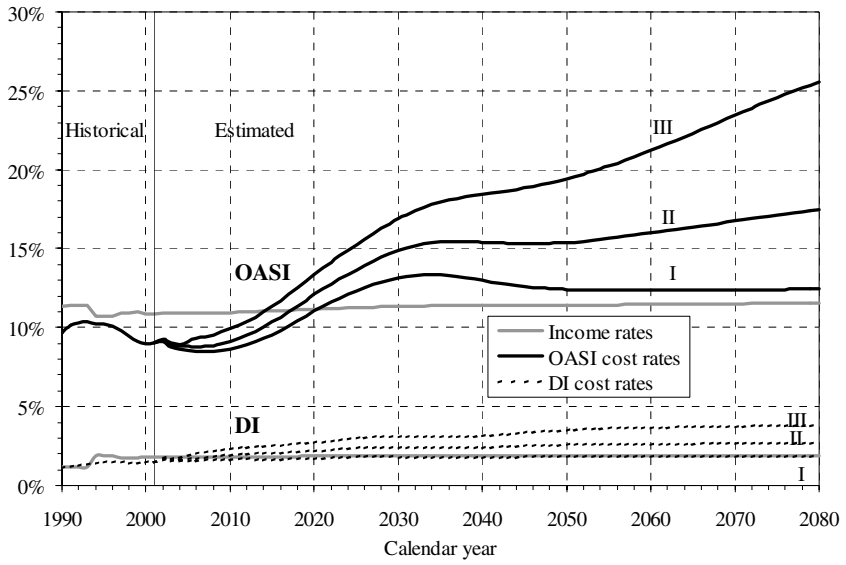
Also of interest are the annual income rate, cost rate, and balance for the OASDI program. These rates are shown in table IV.B1 and are discussed in section II.D.

Figure IV.B1 shows in graphical form the patterns of the OASI and DI annual income rates and cost rates. (The combined OASI and DI rates are shown in figure II.D2 on page 13.) The income rates shown here are only for alternative II in order to simplify the graphical presentation and because, as shown in table IV.B1, 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 increases in the total amount of benefits paid and the fact that an increasing share of individual benefits will be subject to taxation, because benefit taxation threshold amounts are not indexed.

The patterns of the annual balances for OASI and DI are indicated in figure IV.B1. 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 OASI, DI and the combined 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 demographic and economic conditions, the resulting estimates delineate a reasonable range for consideration of potential future program costs.

Figure IV.B1.—Long-Range OASI and DI Annual Income Rates and Cost Rates
[As a percentage of taxable payroll]



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 gross domestic product (GDP). OASDI outlays generally rise from about 4.5 percent of GDP currently to about 7.0 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 VI.E.2 beginning on page 162.

2. 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 baby-boom generation 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 comparison of the numbers of covered workers and beneficiaries is shown in table IV.B2.

Table IV.B2.—Covered Workers and Beneficiaries, Calendar Years 1945-2080

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	113,649	30,384	4,734	35,118	3.2	31
1985	120,565	32,776	3,874	36,650	3.3	30
1990	133,672	35,266	4,204	39,470	3.4	30
1991	132,969	35,785	4,388	40,172	3.3	30
1992	133,890	36,314	4,716	41,029	3.3	31
1993	136,117	36,758	5,083	41,840	3.3	31
1994	138,192	37,082	5,435	42,516	3.3	31
1995	141,017	37,376	5,731	43,108	3.3	31
1996	143,405	37,521	5,977	43,498	3.3	30
1997	146,125	37,705	6,087	43,793	3.3	30
1998	148,936	37,826	6,250	44,076	3.4	30
1999	151,403	37,934	6,433	44,367	3.4	29
2000	153,682	38,560	6,606	45,166	3.4	29
2001	153,477	38,888	6,780	45,668	3.4	30
Intermediate:						
2005	157,530	40,091	8,008	48,099	3.3	31
2010	165,443	43,483	9,382	52,865	3.1	32
2015	169,688	49,767	10,253	60,020	2.8	35
2020	172,848	57,627	11,071	68,699	2.5	40
2025	175,421	65,270	12,095	77,365	2.3	44
2030	178,131	71,638	12,432	84,070	2.1	47
2035	181,247	75,603	12,579	88,183	2.1	49
2040	184,433	77,135	12,933	90,068	2.0	49
2045	187,274	78,284	13,647	91,931	2.0	49
2050	189,845	79,934	14,175	94,109	2.0	50
2055	192,259	82,469	14,603	97,072	2.0	50
2060	194,568	85,372	14,804	100,177	1.9	51
2065	196,739	88,352	15,067	103,419	1.9	53
2070	198,687	91,377	15,346	106,723	1.9	54
2075	200,496	94,275	15,621	109,896	1.8	55
2080	202,238	97,031	15,864	112,895	1.8	56
Low Cost:						
2005	159,607	40,061	7,666	47,728	3.3	30
2010	168,537	43,327	8,476	51,803	3.3	31
2015	173,879	49,227	8,772	57,999	3.0	33
2020	178,067	56,616	9,146	65,761	2.7	37
2025	181,816	63,721	9,793	73,515	2.5	40
2030	186,123	69,384	9,980	79,364	2.3	43
2035	191,449	72,516	10,084	82,600	2.3	43
2040	197,455	73,258	10,395	83,653	2.4	42
2045	203,738	73,825	11,002	84,827	2.4	42
2050	210,106	75,121	11,487	86,608	2.4	41
2055	216,708	77,431	11,928	89,359	2.4	41
2060	223,660	80,096	12,247	92,343	2.4	41
2065	230,978	82,743	12,673	95,416	2.4	41
2070	238,407	85,505	13,183	98,688	2.4	41
2075	245,909	88,462	13,729	102,191	2.4	42
2080	253,476	91,724	14,265	105,989	2.4	42

Table IV.B2.—Covered Workers and Beneficiaries, Calendar Years 1945-2080 (Cont.)

Calendar year	Covered workers[1] (in thousands)	Beneficiaries[2] (in thousands)			Covered workers per OASDI beneficiary	Beneficiaries per 100 covered workers
		OASI	DI	OASDI		
High Cost:						
2005	156,053	40,120	8,602	48,723	3.2	31
2010	162,486	43,643	10,604	54,247	3.0	33
2015	166,055	50,322	11,900	62,222	2.7	37
2020	168,462	58,744	13,086	71,830	2.3	43
2025	170,164	67,075	14,475	81,550	2.1	48
2030	171,607	74,378	14,958	89,336	1.9	52
2035	172,913	79,463	15,146	94,609	1.8	55
2040	173,756	82,102	15,542	97,644	1.8	56
2045	173,698	84,204	16,367	100,571	1.7	58
2050	173,069	86,603	16,938	103,541	1.7	60
2055	172,007	89,735	17,334	107,069	1.6	62
2060	170,564	93,210	17,365	110,575	1.5	65
2065	168,667	96,803	17,387	114,189	1.5	68
2070	166,391	100,331	17,313	117,644	1.4	71
2075	163,912	103,438	17,183	120,622	1.4	74
2080	161,387	105,956	17,006	122,961	1.3	76

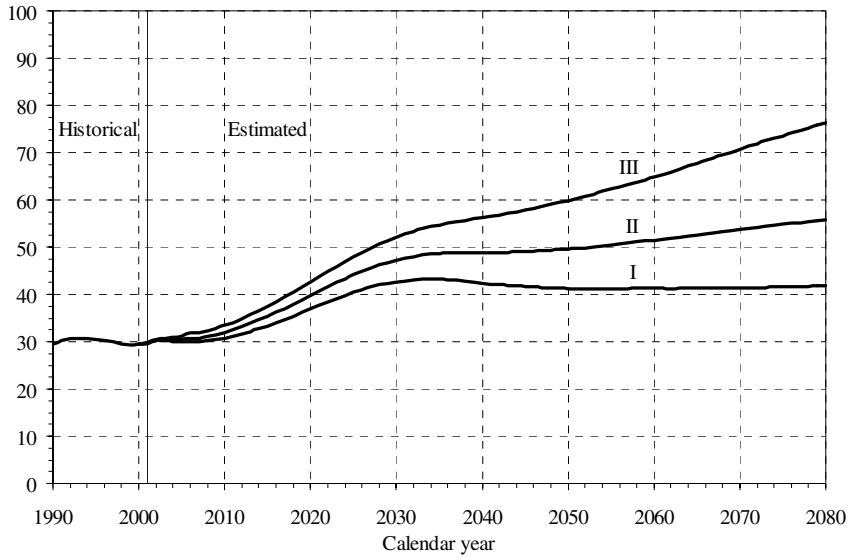
[1] Workers who are paid at some time during the year for employment on which OASDI taxes are due.
[2] Beneficiaries with monthly benefits in current-payment status as of June 30.

Notes:
1. The 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 cases the costs are reimbursed by the General Fund of the Treasury. Totals do not necessarily equal the sums of rounded components.
2. Historical covered worker data are subject to revision.

Table IV.B2 shows that the number of covered workers per beneficiary, which was about 3.4 in 2001, is estimated to decline in the future. Based on the low cost assumptions, 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. Based on the high cost assumptions, for which low fertility rates and large reductions in death rates are assumed, the decline is much greater, reaching 1.8 by 2034, and 1.4 workers per beneficiary by 2068. Based on the intermediate assumptions, the ratio declines to 2.1 by 2029, and 1.9 workers per beneficiary by 2059.

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 2001 level of 30 beneficiaries per 100 covered workers, this ratio is estimated to rise significantly by 2080 to 42 under the low cost assumptions, 56 under the intermediate assumptions, and 76 under the high cost assumptions. The significance of these numbers can be seen by comparing figure IV.B1 to figure IV.B2.

Figure IV.B2.—Number of OASDI Beneficiaries Per 100 Covered Workers



For each alternative, the shape of the curve in figure IV.B2, which shows beneficiaries per 100 covered workers, is strikingly similar to that of the corresponding cost-rate curve in figure IV.B1, 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 II.D3 on page 14 of the Overview.

3. Trust Fund Ratios

Trust fund ratios are useful indicators of the adequacy of the financial resources of the Social Security program at any point in time. For any year in which the projected trust fund ratio is positive (i.e., the trust fund holds assets at the beginning of the year), but is not positive for the following year, the trust fund is projected to become exhausted during the year. Under present law, the OASI and DI Trust Funds do not currently have the authority to borrow. Therefore, exhaustion of the assets in either fund during a year, would mean there are no longer sufficient funds to cover the full amount of benefits payable under present law.

The trust fund ratio also serves an additional important purpose in assessing the actuarial status of the program. When the financing is adequate for the timely payment of full benefits throughout the long-range period, the stability of the trust fund ratio toward the end of the period indicates the likelihood that this projected adequacy will continue for subsequent Trustees' Reports. If the trust fund ratio toward the end of the period is level (or increasing) then projected adequacy for the long-range period is likely to continue for subsequent reports.

Table IV.B3 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 OASI and DI trust fund ratios, over the 75-year period, are shown graphically in figure IV.B3 for all three sets of assumptions. A graphical presentation of the combined OASDI ratios is shown in figure II.D4 on page 15.

Based on the intermediate assumptions, the OASI trust fund ratio rises steadily from 272 percent at the beginning of 2002, reaching a peak of 522 percent at the beginning of 2015. This increase in the OASI trust fund ratio results from the fact that the annual income rate (which excludes interest) exceeds annual outgo for several years (see table IV.B1). Thereafter, the OASI trust fund ratio declines steadily, with the OASI Trust Fund becoming exhausted in 2043. 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 197 percent at the beginning of 2002 to a peak of 246 percent for 2007, and to decline thereafter until becoming exhausted in 2028.

The trust fund ratio for the combined OASI and DI Trust Funds rises from 261 percent for 2002 to a peak of 471 percent at the beginning of 2015. Thereafter, the ratio declines, with the combined funds becoming exhausted in 2041. Based on the intermediate estimates in last year's report, the peak fund ratio for the combined funds was estimated to be 436 percent for 2014 and the year of exhaustion was estimated to be 2038.

The trust fund ratio for the OASDI program first declines in 2016, about 1 year before annual expenditures begin to exceed noninterest income. This occurs because the increase in trust fund assets during 2015, which reflects interest income and a small excess of noninterest income over cost, occurs at a slower rate than does the increase in the annual cost of the program between 2015 and 2016.

After 2015 the dollar amount of assets is projected to continue to rise through the beginning of 2027 because interest income more than offsets the shortfall in noninterest income. Beginning in 2017, the OASDI program is projected to experience increasingly large cash-flow shortfalls that will require the trust funds to redeem special public-debt obligations of the General Fund of the Treasury. This will differ from the experience of recent years when the trust funds have been net lenders to the General Fund of the Treasury. 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 assumptions, the trust fund ratio for the DI program increases throughout the long-range projection period, reaching the extremely high level of 1,459 percent for 2077. At the end of the long-range period, the DI trust fund ratio is rising by 20 percentage points per year. Thus, subsequent reports are likely to contain projections of adequate long-range financing of the DI program under a similar optimistic set of assumptions. For the OASI program, the trust fund ratio rises to a peak of 633 percent for 2018, dropping thereafter to a level of 377 percent by 2077. At the end of the period the OASI trust fund ratio is declining by 4 percentage points per year. The long term outlook for the DI program is improved more than for the OASI program largely because lower assumed disability incidence rates have a substantial effect on the DI program but little net effect on the OASI program. For the OASDI program, the trust fund ratio follows a pattern similar to that for OASI, peaking at 614 percent for 2019, and then falling to 515 percent for 2043. However, after 2043 the combined OASI and DI trust fund ratio stays about level, with a value of 515 percent for 2077, with an annual decline at a rate of 1 percentage point. Thus, due to the size of the trust fund ratios and their near stability, subsequent Trustees' Reports are likely to contain projections of adequate long-range financing of the OASI and combined OASI and DI program under the low cost assumptions. 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 assumptions, the OASI trust fund ratio is estimated to peak at 425 percent for 2013, thereafter declining to fund exhaustion by the end of 2032. The DI trust fund ratio is estimated to peak at 205 percent for 2004, thereafter declining to fund exhaustion by the end of 2015. The combined OASDI trust fund ratio is estimated to rise to a peak of 359 percent for 2012, declining thereafter to fund exhaustion by the end of 2029.

Thus, because the high ultimate cost rates are projected under all but the low cost assumptions, it is likely that 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 27 years into the future (until 2029). Under the intermediate assumptions the combined starting funds plus estimated future income would be able to cover expenditures for about 39 years into the future (until 2041). The program would be able to cover expenditures for the indefinite future under the more optimistic low cost assumptions. In the 2001 report, the combined trust funds were projected to be exhausted in 2027 under the high cost assumptions and in 2038 under the intermediate assumptions.

Table IV.B3.—Estimated Trust Fund Ratios, Calendar Years 2002-80

[In percent]

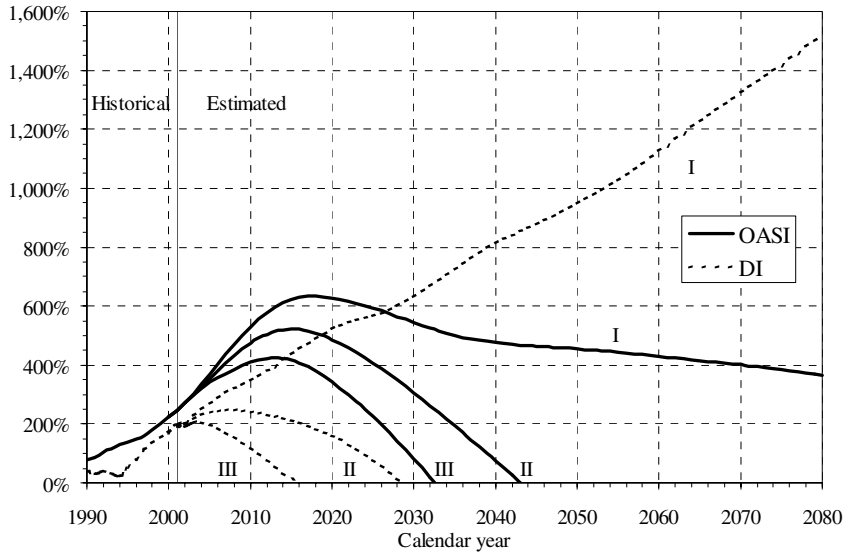
	Intermediate			Low Cost			High Cost		
Calendar year	OASI	DI	Combined	OASI	DI	Combined	OASI	DI	Combined
2002	272	197	261	272	200	261	272	191	259
2003	300	218	288	302	227	291	298	204	283
2004	327	231	312	334	250	321	322	205	303
2005	354	239	336	368	270	353	342	199	318
2006	382	244	359	402	288	385	357	187	327
2007	408	246	381	437	304	416	369	171	334
2008	433	246	401	470	319	446	384	155	342
2009	455	244	419	501	333	474	398	139	350
2010	475	240	434	529	348	500	410	120	355
2011	491	235	447	556	362	525	418	100	358
2015	522	212	471	622	436	595	417	10	343
2020	486	161	437	626	521	613	342	1/	264
2025	407	78	359	592	568	589	226	1/	143
2030	306	1/	260	544	631	554	83	1/	1/
2035	193	1/	149	501	724	526	1/	1/	1/
2040	75	1/	31	476	814	516	1/	1/	1/
2045	1/	1/	1/	464	877	515	1/	1/	1/
2050	1/	1/	1/	455	947	517	1/	1/	1/
2055	1/	1/	1/	444	1,026	518	1/	1/	1/
2060	1/	1/	1/	429	1,125	517	1/	1/	1/
2065	1/	1/	1/	415	1,226	517	1/	1/	1/
2070	1/	1/	1/	401	1,323	518	1/	1/	1/
2075	1/	1/	1/	384	1,419	517	1/	1/	1/
2080	1/	1/	1/	364	1,521	512	1/	1/	1/
Trust fund is estimated to be exhausted in:	2043	2028	2041	2/	2/	2/	2032	2015	2029

[1] The trust fund is estimated to be 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 definition of trust fund ratio on page 197. The combined ratios shown for years after 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 separate OASI and DI Trust Funds is shown in figure IV.B3 for each of the alternative sets of assumptions. A graphic illustration of the trust fund ratios for the combined trust funds is shown in figure II.D4.

Figure IV.B3.—Long-Range OASI and DI Trust Fund Ratios
[Assets as a percentage of annual expenditures]



4. Summarized Income Rates, Cost Rates, and Balances

Summarized values for the full 75-year period are useful in analyzing the long-range adequacy of financing for the program over the period as a whole under present law and under 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 IV.B4 and IV.B5 summarize, on a present-value basis, the projected annual figures shown in table IV.B1 for various periods within the overall 75-year projection period.

Table IV.B4 shows rates on a present-value basis summarized for each of the 25-year subperiods, excluding both the assets of the trust 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 total 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 OASDI program, a positive balance is projected for the first 25-year subperiod under both the low cost and intermediate assumptions. A deficit is projected for the first 25-year subperiod under the high cost assumptions. Deficits are projected for the second and third subperiods under all three alternatives.

Table IV.B4.—Summarized Income Rates, Cost Rates, and Balances for 25-Year Subperiods,[1] Calendar Years 2002-76

[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:									
2002-26	11.03	10.45	0.58	1.84	1.96	-0.13	12.87	12.42	0.45
2027-51	11.38	15.19	-3.81	1.86	2.41	-.55	13.24	17.60	-4.36
2052-76	11.48	16.24	-4.77	1.87	2.61	-.74	13.34	18.85	-5.51
Low Cost:									
2002-26	11.00	9.76	1.24	1.83	1.63	.20	12.83	11.39	1.44
2027-51	11.26	12.93	-1.67	1.84	1.76	.08	13.10	14.69	-1.59
2052-76	11.27	12.40	-1.13	1.85	1.80	.05	13.11	14.20	-1.09
High Cost:									
2002-26	11.07	11.34	-.27	1.84	2.37	-.53	12.92	13.71	-.80
2027-51	11.53	18.05	-6.52	1.88	3.17	-1.29	13.41	21.21	-7.81
2052-76	11.78	21.94	-10.15	1.90	3.65	-1.76	13.68	25.59	-11.91

[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 IV.B5 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. A negative actuarial balance indicates that, over the next 75 years, the present value of income to the program plus the existing trust fund falls short of the present value of expenditures by the program plus the cost of reaching a target trust fund balance of 1 year's expenditures by the end of the period—deficits for some years within the period are not fully offset by surpluses in other years. Combined with a falling trust fund ratio, this signals the possibility of continuing cash-flow deficits, implying that the current-law level of financing is not sustainable.

Table IV.B5.—Summarized Income Rates, Cost Rates, and Actuarial Balances for Valuation Periods,[1] Calendar Years 2002-76

[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:									
2002-26.	12.22	10.93	1.29	1.99	2.04	-0.05	14.21	12.98	1.24
50 years:									
2002-51.	11.88	12.59	-.71	1.94	2.18	-.24	13.82	14.77	-.95
75 years:									
2002-76.	11.79	13.33	-1.54	1.92	2.26	-.34	13.72	15.59	-1.87
Low Cost:									
25 years:									
2002-26.	12.19	10.18	2.01	1.98	1.69	.29	14.17	11.87	2.30
50 years:									
2002-51.	11.81	11.21	.60	1.93	1.71	.22	13.74	12.92	.82
75 years:									
2002-76.	11.69	11.43	.26	1.91	1.72	.19	13.60	13.16	.44
High Cost:									
25 years:									
2002-26.	12.28	11.89	.39	2.00	2.48	-.47	14.28	14.36	-.09
50 years:									
2002-51.	11.97	14.38	-2.41	1.95	2.75	-.80	13.92	17.13	-3.21
75 years:									
2002-76.	11.93	15.95	-4.02	1.94	2.93	-.99	13.87	18.87	-5.00

[1] Income rates include beginning trust fund balances and cost rates include the cost of reaching a target trust fund level of 1 year's expenditures at the end of the period.

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

The values in table IV.B5 show that the combined OASDI program is expected to operate with a positive actuarial balance over the 25-year valuation period under the low cost and intermediate assumptions. For the 25-year valuation period the summarized values indicate actuarial balances of 2.30 percent of taxable payroll under the low cost assumptions, 1.24 percent under the intermediate assumptions, and -0.09 percent under the high cost assumptions. Thus, the program is more than adequately financed for the 25-year valuation period under all but the high cost projections. For the 50-year valuation period the OASDI program would have a positive actuarial balance of 0.82 percent under the low cost assumptions, but would have deficits of 0.95 percent under the intermediate assumptions and 3.21 percent under the high cost assumptions. Thus, the program is more than adequately financed for the 50-year valuation period under only the low cost set of assumptions.

For the entire 75-year valuation period, the combined OASDI program would again have actuarial deficits except under the low cost set of assumptions. The actuarial balance for this long-range valuation period is projected to be 0.44 percent of taxable payroll under the low cost assumptions,

-1.87 percent under the intermediate assumptions, and -5.00 percent under the high cost assumptions.

Assuming the Trustees' intermediate assumptions are realized, the deficit of 1.87 percent of payroll indicates that financial adequacy of the program for the next 75 years could be restored if the Social Security payroll tax were immediately and permanently increased from its current level of 12.4 percent (combined employee-employer shares) to 14.27 percent. Alternatively, all current and future benefits could be reduced by about 13 percent (or there could be some combination of tax increases and benefit reductions). Changes of this magnitude would be sufficient to eliminate the actuarial deficit over the 75-year projection period. However, because of the projected increase in the average age of the population, projected annual deficits begin in 2017 and increase to levels in excess of 6 percent of taxable payroll by the end of the 75-year period. The large annual deficits at the end of the projection period indicate that the annual cost will very likely continue to exceed tax revenues after 2076. As a result, ensuring the sustainability of the system would eventually require larger changes than those needed to restore actuarial balance for the 75-year period.

As may be concluded from tables IV.B4 and IV.B5, 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 similar, relative to the level of program costs.

5. Test of Long-Range Close 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, the summarized income rate and cost rate 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 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 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 effectively plan for their retirement.

Table IV.B6 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 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 IV.B4 for the OASI, DI and combined OASDI program. Values shown for the 25-year, 50-year, and 75-year valuation periods correspond to those presented in table IV.B5.

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 41 years, under the intermediate estimates. For valuation periods of length greater than 41 years, the estimated actuarial balance is less than the minimum allowable. For the full 75-year long-range period the estimated actuarial balance reaches -11.52 percent of the summarized cost rate, for a shortfall of 6.52 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 on page 33), 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 23 years under the intermediate estimates. For valuation periods of length greater than 23 years, the estimated actuarial balance is less than the minimum allowable. For the full 75-year long-range period the estimated actuarial balance reaches -14.95 percent of the summarized cost rate, for a shortfall of 9.95 percent, from the minimum allowable balance of -5.0 percent of the summarized cost rate. Thus, the DI program, although meeting the short-range test of financial adequacy, is not in long-range close actuarial balance.

Financing for the DI program is much 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 due to the aging of the large baby-boom generation occurs earlier 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 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 38 years. For valuation periods of length greater than 38 years, the estimated actuarial balance is below the minimum allowable balance. The size of the shortfall from the minimum allowable balance rises gradually, reaching 7.02 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, it is out of long-range close actuarial balance.

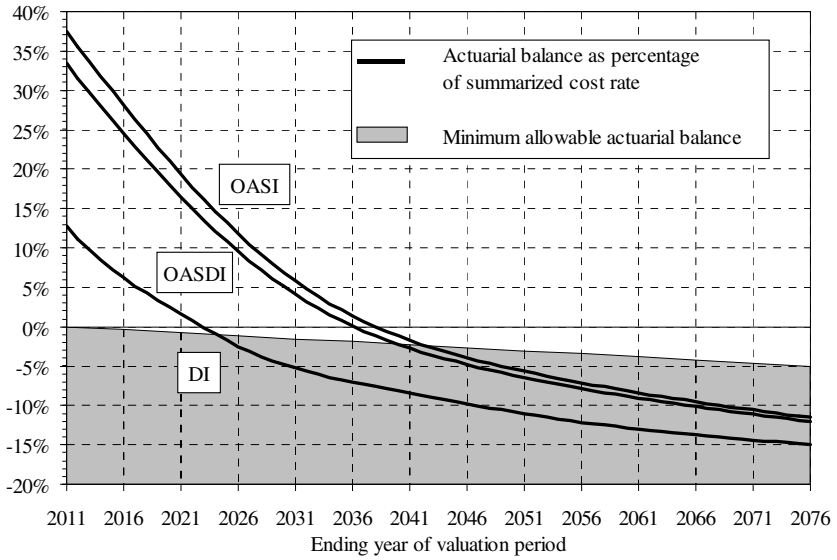
The OASI and DI programs, both separate and combined, were also found to be out of close actuarial balance in last year's report. The estimated deficits for the OASI, DI, and combined OASDI program in this report are similar to those shown in last year's report.

Table IV.B6.—Comparison of Estimated Long-Range Actuarial Balances With the Minimum Allowable in the Test for Close Actuarial Balance, Based on Intermediate Assumptions

	Rates (percentage of taxable payroll)			Values expressed as a percentage of cost rate	
Valuation period	Summarized income rate	Summarized cost rate	Actuarial balance	Actuarial balance	Minimum allowable actuarial balance
OASI:					
10 years: 2002-11	13.60	9.89	3.70	37.44	0.00
15 years: 2002-16	12.80	9.99	2.81	28.10	-.38
20 years: 2002-21	12.42	10.41	2.01	19.30	-.77
25 years: 2002-26	12.22	10.93	1.29	11.78	-1.15
30 years: 2002-31	12.10	11.44	.66	5.79	-1.54
35 years: 2002-36	12.02	11.86	.16	1.35	-1.92
40 years: 2002-41	11.96	12.17	-.21	-1.74	-2.31
45 years: 2002-46	11.91	12.40	-.49	-3.95	-2.69
50 years: 2002-51	11.88	12.59	-.71	-5.66	-3.08
55 years: 2002-56	11.85	12.76	-.91	-7.11	-3.46
60 years: 2002-61	11.83	12.92	-1.08	-8.39	-3.85
65 years: 2002-66	11.82	13.06	-1.25	-9.54	-4.23
70 years: 2002-71	11.80	13.20	-1.40	-10.57	-4.62
75 years: 2002-76	11.79	13.33	-1.54	-11.52	-5.00
DI:					
10 years: 2002-11	2.18	1.93	.25	12.74	.00
15 years: 2002-16	2.07	1.95	.12	6.18	-.38
20 years: 2002-21	2.02	1.99	.03	1.59	-.77
25 years: 2002-26	1.99	2.04	-.05	-2.50	-1.15
30 years: 2002-31	1.97	2.08	-.11	-5.27	-1.54
35 years: 2002-36	1.96	2.11	-.15	-7.05	-1.92
40 years: 2002-41	1.95	2.13	-.18	-8.44	-2.31
45 years: 2002-46	1.94	2.15	-.21	-9.80	-2.69
50 years: 2002-51	1.94	2.18	-.24	-11.04	-3.08
55 years: 2002-56	1.93	2.20	-.27	-12.12	-3.46
60 years: 2002-61	1.93	2.22	-.29	-13.00	-3.85
65 years: 2002-66	1.93	2.23	-.31	-13.74	-4.23
70 years: 2002-71	1.92	2.25	-.32	-14.38	-4.62
75 years: 2002-76	1.92	2.26	-.34	-14.95	-5.00
OASDI:					
10 years: 2002-11	15.77	11.82	3.95	33.41	.00
15 years: 2002-16	14.87	11.94	2.93	24.52	-.38
20 years: 2002-21	14.45	12.40	2.04	16.46	-.77
25 years: 2002-26	14.21	12.98	1.24	9.53	-1.15
30 years: 2002-31	14.07	13.52	.55	4.08	-1.54
35 years: 2002-36	13.98	13.97	.01	.08	-1.92
40 years: 2002-41	13.91	14.30	-.39	-2.73	-2.31
45 years: 2002-46	13.86	14.56	-.70	-4.81	-2.69
50 years: 2002-51	13.82	14.77	-.95	-6.45	-3.08
55 years: 2002-56	13.79	14.96	-1.17	-7.85	-3.46
60 years: 2002-61	13.76	15.13	-1.37	-9.07	-3.85
65 years: 2002-66	13.74	15.30	-1.55	-10.15	-4.23
70 years: 2002-71	13.73	15.45	-1.72	-11.13	-4.62
75 years: 2002-76	13.72	15.59	-1.87	-12.02	-5.00

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

Figure IV.B4.—Long-Range Test of Close Actuarial Balance
[Comparison of Estimated Long-Range Actuarial Balances With the Minimum Allowable for Close Actuarial Balance Under Intermediate Assumptions]



6. Income and Cost Rates by Component

Annual income rates and their components are shown in table IV.B7 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. (Increasing income from taxation of benefits reflects rising benefit and income levels and the fact that benefit-taxation threshold amounts are not indexed.)

Summarized income and cost rates, along with their components, are presented in table IV.B8 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 a target trust fund of 100 percent of annual expenditures at 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.

Values shown in the table below for income from taxation of benefits for years 2015 and later are about 10 percent higher than values estimated for last year's report. See section IV.B.7 for a discussion of the methodological change that resulted in this increase.

Table IV.B7.—Components of Annual Income Rates, Calendar Years 2002-80
[As a percentage of taxable payroll]

	OASI			DI			Combined		
Calendar year	Payroll tax rate	Taxation of benefits	Total	Payroll tax rate	Taxation of benefits	Total	Payroll tax rate	Taxation of benefits	Total
Intermediate:									
2002	10.60	0.31	10.91	1.80	0.02	1.82	12.40	0.33	12.73
2003	10.60	.30	10.90	1.80	.02	1.82	12.40	.32	12.72
2004	10.60	.30	10.90	1.80	.02	1.82	12.40	.32	12.72
2005	10.60	.30	10.90	1.80	.02	1.82	12.40	.33	12.73
2006	10.60	.30	10.90	1.80	.02	1.82	12.40	.33	12.73
2007	10.60	.31	10.91	1.80	.03	1.83	12.40	.33	12.73
2008	10.60	.32	10.92	1.80	.03	1.83	12.40	.35	12.75
2009	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
2011	10.60	.39	10.99	1.80	.04	1.84	12.40	.43	12.83
2015	10.60	.46	11.06	1.80	.04	1.84	12.40	.50	12.90
2020	10.60	.56	11.16	1.80	.05	1.85	12.40	.61	13.01
2025	10.60	.67	11.27	1.80	.05	1.85	12.40	.72	13.12
2030	10.60	.75	11.35	1.80	.06	1.86	12.40	.80	13.20
2035	10.60	.79	11.39	1.80	.06	1.86	12.40	.85	13.25
2040	10.60	.80	11.40	1.80	.06	1.86	12.40	.86	13.26
2045	10.60	.81	11.41	1.80	.06	1.86	12.40	.87	13.27
2050	10.60	.82	11.42	1.80	.07	1.87	12.40	.89	13.29
2055	10.60	.84	11.44	1.80	.07	1.87	12.40	.91	13.31
2060	10.60	.87	11.47	1.80	.07	1.87	12.40	.94	13.34
2065	10.60	.89	11.49	1.80	.07	1.87	12.40	.96	13.36
2070	10.60	.91	11.51	1.80	.07	1.87	12.40	.99	13.39
2075	10.60	.94	11.54	1.80	.07	1.87	12.40	1.01	13.41
2080	10.60	.96	11.56	1.80	.07	1.87	12.40	1.03	13.43

Table IV.B7.—Components of Annual Income Rates, Calendar Years 2002-80 (Cont.)
[As a percentage of taxable payroll]

	OASI			DI			Combined		
Calendar year	Payroll tax rate	Taxation of benefits	Total	Payroll tax rate	Taxation of benefits	Total	Payroll tax rate	Taxation of benefits	Total
Low Cost:									
2002	10.60	0.30	10.90	1.80	0.02	1.82	12.40	0.33	12.73
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	.31	12.71
2006	10.60	.29	10.89	1.80	.02	1.82	12.40	.31	12.71
2007	10.60	.30	10.90	1.80	.02	1.82	12.40	.32	12.72
2008	10.60	.30	10.90	1.80	.02	1.82	12.40	.33	12.73
2009	10.60	.32	10.92	1.80	.02	1.82	12.40	.34	12.74
2010	10.60	.33	10.93	1.80	.03	1.83	12.40	.35	12.75
2011	10.60	.37	10.97	1.80	.03	1.83	12.40	.40	12.80
2015	10.60	.42	11.02	1.80	.03	1.83	12.40	.45	12.85
2020	10.60	.51	11.11	1.80	.04	1.84	12.40	.55	12.95
2025	10.60	.59	11.19	1.80	.04	1.84	12.40	.63	13.03
2030	10.60	.65	11.25	1.80	.04	1.84	12.40	.70	13.10
2035	10.60	.68	11.28	1.80	.04	1.84	12.40	.72	13.12
2040	10.60	.67	11.27	1.80	.04	1.84	12.40	.72	13.12
2045	10.60	.66	11.26	1.80	.05	1.85	12.40	.71	13.11
2050	10.60	.66	11.26	1.80	.05	1.85	12.40	.71	13.11
2055	10.60	.67	11.27	1.80	.05	1.85	12.40	.71	13.11
2060	10.60	.67	11.27	1.80	.05	1.85	12.40	.72	13.12
2065	10.60	.67	11.27	1.80	.05	1.85	12.40	.72	13.12
2070	10.60	.68	11.28	1.80	.05	1.85	12.40	.72	13.12
2075	10.60	.68	11.28	1.80	.05	1.85	12.40	.73	13.13
2080	10.60	.68	11.28	1.80	.05	1.85	12.40	.73	13.13
High Cost:									
2002	10.60	.31	10.91	1.80	.02	1.82	12.40	.33	12.73
2003	10.60	.30	10.90	1.80	.02	1.82	12.40	.32	12.72
2004	10.60	.30	10.90	1.80	.02	1.82	12.40	.33	12.73
2005	10.60	.31	10.91	1.80	.03	1.83	12.40	.34	12.74
2006	10.60	.32	10.92	1.80	.03	1.83	12.40	.35	12.75
2007	10.60	.33	10.93	1.80	.03	1.83	12.40	.36	12.76
2008	10.60	.34	10.94	1.80	.03	1.83	12.40	.38	12.78
2009	10.60	.36	10.96	1.80	.03	1.83	12.40	.39	12.79
2010	10.60	.38	10.98	1.80	.04	1.84	12.40	.42	12.82
2011	10.60	.43	11.03	1.80	.04	1.84	12.40	.47	12.87
2015	10.60	.51	11.11	1.80	.05	1.85	12.40	.56	12.96
2020	10.60	.63	11.23	1.80	.06	1.86	12.40	.69	13.09
2025	10.60	.75	11.35	1.80	.07	1.87	12.40	.81	13.21
2030	10.60	.85	11.45	1.80	.07	1.87	12.40	.92	13.32
2035	10.60	.92	11.52	1.80	.08	1.88	12.40	1.00	13.40
2040	10.60	.96	11.56	1.80	.08	1.88	12.40	1.04	13.44
2045	10.60	1.00	11.60	1.80	.09	1.89	12.40	1.08	13.48
2050	10.60	1.04	11.64	1.80	.09	1.89	12.40	1.13	13.53
2055	10.60	1.09	11.69	1.80	.09	1.89	12.40	1.18	13.58
2060	10.60	1.15	11.75	1.80	.10	1.90	12.40	1.24	13.64
2065	10.60	1.21	11.81	1.80	.10	1.90	12.40	1.31	13.71
2070	10.60	1.28	11.88	1.80	.10	1.90	12.40	1.38	13.78
2075	10.60	1.34	11.94	1.80	.10	1.90	12.40	1.44	13.84
2080	10.60	1.40	12.00	1.80	.10	1.90	12.40	1.50	13.90

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

Table IV.B8.—Components of Summarized Income Rates and Cost Rates, Calendar Years 2002-76
[As a percentage of taxable payroll]

Valuation period	Income rate: Payroll tax	Income rate: Taxation of benefits	Income rate: Beginning fund balance	Income rate: Total	Cost rate: Disbursements	Cost rate: Ending fund balance	Cost rate: Total
OASI:							
Intermediate:							
2002-26	10.59	0.44	1.19	12.22	10.45	0.48	10.93
2002-51	10.59	.58	.71	11.88	12.38	.21	12.59
2002-76	10.59	.65	.55	11.79	13.21	.12	13.33
Low Cost:							
2002-26	10.59	.41	1.19	12.19	9.76	.42	10.18
2002-51	10.59	.51	.70	11.81	11.04	.17	11.21
2002-76	10.59	.55	.55	11.69	11.34	.09	11.43
High Cost:							
2002-26	10.59	.48	1.20	12.28	11.34	.55	11.89
2002-51	10.59	.67	.71	11.97	14.11	.27	14.38
2002-76	10.59	.78	.56	11.93	15.78	.17	15.95
DI:							
Intermediate:							
2002-26	1.80	.04	.16	1.99	1.96	.08	2.04
2002-51	1.80	.05	.09	1.94	2.14	.03	2.18
2002-76	1.80	.05	.07	1.92	2.24	.02	2.26
Low Cost:							
2002-26	1.80	.03	.16	1.98	1.63	.06	1.69
2002-51	1.80	.04	.09	1.93	1.68	.02	1.71
2002-76	1.80	.04	.07	1.91	1.71	.01	1.72
High Cost:							
2002-26	1.80	.05	.16	2.00	2.37	.10	2.48
2002-51	1.80	.06	.09	1.95	2.70	.05	2.75
2002-76	1.80	.07	.07	1.94	2.90	.03	2.93
OASDI:							
Intermediate:							
2002-26	12.39	.48	1.34	14.21	12.42	.56	12.98
2002-51	12.39	.63	.80	13.82	14.53	.24	14.77
2002-76	12.39	.70	.63	13.72	15.45	.14	15.59
Low Cost:							
2002-26	12.39	.44	1.34	14.17	11.39	.48	11.87
2002-51	12.39	.55	.80	13.74	12.73	.20	12.92
2002-76	12.39	.59	.62	13.60	13.05	.11	13.16
High Cost:							
2002-26	12.39	.53	1.36	14.28	13.71	.65	14.36
2002-51	12.39	.73	.80	13.92	16.81	.32	17.13
2002-76	12.39	.85	.63	13.87	18.68	.20	18.87

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

7. 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 IV.B9. Also shown are the estimated effects associated with each reason for change.

Table IV.B9.—Reasons for Change in the 75-Year Actuarial Balance Under Intermediate Assumptions
[As a percentage of taxable payroll]

Item	OASI	DI	Combined
Shown in last year's report:			
Income rate	11.68	1.90	13.58
Cost rate	13.21	2.23	15.44
Actuarial balance	-1.53	-.33	-1.86
Changes in actuarial balance due to changes in:			
Legislation / Regulation	.00	.00	.00
Valuation period[1]	-.06	-.01	-.07
Demographic assumptions	-.04	-.01	-.05
Economic assumptions	+.11	+.01	+.12
Disability assumptions	.00	+.03	+.03
Projection methods and data	-.01	-.03	-.04
Total change in actuarial balance	.00	-.01	-.01
Shown in this report:			
Actuarial balance	-1.54	-.34	-1.87
Income rate	11.79	1.92	13.72
Cost rate	13.33	2.26	15.59

[1] In changing from the valuation period of last year's report, which was 2001-75, to the valuation period of this report, 2002-76, the relatively large negative annual balance for 2076 is included. This results in a larger long-range actuarial deficit. The fund balance at the end of 2001, i.e., at the beginning of the projection period, is included in the 75-year actuarial balance.

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

Two legislative changes have been enacted since the last report that affect the financing of the Social Security program (see section III.B). The first change eliminates deemed wage credits for members of the uniformed armed services for all years after 2001. The second change is the reduction in marginal rates for Federal personal income taxes over the period 2001-10. This change will reduce the amount of revenue transferred from the General Fund of the Treasury to the trust funds based on taxation of benefits for these years. The combined effect of these changes is estimated to increase the OASDI actuarial deficit by a negligible amount (less than 0.005 percent of taxable payroll).

In changing from the valuation period of last year's report, which was 2001-75, to the valuation period of this report, 2002-76, the relatively large negative annual balance for 2076 is included. This results in a larger long-range actuarial deficit. (Note that the fund balance at the end of 2001, i.e., at the beginning of the projection period, is included in the 75-year actuarial balance.)

Ultimate demographic assumptions are unchanged except for the effect of modifications in the projection of death rates. Death rates were modified from last year's report in four ways. The first modification was to update mortality data for 1999, resulting in higher death rates for that year than were estimated in the 2001 report. The second modification was to consolidate

several cause-of-death categories that have become increasingly less significant into the *other* cause-of-death category. This reduces the number of such categories considered from 11 to 7. The third modification was to revise the historical time period used to determine the initial rates of change in death rates, replacing the average experience since 1968 with the average experience of the last 20 years. The fourth modification was to accelerate the transition from the initial rates of change in death rates to the ultimate assumed rates of change. In addition, starting levels of birth rates and the rates for transition years were updated based on preliminary data for 2000, which indicate a higher overall birth rate than was estimated for last year's report. The net effect of these demographic changes is an increase in the actuarial deficit of 0.05 percent of taxable payroll. The modifications in the projection of death rates resulted in a somewhat faster overall projected rate of improvement in death rates, thus increasing the actuarial deficit. However, this increase in the actuarial deficit was partially offset by the effects of updating birth rates.

Ultimate economic assumptions were changed from those used in last year's report to reflect an expectation of somewhat lower price inflation and higher growth rates in productivity and real earnings. The ultimate assumed rate of change in the CPI was reduced from 3.3 to 3.0 percent. The ultimate assumed rate of growth in productivity (for the total U.S. economy) was increased from 1.5 to 1.6 percent per year. The ultimate assumed real wage differential was increased from 1.0 to 1.1 percent. The reduction in the OASDI actuarial deficit as a result of the change in productivity and real wages was partially offset by the effect of lowering the assumed ultimate rate of price inflation. In addition, several changes in starting values for economic assumptions and the transition to ultimate assumptions combined to reduce (improve) the OASDI actuarial deficit. These include a longer transition from the relatively high productivity growth rate experienced between 1995 and 2000 to the ultimate assumed rate, and increased real interest rates over the first 10 years of the projection period based on recent experience. The net effect of these economic changes is a reduction in the actuarial deficit of 0.12 percent of taxable payroll.

Three significant changes affected disability assumptions. First, the ultimate disability incidence rates were lowered somewhat from the levels used in last year's report in order to bring the rates closer to the average experience of the last 30 years. Second, the period of transition from the historical age-sex-specific incidence and recovery rates to the ultimate age-sex-specific rates was extended from 15 to 20 years. These two changes tended to reduce the long-range actuarial deficit. The third change reflects a recent improvement in administrative procedures. In the past, some individuals receiving disabil-

ity payments under the Supplemental Security Income program were also (or later became) insured for DI disabled worker benefits, but this insured status was not recognized. With a change in administrative procedures to better identify the attainment of DI insured status of such individuals, the annual number of individuals awarded DI disability benefits will increase slightly, partially offsetting the effects of the first two changes on the actuarial deficit. The net effect of the three changes is a reduction in the actuarial deficit by 0.03 percent of taxable payroll.

Several methodological improvements and updates of program-specific data were made for projections in the 2002 report. First, an updated sample of new beneficiaries was used for projecting long-range average benefit levels. This sample better reflected individuals who continue to work with substantial earnings after becoming eligible for retired worker benefits and thus produced higher average benefit levels than those estimated in the prior report. This improved sample, alone, results in an increase in the long-range actuarial deficit of about 0.14 percent of payroll. Next, changes were made to the long-range projections of income from taxation of benefits. The changes were made to improve consistency with short-range estimates provided over the past year by the Office of Tax Analysis, Department of the Treasury. This change, alone, results in a decrease in the actuarial deficit of about 0.07 percent of payroll. Finally, a new method was developed for long-range projections of the percent of the population that is fully insured for the receipt of OASDI benefits based on their earnings. This change results in a decrease in the actuarial deficit of about 0.03 percent of payroll. Other changes and updates had small effects. Together these changes result in an increase in the actuarial deficit of 0.04 percent of taxable payroll.

If no changes in assumptions or methods were made for this report and actual experience had met expectations since the last report, the OASDI actuarial deficit would still be increased by 0.07 percent of taxable payroll from the level estimated for last year's report due to the change in the valuation period (see table IV.B9). The fact that the actuarial deficit is only 0.01 percent of payroll larger for this report therefore indicates that, on balance, changes in assumptions, methods, and experience have slightly improved the financial outlook.

The year in which the combined OASI and DI Trust Funds' assets are projected to become exhausted under the intermediate assumptions, 2041, is 3 years later than projected for last year's report. This is a relatively larger improvement than would be expected from the change in actuarial balance. The timing of the effects of changes made for this report creates this difference.

For example, two changes made for this report result in relatively large improvements in financing for years prior to projected trust fund exhaustion. First, improved economic assumptions, including higher short-range real interest rates and a longer transition period from recent high growth rates in productivity to the ultimate growth rate (which is itself higher for this report), disproportionately improve the financial status over the next two decades. Second, a methodological change was made to improve consistency between long-range estimates of revenue from taxation of OASDI benefits and short-range estimates made over the past year by the Department of the Treasury. This change results in a substantial increase in projected revenue that is largest in the decades immediately following the short-range period. These two changes share about equally in improving the financial status of the OASDI program over the next four decades and thus delaying the projected date of trust fund exhaustion.

In addition, two changes for this report result in less favorable financial status primarily in years after the projected date of trust fund exhaustion under the intermediate assumptions. The changes in mortality projections that result in higher ultimate rates of decline in death rates increase the cost of benefits most in the latter years of the projection period. The updated sample of new beneficiaries used for long-range projections of average benefit levels has a similar effect.

For the long-range period as a whole, the effect of all changes in this report that improve the OASDI financial status approximately balances the effect of all changes that worsen the financial status. However, due to the differences in timing of these effects, the net effect is an improvement in OASDI annual balances through 2044 for this report, followed by less favorable annual balances thereafter. As a result, the year of trust fund exhaustion is improved significantly, by 3 years, while the actuarial balance is nearly unchanged.

V. ASSUMPTIONS AND METHODS UNDERLYING ACTUARIAL ESTIMATES

The future income and outgo of the OASDI program will depend on many demographic, economic, and program-specific factors. Trust fund income will depend on how these factors affect the size and composition of the working population and the level and distribution of earnings. Similarly, trust fund outgo will depend on how these factors affect the size and composition of the beneficiary population and the general level of benefits.

Basic assumptions are developed for several of these factors based on analysis of historical trends and conditions, and on expected future conditions. These include fertility, mortality, immigration, marriage, divorce, productivity, inflation, average earnings, unemployment, retirement, and disability incidence and termination. Other factors are projected using methods that reflect historical and expected future relationships to the basic assumptions. These include total population, life expectancy, labor force, gross domestic product, interest rates, and a myriad of program-specific factors. It should be noted that all factors included in any consistent set of assumptions are interrelated directly or indirectly. It is also important to note that these interrelationships can and do change over time.

The assumptions and methods used in this report are reexamined each year in light of recent experience and new information about future conditions, and are revised if warranted.

Because projections of these factors and their interrelationships 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, 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 is the most optimistic, and the high cost is the most pessimistic.

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

The values for each of the demographic, economic, and program-specific 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 demographic and the economic factors are intended to represent average experience or growth rates. Actual future values will exhibit fluctuations or cyclical patterns, as in the past.

The following sections discuss in abbreviated form the various assumptions and methods required to make the estimates of trust fund financial status which are the heart of this report.[1] There are, of course, many interrelationships among these factors that make a sequential presentation somewhat misleading. Nevertheless, the following sections roughly follow the order used in building the trust fund estimates presented in chapter IV.

A. DEMOGRAPHIC ASSUMPTIONS AND METHODS

The principal demographic assumptions relating to fertility, mortality, and net immigration for the three alternatives are shown in table V.A1. The rationales for selecting these assumptions are discussed in the following three sections.

1. Fertility Assumptions

Fertility (birth rate) assumptions are developed by single year of age, from 14 to 49. They are applied to the total number of women in the population at each age, for all marital statuses.

Historically, fertility rates in the United States have fluctuated widely. The total fertility rate[2] 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 began to rise again, reaching a level of 2.07 for 1991. Since then, the total fertility rate has remained fairly stable.

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[1] 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. A complete list of available studies may be found on the Internet at http://www.ssa.gov/OACT/NOTES/actstud.html. To obtain copies of such Studies, or of this report, submit a request via our Internet request form; or write to: Office of the Chief Actuary, 700 Altmeyer Building, 6401 Security Boulevard, Baltimore, MD 21235; or call (410) 965-3015. This entire report, along with supplemental year-by-year tables, may also be found at http://www.ssa.gov/OACT/TR/TR02/index.html.

[2] 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. A rate of 2.1 would ultimately result in a nearly constant population if net immigration were zero and if death rates were constant.

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, 1.95, and 1.7 children per woman were selected for the low cost, intermediate, and high cost assumptions, respectively. For each alternative, the total fertility rate is assumed to gradually trend from the estimated level of 2.13 for 2000, reaching the selected ultimate level for 2026 and later.

2. Mortality Assumptions

Mortality (death rate) assumptions are developed by single year of age, sex, and cause of death.

Over the last century, death rates in the United States have declined substantially, but at varying rates. Historical rates (for years 1900-99) used in preparing this report were calculated for ages below 65 (and for all ages prior to 1968) using data from the National Center for Health Statistics (NCHS).[1] For ages 65 and over, Medicare final data were used for years 1968 through 1999. Also used are death rates by cause of death produced by the NCHS for years 1979-99.

The total age-sex-adjusted death rate[2] declined at an average rate[3] of 1.10 percent per year between 1900 and 1999. Between 1979 and 1999, the period for which death rates are analyzed by cause, the total age-sex-adjusted death rate (for all causes combined) declined at an average rate of 0.70 percent per year.

Historical death rates have declined more slowly for older ages than for the rest of the population. The age-sex-adjusted death rate for ages 65 and over declined at an average rate of 0.73 percent per year between 1900 and 1999. Between 1979 and 1999 the age-sex-adjusted death rate for these ages declined at an average annual rate of 0.42 percent.

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[1] These rates reflect NCHS data on deaths and Census estimates of population.

[2] 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.

[3] Average rate of decline is calculated as the average annual geometric rate of reduction between the first and last years of the period.

Reductions in death rates have resulted from many factors, including increased medical knowledge and availability of health-care services, and improvements in sanitation and nutrition. 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 2026 and later. The intermediate set, which is used for alternative II, is considered to be the most likely to occur. The average annual percentage reductions used for alternative I are generally smaller than those for alternative II, while those used for alternative III are generally greater.

After 1999, the reductions in central death rates for alternative II are assumed to change rapidly from the average annual reductions by age, sex, and cause of death observed between 1979 and 1999, to the ultimate annual percentage reductions by age, sex, and cause of death assumed for 2026 and later. The reductions in death rates under alternatives I and III are also assumed to change rapidly to their ultimate levels, but start from levels which are, respectively, 50 or 150 percent of the average annual reductions observed between 1979 and 1999.

Projections of age-sex-adjusted death rates are presented in table V.A1 for the total (all ages), for under age 65, and for ages 65 and over. For the first few years of the projection period, death rates for the total are slightly higher than those death rates in last year's report. New data for 1999 resulted in the estimation of starting mortality rates that are higher than those in last year's report. However, within the first 20 years, projected total death rates become smaller than those in last year's report because of revised methods that result in faster reduction during the early years of the projection period. Age-sex-adjusted mortality continues to decline faster than in last year's report because of these revised methods, even though the ultimate rates of decline in cause-specific mortality are the same as those used in last year's report.

After adjustment for changes in the age-sex distribution of the population, the resulting total death rates are projected to decline at ultimate average annual rates of about 0.35 percent, 0.73 percent, and 1.29 percent between 2026 and 2076 for alternatives I, II, and III, respectively. In keeping with the patterns observed in the historical data, future rates of decline are assumed to be greater for younger ages than for older ages, but to a lesser degree than in the past. Accordingly, age-sex-adjusted death rates for ages 65 and over are projected to decline at average annual rates of about 0.30 percent, 0.70 percent, and 1.23 percent between 2026 and 2076 for alternatives I, II, and III, respectively.

There is a wide range of opinion among experts on the likely rate of future decline in death rates. For example, the 1999 Technical Panel on Assumptions and Methods appointed by the Social Security Advisory Board believed that ultimate rates of decline in mortality will be higher than the rates of decline assumed for the intermediate projections in this report. Others believe that biological and social factors may slow future rates of decline in mortality. Evolving mortality trends and developments in health care and life style will be closely monitored to determine what further modifications to the assumed ultimate rates of decline in mortality may be warranted for future reports.

3. Immigration Assumptions

Legal immigration increased after World War II to around 300,000 persons per year and remained around that level until shortly after 1960. With the Immigration Act of 1965 and other related changes, annual legal immigration increased to about 400,000 and remained fairly stable until 1977. Between 1977 and 1990, legal immigration once again increased, averaging about 580,000[1] per year. The Immigration Act of 1990, which took effect in fiscal year 1992, restructured the immigration categories and increased significantly the number of immigrants who may legally enter the United States. Legal immigration averaged about 760,000[1] persons per year during the period 1990 through 1999. The number of legal immigrants in 2000 is estimated to be about 850,000 persons.

For calendar year 2000, net legal immigration (after considering emigration) is estimated to be about 640,000 persons. Net other-than-legal immigration is estimated to be 300,000 persons. For calendar year 2001, net legal immigration is estimated to be 620,000 persons and net other-than-legal is estimated to be 300,000 persons.

The total level of net immigration (legal and other-than-legal, combined) under the intermediate projection is assumed to be 900,000 persons[2] in 2002 and for each year afterward. For the low cost assumptions, net immigration is assumed to rise from a level of 1,140,000 persons in 2002 to an ultimate level of 1,210,000 persons[3] for each year 2003 and later. Under the high cost assumptions, net immigration is assumed to be 718,000 persons in 2002, and 655,000 persons[4] for each year after 2002.

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[1] Excludes those persons admitted under the Immigration Reform and Control Act of 1986.

[2] 600,000 net legal immigrants plus 300,000 net other-than-legal immigrants.

[3] 760,000 net legal immigrants plus 450,000 net other-than-legal immigrants.

[4] 455,000 net legal immigrants plus 200,000 net other-than-legal immigrants.

The levels of net immigration during 2001 to 2003 are slightly different from those used in last year's report. The ultimate levels of net immigration are the same as those assumed in last year's report.

Table V.A1.—Principal Demographic Assumptions, Calendar Years 1940-2080

Calendar year	Total fertility rate[1]	Age-sex-adjusted death rate[2] per 100,000, by age			Net immigration	
		Total	Under 65	65 and over	Legal[3]	Other-than-legal[4]
Historical data:						
1940	2.23	1,672.6	656.1	8,791.1		
1945	2.42	1,488.6	584.4	7,820.1		
1950	3.03	1,339.9	480.0	7,361.7	170,594	
1955	3.50	1,243.0	424.7	6,973.6	209,779	
1960	3.61	1,237.9	418.8	6,973.1	201,276	
1965	2.88	1,210.8	411.7	6,806.6	232,400	
1970	2.43	1,138.4	403.7	6,283.5	278,928	
1975	1.77	1,020.9	352.5	5,701.7	294,303	
1980	1.85	961.1	316.8	5,473.1	410,348	
1985	1.84	912.3	289.9	5,270.4	433,449	
1990	2.07	865.8	277.5	4,985.5	501,065	
1991	2.07	854.8	275.2	4,913.5	548,000	
1992	2.06	843.7	269.7	4,862.5	620,986	
1993	2.04	863.5	273.3	4,996.0	644,696	
1994	2.04	852.4	271.2	4,922.3	583,390	
1995	2.02	850.1	268.3	4,923.8	573,719	
1996	2.03	837.1	257.8	4,894.0	662,284	
1997	2.04	822.5	246.1	4,858.9	571,800	
1998	2.06	816.0	240.0	4,849.5	489,360	
1999	2.08	820.6	238.4	4,898.0	523,037	
2000[5]	2.13	812.4	238.1	4,834.1	637,358	300,000
2001[5]	2.13	808.2	235.5	4,818.6	620,000	300,000
Intermediate:						
2005	2.10	789.6	226.0	4,736.3	600,000	300,000
2010	2.07	759.8	215.1	4,574.3	600,000	300,000
2015	2.03	728.5	205.0	4,394.5	600,000	300,000
2020	1.99	698.1	195.6	4,217.3	600,000	300,000
2025	1.96	669.3	186.7	4,048.9	600,000	300,000
2030	1.95	642.2	178.4	3,890.1	600,000	300,000
2035	1.95	616.9	170.7	3,741.8	600,000	300,000
2040	1.95	593.2	163.4	3,603.0	600,000	300,000
2045	1.95	570.9	156.5	3,473.0	600,000	300,000
2050	1.95	550.0	150.0	3,351.1	600,000	300,000
2055	1.95	530.4	144.0	3,236.6	600,000	300,000
2060	1.95	511.9	138.2	3,128.9	600,000	300,000
2065	1.95	494.5	132.8	3,027.5	600,000	300,000
2070	1.95	478.1	127.7	2,931.9	600,000	300,000
2075	1.95	462.6	122.9	2,841.6	600,000	300,000
2080	1.95	447.9	118.3	2,756.2	600,000	300,000

Table V.A1.—Principal Demographic Assumptions, Calendar Years 1940-2080 (Cont.)

Calendar year	Total fertility rate[1]	Age-sex-adjusted death rate[2] per 100,000, by age			Net immigration	
		Total	Under 65	65 and over	Legal[3]	Other-than-legal[4]
Low Cost:						
2005	2.14	810.2	232.1	4,858.6	760,000	450,000
2010	2.15	801.4	226.5	4,827.0	760,000	450,000
2015	2.17	787.9	220.6	4,760.8	760,000	450,000
2020	2.18	773.2	214.7	4,684.7	760,000	450,000
2025	2.20	758.6	209.0	4,607.3	760,000	450,000
2030	2.20	744.2	203.5	4,530.7	760,000	450,000
2035	2.20	730.4	198.2	4,456.9	760,000	450,000
2040	2.20	717.1	193.2	4,385.8	760,000	450,000
2045	2.20	704.4	188.4	4,317.2	760,000	450,000
2050	2.20	692.1	183.8	4,251.1	760,000	450,000
2055	2.20	680.2	179.4	4,187.3	760,000	450,000
2060	2.20	668.8	175.2	4,125.8	760,000	450,000
2065	2.20	657.9	171.1	4,066.4	760,000	450,000
2070	2.20	647.3	167.2	4,009.1	760,000	450,000
2075	2.20	637.1	163.5	3,953.7	760,000	450,000
2080	2.20	627.2	159.8	3,900.2	760,000	450,000
High Cost:						
2005	2.06	768.5	219.4	4,613.6	455,000	200,000
2010	1.98	716.1	201.7	4,318.6	455,000	200,000
2015	1.90	665.3	185.7	4,023.6	455,000	200,000
2020	1.81	618.0	171.2	3,746.4	455,000	200,000
2025	1.72	574.6	158.1	3,491.4	455,000	200,000
2030	1.70	534.9	146.0	3,257.7	455,000	200,000
2035	1.70	498.7	135.1	3,044.7	455,000	200,000
2040	1.70	465.6	125.1	2,850.2	455,000	200,000
2045	1.70	435.4	115.9	2,672.4	455,000	200,000
2050	1.70	407.7	107.6	2,509.7	455,000	200,000
2055	1.70	382.4	99.9	2,360.6	455,000	200,000
2060	1.70	359.1	92.8	2,223.7	455,000	200,000
2065	1.70	337.7	86.3	2,097.8	455,000	200,000
2070	1.70	318.0	80.3	1,982.0	455,000	200,000
2075	1.70	299.8	74.8	1,875.2	455,000	200,000
2080	1.70	283.1	69.8	1,776.7	455,000	200,000

[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 2026.

[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] Historical estimates of net legal immigration assume a 25 percent reduction in legal immigration due to legal emigration. Estimates do not include persons legalized under the Immigration Reform and Control Act of 1986.

[4] Other-than-legal net immigration is estimated to average between 225,000 and 300,000 persons per year over the period 1980-99.

[5] Preliminary or estimated.

4. Total Population Estimates

Combining the above assumptions for future fertility, mortality, and net immigration with assumptions on marriage and divorce based on data from NCHS, projections were made of the population in the Social Security area

by age, sex, and marital status as of January 1 of each year 2001 through 2080. The starting Social Security area population for January 1, 2000, uses as a basis the Census Bureau's estimate of the residents of the 50 States and D.C., and U.S. Armed Forces overseas. This base estimate is adjusted for net census undercount and increased for other U.S. citizens living abroad (including residents of U.S. territories) and for non-citizens living abroad who are insured for Social Security benefits. This starting population was then projected using assumed rates of birth, death, marriage and divorce, and assumed levels of migration.

Table V.A2 shows the projected population as of July 1 by broad age group, for the three alternatives. Also shown are tabulated aged and total dependency ratios (see table footnotes for definitions).

Table V.A2.—Social Security Area Population as of July 1 and Dependency Ratios, Calendar Years 1950-2080

	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	19,092	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	235,150	.195	.749
1985	73,248	144,897	29,065	247,210	.201	.706
1990	75,172	152,973	32,036	260,181	.209	.701
1995	79,251	159,850	34,549	273,649	.216	.712
2000	82,009	168,251	35,516	285,776	.211	.699
Intermediate:						
2005	83,762	177,786	36,571	298,119	.206	.677
2010	84,734	185,950	39,481	310,164	.212	.668
2015	85,511	191,150	45,509	322,169	.238	.685
2020	86,998	193,569	53,150	333,718	.275	.724
2025	87,927	194,431	61,956	344,315	.319	.771
2030	88,619	195,606	69,408	353,633	.355	.808
2035	89,100	199,182	73,498	361,779	.369	.816
2040	89,642	204,018	75,177	368,836	.368	.808
2045	90,425	208,299	76,323	375,046	.366	.801
2050	91,392	211,107	78,272	380,770	.371	.804
2055	92,217	213,253	80,973	386,444	.380	.812
2060	92,897	215,086	84,356	392,338	.392	.824
2065	93,539	217,539	87,372	398,450	.402	.832
2070	94,249	219,610	90,646	404,506	.413	.842
2075	95,031	221,585	93,642	410,258	.423	.851
2080	95,823	223,259	96,545	415,626	.432	.862

Table V.A2.—Social Security Area Population as of July 1 and Dependency Ratios, Calendar Years 1950-2080 (Cont.)

Calendar year	Population (in thousands)				Dependency ratio	
	Under 20	20-64	65 and over	Total	Aged[1]	Total[2]
Low Cost:						
2005	84,302	178,428	36,514	299,244	0.205	0.677
2010	86,465	187,615	39,186	313,266	.209	.670
2015	89,023	193,878	44,836	327,737	.231	.690
2020	92,906	197,426	51,959	342,290	.263	.734
2025	96,721	199,673	60,069	356,463	.301	.785
2030	100,425	202,790	66,648	369,864	.329	.824
2035	103,748	208,888	69,792	382,428	.334	.831
2040	107,077	216,795	70,604	394,475	.326	.820
2045	110,634	224,693	71,124	406,451	.317	.809
2050	114,429	231,639	72,714	418,782	.314	.808
2055	118,312	238,303	75,195	431,809	.316	.812
2060	122,110	245,209	78,329	445,648	.319	.817
2065	125,850	253,339	80,975	460,164	.320	.816
2070	129,653	261,565	83,863	475,080	.321	.816
2075	133,593	269,840	86,791	490,224	.322	.817
2080	137,638	277,873	90,073	505,584	.324	.819
High Cost:						
2005	83,294	177,290	36,633	297,217	.207	.676
2010	83,198	184,684	39,801	307,682	.216	.666
2015	82,377	189,111	46,262	317,750	.245	.680
2020	81,699	190,729	54,529	326,957	.286	.714
2025	80,035	190,540	64,198	334,774	.337	.757
2030	78,084	190,133	72,746	340,963	.383	.793
2035	76,162	191,611	78,053	345,825	.407	.805
2040	74,480	193,839	80,913	349,232	.417	.802
2045	73,205	194,985	83,053	351,243	.426	.801
2050	72,193	194,177	85,769	352,139	.442	.813
2055	70,915	192,424	89,080	352,419	.463	.831
2060	69,507	189,949	93,045	352,500	.490	.856
2065	68,163	187,663	96,706	352,531	.515	.879
2070	66,989	184,714	100,603	352,306	.545	.907
2075	65,940	181,717	103,888	351,546	.572	.935
2080	64,925	178,542	106,636	350,103	.597	.961

[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.

5. Life Expectancy Estimates

Life expectancy, or average remaining number of years expected prior to death, is a useful analytical concept. Life expectancy is calculated in two different forms, for two separate purposes.

Period life expectancy is calculated for a given year using the actual or expected death rates at each age for that year. It is a useful summary statistic for illustrating the overall level of the death rates experienced in a single year. It is thus closely related to the age-sex-adjusted death rate that is discussed in section V.A.2. Period life expectancy for a particular year may be

viewed as the expected remaining life at a selected age *only* if it is assumed that there is no change in death rates after that year.

Cohort life expectancy truly answers the question "What is the expected average remaining lifetime for an individual at a selected age in a given year?" Cohort life expectancies are calculated using death rates not from a single year, but from the series of years in which the individual will actually reach each succeeding age if he or she survives.

Tables V.A3 and V.A4 present historical and projected life expectancies calculated on both period and cohort bases. Cohort life expectancies are somewhat greater than period life expectancies for the same year. This is because death rates for any given age tend to decline as time passes and the cohort grows older.

Table V.A3.—Period Life Expectancies[1]

Calendar year	Low Cost				Intermediate				High Cost			
	At birth		At age 65		At birth		At age 65		At birth		At age 65	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Historical data:												
1940					61.4	65.7	11.9	13.4				
1945					62.9	68.4	12.6	14.4				
1950					65.6	71.1	12.8	15.1				
1955					66.7	72.8	13.1	15.6				
1960					66.7	73.2	12.9	15.9				
1965					66.8	73.8	12.9	16.3				
1970					67.2	74.9	13.1	17.1				
1975					68.7	76.6	13.7	18.0				
1980					69.9	77.5	14.0	18.4				
1985					71.1	78.2	14.4	18.6				
1990					71.8	78.9	15.0	19.0				
1991					71.9	79.0	15.1	19.1				
1992					72.2	79.2	15.2	19.2				
1993					72.0	78.9	15.1	19.0				
1994					72.2	79.0	15.3	19.0				
1995					72.4	79.0	15.3	19.0				
1996					72.8	79.1	15.4	19.0				
1997					73.3	79.3	15.5	19.1				
1998					73.5	79.3	15.6	19.0				
1999					73.6	79.2	15.7	18.9				
2000[2] . . .					73.7	79.4	15.7	19.0				
2001[2] . . .					73.8	79.4	15.8	19.0				
Projected:												
2005	74.0	79.4	15.9	18.9	74.3	79.7	16.0	19.1	74.6	80.0	16.2	19.4
2010	74.2	79.5	16.0	18.9	74.9	80.1	16.4	19.4	75.6	80.8	16.8	19.9
2015	74.5	79.7	16.1	19.0	75.5	80.6	16.7	19.7	76.6	81.5	17.4	20.4
2020	74.8	80.0	16.2	19.2	76.0	81.0	17.0	20.0	77.5	82.3	17.9	21.0
2025	75.1	80.2	16.4	19.3	76.5	81.5	17.3	20.3	78.4	83.1	18.5	21.5
2030	75.4	80.4	16.5	19.4	77.1	81.9	17.7	20.6	79.2	83.8	19.1	22.1
2035	75.6	80.6	16.6	19.6	77.6	82.3	18.0	20.9	80.0	84.6	19.6	22.6
2040	75.9	80.8	16.7	19.7	78.0	82.8	18.3	21.2	80.8	85.3	20.1	23.1
2045	76.1	81.0	16.9	19.8	78.5	83.2	18.6	21.5	81.6	85.9	20.7	23.6
2050	76.4	81.2	17.0	19.9	79.0	83.5	18.8	21.8	82.4	86.6	21.2	24.1
2055	76.6	81.4	17.1	20.0	79.4	83.9	19.1	22.1	83.1	87.2	21.7	24.6
2060	76.9	81.6	17.2	20.2	79.8	84.3	19.4	22.4	83.8	87.8	22.2	25.1
2065	77.1	81.8	17.3	20.3	80.3	84.6	19.7	22.6	84.5	88.4	22.7	25.6
2070	77.3	81.9	17.4	20.4	80.7	85.0	19.9	22.9	85.1	89.0	23.1	26.0
2075	77.5	82.1	17.5	20.5	81.1	85.3	20.2	23.1	85.7	89.5	23.6	26.5
2080	77.7	82.3	17.6	20.6	81.4	85.6	20.4	23.4	86.4	90.1	24.1	26.9

[1] The period life expectancy at a given age for a given year represents the average number of years of life remaining if a group of persons at that age were to experience the mortality rates for that year over the course of their remaining lives.
[2] Preliminary or estimated.

Table V.A4.—Cohort Life Expectancies[1]

Calendar year	Low Cost				Intermediate				High Cost			
	At birth		At age 65[2]		At birth		At age 65[2]		At birth		At age 65[2]	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1940	68.9	75.3	12.7	14.7	69.4	76.0	12.7	14.7	69.9	76.7	12.7	14.7
1945	70.3	76.6	13.0	15.4	71.0	77.5	13.0	15.4	71.9	78.5	13.0	15.4
1950	71.3	77.6	13.1	16.2	72.2	78.7	13.1	16.2	73.4	80.1	13.1	16.2
1955	71.8	78.1	13.1	16.7	73.0	79.4	13.1	16.7	74.4	81.0	13.1	16.7
1960	72.2	78.4	13.2	17.4	73.6	79.9	13.2	17.4	75.4	81.9	13.2	17.4
1965	72.8	78.7	13.5	18.0	74.4	80.5	13.5	18.0	76.6	82.7	13.5	18.0
1970	73.5	79.3	13.8	18.5	75.4	81.3	13.8	18.5	78.0	83.9	13.8	18.5
1975	74.2	79.8	14.2	18.7	76.3	82.0	14.2	18.7	79.2	84.9	14.2	18.8
1980	74.8	80.2	14.7	18.8	77.2	82.6	14.7	18.8	80.5	85.9	14.7	18.9
1985	75.3	80.6	15.1	18.9	77.9	83.2	15.2	19.0	81.5	86.8	15.3	19.1
1990	75.6	80.9	15.5	18.9	78.5	83.7	15.6	19.2	82.5	87.6	15.8	19.4
1991	75.7	80.9	15.6	18.9	78.6	83.8	15.7	19.2	82.7	87.7	15.9	19.5
1992	75.8	81.0	15.6	18.9	78.8	83.9	15.8	19.2	82.9	87.9	16.0	19.6
1993	75.9	81.1	15.7	19.0	78.9	84.0	15.9	19.3	83.1	88.0	16.1	19.6
1994	76.0	81.1	15.7	19.0	79.0	84.1	16.0	19.3	83.3	88.2	16.2	19.7
1995	76.0	81.2	15.8	19.0	79.2	84.2	16.0	19.4	83.5	88.4	16.3	19.8
1996	76.1	81.2	15.8	19.0	79.3	84.3	16.1	19.4	83.7	88.5	16.5	19.9
1997	76.2	81.3	15.9	19.0	79.4	84.4	16.2	19.5	83.8	88.7	16.6	20.0
1998	76.2	81.3	15.9	19.0	79.5	84.4	16.3	19.5	84.0	88.8	16.7	20.1
1999	76.3	81.4	16.0	19.0	79.6	84.5	16.4	19.6	84.2	88.9	16.8	20.2
2000	76.4	81.4	16.0	19.1	79.7	84.6	16.4	19.7	84.4	89.1	17.0	20.3
2001	76.4	81.5	16.0	19.1	79.8	84.7	16.5	19.7	84.5	89.2	17.1	20.4
2005	76.6	81.6	16.1	19.2	80.2	85.0	16.8	20.0	85.2	89.8	17.6	20.9
2010	76.9	81.8	16.3	19.3	80.7	85.4	17.1	20.3	86.0	90.5	18.2	21.5
2015	77.1	82.0	16.4	19.4	81.1	85.8	17.5	20.6	86.7	91.1	18.8	22.1
2020	77.4	82.2	16.5	19.5	81.5	86.1	17.8	20.9	87.4	91.7	19.4	22.7
2025	77.6	82.4	16.6	19.7	82.0	86.5	18.1	21.3	88.1	92.2	20.0	23.2
2030	77.8	82.6	16.8	19.8	82.4	86.8	18.4	21.6	88.7	92.8	20.6	23.8
2035	78.1	82.7	16.9	19.9	82.7	87.1	18.7	21.9	89.4	93.3	21.1	24.3
2040	78.3	82.9	17.0	20.0	83.1	87.5	19.0	22.2	90.0	93.9	21.7	24.9
2045	78.5	83.1	17.1	20.2	83.5	87.8	19.3	22.4	90.6	94.4	22.2	25.4
2050	78.7	83.2	17.2	20.3	83.8	88.1	19.6	22.7	91.1	94.9	22.8	25.9
2055	78.9	83.4	17.4	20.4	84.2	88.3	19.9	23.0	91.7	95.3	23.3	26.4
2060	79.1	83.5	17.5	20.5	84.5	88.6	20.2	23.2	92.3	95.8	23.8	26.9
2065	79.2	83.7	17.6	20.6	84.9	88.9	20.4	23.5	92.8	96.3	24.3	27.3
2070	79.4	83.8	17.7	20.7	85.2	89.2	20.7	23.8	93.3	96.7	24.8	27.8
2075	79.6	83.9	17.8	20.8	85.5	89.4	20.9	24.0	93.8	97.2	25.2	28.3
2080	79.8	84.1	17.9	20.9	85.8	89.7	21.2	24.2	94.3	97.6	25.7	28.7

[1] The cohort life expectancy at a given age for a given year represents the average number of years of life remaining if a group of persons at that age were to experience the mortality rates for the series of years in which they reach each succeeding age.
[2] Age 65 cohort life expectancies are based on actual data prior to 1970.

B. ECONOMIC ASSUMPTIONS AND METHODS

The basic economic assumptions are embodied in three alternatives that are designed to vary Social Security's financial status, and illustrate the likely range of outcomes that might be encountered. The intermediate assumptions reflect the Trustees' consensus expectation of moderate economic growth throughout the projection period. The low cost assumptions represent a more optimistic outlook, with relatively strong economic growth. The high cost assumptions represent a relatively pessimistic forecast, with weak economic growth and two recessions in the short-range period. Economic cycles are not included in the 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. Based on the latest estimates, the economy is assumed to be in recession in the latter half of 2001.

The following sections 1 through 4 discuss the basic economic assumptions that are summarized in table V.B1. The subsequent sections 5 through 7 discuss additional economic factors, summarized in table V.B2, that are critical to the projections of the future financial status of the combined OASI and DI Trust Funds.

1. Productivity Assumptions

Total U.S. economy productivity is defined as the ratio of real gross domestic product (GDP) to hours worked by all workers.[1] The rate of change in total productivity is a major determinant in the growth of average earnings. For the 40 years from 1960 to 2000, annual increases in total productivity averaged 1.8 percent, the result of average annual increases of 2.7, 1.6, 1.4, and 1.6 percent for the 10-year periods 1960-70, 1970-80, 1980-90 and 1990-2000, respectively. The ultimate annual increases in productivity are assumed to be 1.9, 1.6, and 1.3 percent for the low cost, intermediate, and high cost assumptions, respectively. These are 0.1 percentage point higher than the ultimate rates assumed for the 2001 report. This increase reflects ongoing assessment of historical data, including the period of rapid productivity growth between 1995 and 2000.

For the intermediate assumptions, the annual change in productivity is assumed to increase from 1.3 percent in 2001 to 1.4 percent for 2002, and to 2.7 percent for 2003. This pattern reflects an assumed recession in the latter

[1] Historical levels of real GDP are from the Bureau of Economic Analysis' (BEA) National Income and Product Accounts (NIPA). Historical total hours worked is an unpublished series provided by the Bureau of Labor Statistics (BLS), and is for all civilian and military wage and salary workers and the self-employed.

half of 2001, followed by gradually accelerating economic growth through 2003. Thereafter, the annual change in productivity gradually decreases to the ultimate assumed level of 1.6 percent by 2009. For the low cost assumptions, the annual change in productivity increases from 1.3 percent in 2001 to 1.9 percent for 2002, and to 3.0 percent for 2003, reflecting the improving economy. Thereafter, the annual change in productivity decreases gradually to the ultimate assumed level of 1.9 percent by 2009. For the high cost assumptions, the annual change in productivity increases from 1.2 percent in 2001 and 2002 to 2.7 percent for 2003. Thereafter, the annual change in productivity varies with the business cycle until reaching its ultimate growth rate of 1.3 percent for 2011.

2. Inflation Assumptions

Future changes in the Consumer Price Index for Urban Wage Earners and Clerical Workers (hereafter denoted as CPI) will directly affect the OASDI program through the automatic cost-of-living benefit increases. Future changes in the GDP chain-type price index (hereafter, the GDP deflator) may affect the nominal levels of the GDP, wages, self-employment income, average earnings, and the taxable payroll.

Historically, the CPI has increased by an average of 4.4 percent for the 40 years from 1960 to 2000, the result of average annual increases of 2.8, 7.8, 4.5, and 2.7 percent for the 10-year periods 1960-70, 1970-80, 1980-90 and 1990-2000, respectively. The GDP deflator has increased by 4.0 percent for 1960 to 2000, and by 2.7, 7.0, 4.3, and 2.1 percent annually for the same respective 10-year periods. It should be noted that several methodological changes made by the Bureau of Labor Statistics in methods for computing the CPI since 1995 will tend to reduce the difference between the growth rates of these indices in the future.

The ultimate annual increases in the CPI are assumed to be 2.0, 3.0, and 4.0 percent for the low cost, intermediate, and high cost assumptions, respectively. For each alternative, the ultimate annual increase in the GDP deflator is assumed to be equal to the sum of the annual increases in the CPI and a -0.2 percentage price differential. This differential is based primarily on methodological differences in the construction of the two indices. Hence, for the intermediate assumptions, the ultimate annual increase in the GDP deflator is 2.8 percent, the sum of the 3.0 percent assumed ultimate annual increase in the CPI and the -0.2 percent price differential. Similarly, the ultimate annual increases in the GDP deflator are 1.8 and 3.8 percent for the low cost and high cost assumptions, respectively. The assumed ultimate annual rates of increase in the CPI and the GDP deflator for each alternative are

0.3 percentage point lower than those used in the 2001 report. This change is based on the expectation that national policies that have resulted in relatively low inflation over the past decade will continue, generally, in the future.

For the intermediate assumptions, the annual change in the CPI is assumed to decrease from 2.8 percent in 2001 to 1.3 percent for 2002, then increase sharply to 2.5 percent for 2003 as the economy recovers from recession. Thereafter, the annual change in the CPI increases gradually to the assumed ultimate rate of 3.0 percent as of 2006. For the low cost assumptions, the annual change in the CPI decreases from 2.8 percent in 2001 to 1.2 percent for 2002, then increases to the assumed ultimate rate of 2.0 percent for 2003. For the high cost assumptions, the annual change in the CPI decreases from 2.8 percent in 2001 to 1.4 percent for 2002, and reaches its assumed ultimate rate of 4.0 percent as of 2009. For all three alternatives, the price differential, defined as the percent change in the GDP deflator less the CPI percent change, is -0.5 percentage point in 2001. The projected price differential for 2002 is 0.3 percentage point for the low cost and intermediate assumptions, and 0.1 percentage point for the high cost assumptions. The positive values for 2002 mostly reflect the effect of the actual historical decline in oil prices on the two inflation measures during the latter half of 2001. For all three alternatives, the price differential is -0.6 percentage point for 2003 and is projected to move smoothly toward -0.2 percentage point as of 2011.

3. Average Earnings Assumptions

The level of average (nominal) earnings in OASDI covered employment for each year has a direct effect on the size of the taxable payroll and on the future level of average benefits. In addition, increases in the level of average wages in the U.S. economy directly affect the indexation, under the automatic-adjustment provisions in the law, of the OASDI 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.

These concepts are closely linked to average U.S. earnings, defined as the ratio of the sum of total U.S. wage and salary disbursements and proprietor income to the sum of total U.S. military and total civilian (household) employment. The growth rates in average U.S. earnings can be broken down into the growth rates for total U.S. economy productivity and the GDP price index (see previous two sections), and the growth rates for other components, including average hours worked, the ratio of earnings to compensation (which includes fringe benefits), and the ratio of compensation to GDP.

Over the last 40 years, the average annual change in average hours worked was -0.1 percent, the result of annual average changes of -0.3, -0.6, 0.0, and 0.4 percent for the 10-year periods 1960-70, 1970-80, 1980-90 and 1990-2000, respectively. Some of the recent increase in the average percent change in average hours worked is believed to be associated with changes in the distribution of employment by age/sex and by educational attainment. In the future, these distributions are expected to largely stabilize. The average annual change in the ratio of earnings to compensation was -0.2 percent from 1960 to 2000. The assumed ultimate annual rates of change are 0.0, -0.1, and -0.2 percent for average hours worked, and -0.1, -0.2, and -0.3 percent for the ratio of earnings to compensation, for the low cost, intermediate, and high cost assumptions, respectively. The ratio of compensation to GDP is assumed to be stable.

The assumed ultimate annual growth rates in the average wage in OASDI covered employment (henceforth the average covered wage) are 3.6, 4.1, and 4.6 percent for the low cost, intermediate, and high cost assumptions, respectively. For the intermediate assumptions, the annual rate of change in the average covered wage is assumed to drop from the estimated 5.6 percent increase in 2001 to 3.1 percent for 2002, then rise to 4.9 percent for 2003, as the economy recovers from recession. For 2004 and later, the annual rate of change in the average covered wage is assumed to remain approximately constant at the assumed ultimate annual growth rate of 4.1 percent. (See table V.B1 for historical and assumed future values.)

The average annual growth rates in average U.S. earnings and average earnings in OASDI covered employment are expected to be very similar to the average annual growth rates in the average covered wage over long periods of time. Thus, the ultimate projected annual growth rate in average U.S. earnings is 4.1 percent for the intermediate assumptions. This reflects assumed ultimate annual growth rates of about 1.6, -0.2, -0.1, and 2.8 percent for productivity, the ratio of earnings to compensation, average hours worked, and the GDP deflator, respectively. Similarly, the ultimate projected annual growth rate in average nominal U.S. earnings is 3.6 percent for the low cost assumptions and 4.6 percent for the high cost assumptions.

4. Assumed Real-Wage Differentials

For simplicity, real increases in the average covered wage have traditionally been expressed in the form of real-wage differentials—i.e., the percentage increase in the average covered wage minus the percentage increase in the CPI. This differential is closely related to assumed growth rates in average earnings and productivity, which are discussed in the previous subsection.

Over the 40-year period, 1961-2000, the real-wage differential averaged 1.1 percentage points, the result of averages of 1.8, -0.2, 1.2, and 1.8 percentage points for the 10-year periods 1961-70, 1971-80, 1981-90 and 1991-2000, respectively. The assumed ultimate annual average covered real-wage differentials are 1.6, 1.1, and 0.6 percentage point(s) for the low cost, intermediate, and high cost assumptions, respectively.

Based on preliminary data, the real-wage differential was 2.8 percentage points in 2001. For the intermediate assumptions, the real-wage differential is projected to fall to about 1.8 percentage points for 2002, then rise to 2.4 percentage points for 2003 as the economy recovers from recession. The real-wage differential is projected to fall to 1.5 percentage points for 2004, 1.2 percentage points for 2005 and 2006, and to about the ultimate assumed differential of 1.1 percentage points (4.1 percent nominal wage growth less 3.0 percent CPI inflation) for 2007 and thereafter.

For the low cost assumptions, the real-wage differential is assumed to be in the range of 1.3 percentage points to 2.7 percentage points between 2002 and 2010, remaining at about the ultimate assumed real-wage differential of 1.6 percentage points thereafter. For the high cost assumptions, the real-wage differential for the short-range period is projected to fluctuate between -1.6 and 2.3 percentage points, eventually stabilizing at about 0.6 percentage point for 2011 and later.

Table V.B1.—Principal Economic Assumptions

Calendar year	Average annual percentage increase in— Productivity (Total U.S. economy)	Earnings as a percent of compensation	Average hours worked	GDP price index	Average annual wage in covered employment	Consumer Price Index[2]	Real-wage differential[1]
Historical data:							
1960 to 1965. . . .	3.4	-0.2	0.0	1.4	3.2	1.2	2.0
1965 to 1970. . . .	1.9	-.4	-.7	4.1	5.8	4.2	1.6
1970 to 1975. . . .	2.1	-.7	-.9	6.6	6.6	6.8	-.1
1975 to 1980. . . .	1.0	-.6	-.2	7.3	8.7	8.9	-.2
1980 to 1985. . . .	1.6	-.2	-.1	5.3	6.7	5.2	1.4
1985 to 1990. . . .	1.2	.0	.0	3.3	4.7	3.8	.9
1990 to 1995. . . .	1.1	-.1	.3	2.5	3.4	3.0	.4
1995 to 2000. . . .	2.1	.7	.4	1.8	5.6	2.4	3.2
1991	1.1	-.5	-.6	3.6	3.0	4.1	-1.1
1992	2.9	.2	-.4	2.4	4.9	2.9	2.0
1993	.3	-1.0	1.0	2.4	1.9	2.8	-.9
1994	1.1	-.4	.7	2.1	3.4	2.5	1.0
1995	.4	1.0	.9	2.2	4.0	2.9	1.1
1996	2.2	1.2	.0	1.9	4.5	2.9	1.6
1997	1.6	1.2	.6	1.9	6.0	2.3	3.7
1998	1.9	.4	.9	1.2	5.7	1.3	4.4
1999	2.1	.2	.5	1.4	5.4	2.2	3.2
2000	2.7	.4	.2	2.3	6.6	3.5	3.1
2001	1.3	.2	-.2	2.3	5.6	2.8	2.8
Intermediate:							
2002	1.4	.0	.2	1.5	3.1	1.3	1.8
2003	2.7	.0	.1	2.0	4.9	2.5	2.4
2004	2.1	-.1	.1	2.2	4.2	2.7	1.5
2005	2.0	-.1	.0	2.5	4.1	2.9	1.2
2006	1.9	-.1	.0	2.6	4.2	3.0	1.2
2007	1.9	-.1	.0	2.6	4.1	3.0	1.1
2008	1.7	-.1	.0	2.7	4.0	3.0	1.0
2009	1.6	-.2	-.1	2.7	4.0	3.0	1.0
2010	1.6	-.2	-.1	2.8	4.1	3.0	1.0
2011	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2015	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2020	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2025	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2030	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2035	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2040	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2045	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2050	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2055	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2060	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2065	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2070	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2075	1.6	-.2	-.1	2.8	4.1	3.0	1.1
2080	1.6	-.2	-.1	2.8	4.1	3.0	1.1

Table V.B1.—Principal Economic Assumptions (Cont.)

Calendar year	Average annual percentage increase in—						Real-wage differential[1]
	Productivity (Total U.S. economy)	Earnings as a percent of compensation	Average hours worked	GDP price index	Average annual wage in covered employment	Consumer Price Index[2]	
Low Cost:							
2002	1.9	0.0	.2	1.4	3.7	1.2	2.6
2003	3.0	.0	.0	1.4	4.7	2.0	2.7
2004	2.5	-.1	.0	1.5	4.0	2.0	2.0
2005	2.1	-.1	.0	1.5	3.4	2.0	1.4
2006	2.1	.0	.0	1.6	3.3	2.0	1.3
2007	2.0	-.1	.0	1.6	3.3	2.0	1.3
2008	2.0	-.1	.0	1.7	3.4	2.0	1.4
2009	1.9	-.1	.0	1.7	3.5	2.0	1.5
2010	1.9	-.1	.0	1.8	3.5	2.0	1.5
2011	1.9	-.1	.0	1.8	3.6	2.0	1.6
2015	1.9	-.1	.0	1.8	3.6	2.0	1.6
2020	1.9	-.1	.0	1.8	3.5	2.0	1.5
2025	1.9	-.1	.0	1.8	3.6	2.0	1.6
2030	1.9	-.1	.0	1.8	3.6	2.0	1.6
2035	1.9	-.1	.0	1.8	3.6	2.0	1.6
2040	1.9	-.1	.0	1.8	3.6	2.0	1.6
2045	1.9	-.1	.0	1.8	3.6	2.0	1.6
2050	1.9	-.1	.0	1.8	3.6	2.0	1.6
2055	1.9	-.1	.0	1.8	3.6	2.0	1.6
2060	1.9	-.1	.0	1.8	3.6	2.0	1.6
2065	1.9	-.1	.0	1.8	3.6	2.0	1.6
2070	1.9	-.1	.0	1.8	3.6	2.0	1.6
2075	1.9	-.1	.0	1.8	3.6	2.0	1.6
2080	1.9	-.1	.0	1.8	3.6	2.0	1.6
High Cost:							
2002	1.2	-.1	.1	1.6	2.5	1.4	1.0
2003	2.7	-.1	-.2	2.6	5.5	3.2	2.3
2004	1.7	-.2	-.2	4.1	5.4	4.6	.8
2005	.1	-.3	-.2	5.4	4.3	5.8	-1.6
2006	1.9	-.3	-.2	5.3	5.7	5.8	-.1
2007	2.0	-.2	-.2	4.5	6.4	4.9	1.5
2008	1.2	-.3	-.2	3.8	4.6	4.1	.5
2009	1.2	-.3	-.2	3.7	4.3	4.0	.3
2010	1.2	-.3	-.2	3.8	4.4	4.0	.4
2011	1.3	-.3	-.2	3.8	4.5	4.0	.5
2015	1.3	-.3	-.2	3.8	4.6	4.0	.6
2020	1.3	-.3	-.2	3.8	4.6	4.0	.6
2025	1.3	-.3	-.2	3.8	4.6	4.0	.6
2030	1.3	-.3	-.2	3.8	4.6	4.0	.6
2035	1.3	-.3	-.2	3.8	4.6	4.0	.6
2040	1.3	-.3	-.2	3.8	4.6	4.0	.6
2045	1.3	-.3	-.2	3.8	4.6	4.0	.6
2050	1.3	-.3	-.2	3.8	4.6	4.0	.6
2055	1.3	-.3	-.2	3.8	4.6	4.0	.6
2060	1.3	-.3	-.2	3.8	4.6	4.0	.6
2065	1.3	-.3	-.2	3.8	4.6	4.0	.6
2070	1.3	-.3	-.2	3.8	4.6	4.0	.6
2075	1.3	-.3	-.2	3.8	4.6	4.0	.6
2080	1.3	-.3	-.2	3.8	4.6	4.0	.6

[1] 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.

[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).

5. Labor Force and Unemployment Projections

The civilian labor force is projected by age, sex, marital status, and presence of children. Projections of the labor force participation rates for each subgroup take into account the percentages of the population that are disabled or in the military, the levels of Social Security retirement benefits, and the state of the economy. The projections also include a "lagged-cohort effect" that applies changes in participation rates for a cohort at a specific age (relative to earlier cohorts at the same age) to participation rates for that cohort at older ages.

The annual rate of growth in the size of the labor force decreased from an average of about 2.1 percent during the 1970s and 1980s to about 1.1 percent from 1990 to 2000. Further slowing of labor force growth is projected due to a substantial slowing of growth in the working age population in the future—a 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 a change from relatively rapid growth in older female labor force participation rates to virtually no growth by about 2005. Under the intermediate assumptions, after 2000 the labor force is projected to increase by about 0.9 percent per year, on average, through 2011, and to increase much more slowly thereafter, ultimately reaching a 0.2 percent annual growth rate over the final third of the 75-year projection period.

The ultimate projected labor force participation rates are not basic assumptions. They are derived from a historically-based structural relationship using demographic and economic assumptions specific to each alternative. Because no variation in the structural relationship is assumed, and participation rates are not highly sensitive to most of the demographic and economic assumptions, the ultimate projected labor force participation rates vary only slightly across alternatives.

For men, the projected age-adjusted labor force participation rates for 2080 for the low cost, intermediate, and high cost assumptions are 1.0, 1.1, and 0.9 percentage point(s) lower, respectively, than the 2000 level of 74.7 percent. (Age-adjusted labor force participation rates are adjusted to the 2000 age distribution of the civilian noninstitutional U.S. population.) These declines are due to increases in the disability prevalence rates and in the proportion of males who are never married. For women, the projected age-adjusted labor force participation rates for 2080 for the low cost, intermediate, and high cost assumptions are 0.3, 0.3, and 0.2 percentage point higher, respectively, than the 2000 level of 60.2 percent. These increases are due, in

part, to lagged-cohort effects and projected increases in the proportion of females who are never married, separated, widowed, or divorced.

The unemployment rate presented in table V.B2 is in the most commonly cited form, the civilian rate. For years through 2011, total rates are presented without adjustment for changes in the age-sex distribution of the population. For years after 2011, unemployment rates are presented as total age-sex adjusted rates (using the age-sex distribution of the 2000 civilian labor force). Age-sex adjusted rates allow for more meaningful comparisons across time periods.

The total unemployment rate reflects the projected levels of unemployment for various age-sex subgroups of the population. Unemployment rates for each subgroup are projected based on a specification (consistent with Okun's Law) relating changes in the unemployment rate to the changes in the business cycle, as measured by the ratio of the actual to potential GDP. For each alternative, the total unemployment rate is projected to move toward the ultimate assumed rate as the economy moves toward the long-range sustainable growth path.

The ultimate age-sex adjusted unemployment rate for each alternative is assumed to be reached by 2011. After 2011, the age-sex adjusted rate is stable because the ratio of actual to potential GDP is assumed to be constant. The ultimate assumed unemployment rates are 4.5, 5.5, and 6.5 percent for the low cost, intermediate, and high cost assumptions, respectively. These are the same values assumed in the 2001 report.

6. GDP Projections

The real growth rate in GDP equals the combined growth rates for total employment, productivity, and average hours worked. Total employment is the sum of the U.S. Armed Forces and total civilian employment, which is based on the projected total civilian labor force and unemployment rates. For the 30-year period from 1970 to 2000, the average growth rate in real GDP was 3.2 percent, combining the growth rates of 1.7, 1.5, and -0.1 percent for its components—total employment, productivity, and average hours worked, respectively.

For the intermediate assumptions, the average annual growth in real GDP is projected to be 2.7 percent over the short-range projection period (2002-11), a slower rate than the 3.2 percent average observed over the historical 30-year period (1970-2000). This slowdown is primarily due to slower projected growth in total employment. For the low cost assumptions, annual growth in real GDP is projected to average 3.2 percent over the decade end-

ing in 2011. The relatively faster growth is due mostly to a higher assumed rate of growth in worker productivity. Both the low cost and intermediate assumptions reflect the recession in the latter half of 2001, although the recession is assumed to be milder under the low cost assumptions. For the high cost assumptions, the recession in the second half of 2001 is deeper and continues into the first quarter of 2002, resulting in a total decline in real GDP of 1.5 percent. After 12 quarters of recovery, a second recession, with a total decline in real GDP of 1.8 percent, is assumed to begin in the second quarter of 2005 and last 3 quarters. After the second recession, a moderate economic recovery is assumed through 2008, with continued modest economic growth thereafter. For the high cost assumptions, annual growth in real GDP is projected to average 1.9 percent for the decade ending in 2011.

After 2011, no economic cycles are assumed. Thus, projected rates of growth in real GDP are determined by the projected full-employment rate of growth for total employment, and the assumed full-employment rates of growth for labor productivity and average hours worked. For the intermediate assumptions, the projected rate of growth for real GDP falls toward the assumed productivity growth rate because of the projected decline in labor force growth over the period. By 2080, the growth in real GDP slows to about 1.6 percent, due to the assumed ultimate percent changes of 0.2, 1.6, and -0.1 for total employment, productivity, and average hours worked, respectively.

7. Interest Rate Projections

The interest rate presented in table V.B2 is the average of the nominal interest rates for special U.S. Government obligations issuable to the trust funds in each of the 12 months of the year. Interest for these securities is generally compounded semiannually. The real interest rate (ex post) is defined to be the annual (compounded) yield rate for investments in these securities divided by the annual rate of growth in the CPI for the first year after issuance. For 2001, the average annual nominal interest rate for securities newly issued to the trust funds was 5.2 percent, a decrease of 1.0 percentage point from the average nominal interest rate of 6.2 percent in 2000.

In developing a reasonable range of assumed ultimate future real interest rates for the three alternatives, historical experience was examined for the 40 years, 1961-2000, and for each of the 10-year subperiods, 1961-70, 1971-80, 1981-90, and 1991-2000. For the 40-year period, the real interest rate averaged 3.3 percent per year. For the four 10-year subperiods, the real interest rates averaged 2.2, 0.4, 6.2 and 4.4 percent, respectively. The assumed ultimate real interest rates are 3.7 percent, 3.0 percent, and 2.2 percent for the low cost, intermediate, and high cost assumptions, respectively. The ultimate

real yields are assumed to be reached by the end of the short-range period. These annual real yields are the same as those assumed in the 2001 report.

For the 10-year short-range projection period, nominal interest rates are projected based on changes in the business cycle and in the CPI. Under the intermediate assumptions, the nominal interest rate is projected to drop from 5.2 percent in 2001 to 4.9 percent in 2002, reflecting continued weakness in the economy and a lower rate of inflation. Thereafter, the nominal interest rate rises to 6.4 percent by 2005, before declining to the ultimate assumed level of 6.0 percent in 2009. For the low cost assumptions, the average annual nominal interest rate is assumed to reach an ultimate level of about 5.7 percent in 2006. For the high cost assumptions, it is assumed to peak at 8.2 percent in 2006 and 2007, and then decline to an ultimate rate of about 6.2 percent in 2010.

Table V.B2.—Additional Economic Factors

Calendar year	Average annual unemployment rate[1] (percent)	Average annual percentage increase in— Labor force[3]	Total employment[4]	Real GDP[5]	Average annual interest rate[2] (percent)
Historical data:					
1960 to 1965	5.5	1.3	1.6	5.0	4.0
1965 to 1970	3.9	2.2	2.1	3.4	5.9
1970 to 1975	6.1	2.5	1.5	2.7	6.7
1975 to 1980	6.8	2.7	2.9	3.7	8.5
1980 to 1985	8.3	1.5	1.5	3.1	12.1
1985 to 1990	5.9	1.7	2.0	3.2	8.5
1990 to 1995	6.6	1.0	.9	2.4	7.0
1995 to 2000	4.6	1.3	1.6	4.1	6.2
1991	6.9	.4	-.9	-.5	8.0
1992	7.5	1.4	.5	3.1	7.1
1993	6.9	.8	1.3	2.7	6.1
1994	6.1	1.4	2.2	4.0	7.1
1995	5.6	1.0	1.4	2.7	6.9
1996	5.4	1.2	1.4	3.6	6.6
1997	5.0	1.8	2.2	4.4	6.6
1998	4.5	1.0	1.4	4.3	5.6
1999	4.2	1.2	1.5	4.1	5.9
2000	4.0	1.1	1.2	4.1	6.2
2001	4.8	.7	-.1	1.0	5.2
Intermediate:					
2002	6.4	.8	-.9	.7	4.9
2003	6.4	.9	1.0	3.8	6.2
2004	6.1	1.0	1.3	3.5	6.3
2005	5.9	.9	1.1	3.2	6.4
2006	5.7	.9	1.1	3.1	6.4
2007	5.5	1.0	1.1	3.0	6.3
2008	5.4	.9	1.0	2.6	6.1
2009	5.4	.8	.8	2.4	6.0
2010	5.4	.7	.7	2.2	6.0
2011	5.4	.6	.6	2.1	6.0
2015	5.5	.4	.4	1.8	6.0
2020	5.5	.3	.3	1.8	6.0
2025	5.5	.3	.3	1.8	6.0
2030	5.5	.4	.4	1.8	6.0
2035	5.5	.4	.4	1.9	6.0
2040	5.5	.4	.4	1.8	6.0
2045	5.5	.3	.3	1.8	6.0
2050	5.5	.3	.3	1.7	6.0
2055	5.5	.2	.2	1.7	6.0
2060	5.5	.2	.2	1.7	6.0
2065	5.5	.2	.2	1.7	6.0
2070	5.5	.2	.2	1.7	6.0
2075	5.5	.2	.2	1.6	6.0
2080	5.5	.2	.2	1.6	6.0

Table V.B2.—Additional Economic Factors (Cont.)

Calendar year	Average annual unemployment rate[1] (percent)	Average annual percentage increase in— Labor force[3]	Total employment[4]	Real GDP[5]	Average annual interest rate[2] (percent)
Low Cost:					
2002	6.1	0.9	-0.5	1.6	5.2
2003	5.8	1.1	1.5	4.6	6.2
2004	5.2	1.2	1.8	4.3	6.1
2005	5.0	1.1	1.4	3.5	5.8
2006	4.9	1.0	1.2	3.3	5.7
2007	4.7	1.0	1.2	3.2	5.7
2008	4.6	1.0	1.1	3.1	5.7
2009	4.5	.9	1.0	3.0	5.7
2010	4.4	.8	.9	2.8	5.7
2011	4.4	.7	.7	2.6	5.7
2015	4.5	.5	.5	2.4	5.7
2020	4.5	.4	.4	2.3	5.7
2025	4.5	.4	.4	2.3	5.7
2030	4.5	.5	.5	2.4	5.7
2035	4.5	.6	.6	2.5	5.7
2040	4.5	.6	.6	2.5	5.7
2045	4.5	.6	.6	2.5	5.7
2050	4.5	.6	.6	2.5	5.7
2055	4.5	.6	.6	2.5	5.7
2060	4.5	.6	.6	2.5	5.7
2065	4.5	.6	.6	2.5	5.7
2070	4.5	.6	.6	2.5	5.7
2075	4.5	.6	.6	2.5	5.7
2080	4.5	.6	.6	2.5	5.7
High Cost:					
2002	6.6	.6	-1.2	.0	5.1
2003	6.3	.8	1.1	3.7	7.0
2004	5.9	1.0	1.4	2.9	7.9
2005	6.4	.7	.2	.1	7.8
2006	7.1	.5	-.3	1.5	8.2
2007	6.5	.9	1.6	3.5	8.2
2008	6.3	.9	1.1	2.1	6.7
2009	6.4	.7	.6	1.6	6.3
2010	6.4	.7	.7	1.7	6.2
2011	6.4	.6	.6	1.7	6.2
2015	6.5	.3	.3	1.3	6.2
2020	6.5	.2	.2	1.3	6.2
2025	6.5	.2	.2	1.3	6.2
2030	6.5	.2	.2	1.3	6.2
2035	6.5	.2	.2	1.3	6.2
2040	6.5	.1	.1	1.2	6.2
2045	6.5	.0	.0	1.0	6.2
2050	6.5	-.1	-.1	1.0	6.2
2055	6.5	-.2	-.2	.9	6.2
2060	6.5	-.2	-.2	.9	6.2
2065	6.5	-.3	-.3	.8	6.2
2070	6.5	-.3	-.3	.8	6.2
2075	6.5	-.3	-.3	.8	6.2
2080	6.5	-.3	-.3	.8	6.2

[1] Unadjusted civilian unemployment rates are shown through 2011. Thereafter, the rates are adjusted to the age-sex distribution of the civilian labor force in 2000.
[2] 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.
[3] The U.S. civilian labor force concept is used here.
[4] Total of civilian and military employment in the U.S. economy.
[5] The real GDP (gross domestic product) is the value of total output of goods and services, expressed in 1996 dollars.

C. PROGRAM-SPECIFIC ASSUMPTIONS AND METHODS

The demographic and economic assumptions and methods described in the previous sections are used in a set of models to project future income and outgo under the OASDI program. In some cases, the economic assumptions result in the direct calculation of program parameters as described in the following subsection. These parameters affect the level of payroll taxes collected and the level of benefits paid and are calculated using formulas described explicitly in the Social Security Act. In other cases, the combination of demographic and economic assumptions are used indirectly to drive more complicated models that project the numbers of future workers covered under OASDI and the levels of their covered earnings, and the numbers of future beneficiaries and the expected levels of their benefits. The following subsections provide brief descriptions of the derivations of these program-specific factors.

1. Automatically Adjusted Program Amounts

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. These automatic adjustments are based upon measured changes in the national average wage index and the CPI.[1] In this section, values are shown for program amounts that are subject to automatic adjustment, from the time that such adjustments became effective through 2011. Projected values for future years are based on the economic assumptions described in the preceding section of this report.

The following two tables present the historical and projected values of the CPI-based benefit increases, as well as the average wage index series and the values of many of the wage-indexed program amounts. In each table, the projections are shown under the three alternative sets of economic assumptions described in the previous section. Table V.C1 includes:

- The annual percentage increases which have been applied to OASDI benefits under automatic cost-of-living adjustment provisions in the Social Security Act, based on increases in the CPI.

[1] Details of these indexation procedures are published annually in the *Federal Register*, and are also available on the Internet at http://www.ssa.gov/OACT/COLA/index.html.

- The annual levels of and percentage increases in the national average wage index. Under section 215(b)(3) of the Social Security Act, the national average wage index for each year after 1950 is used to index the taxable 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 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 other program amounts that are subject to the automatic-adjustment provisions.
- The OASDI contribution and benefit base—the maximum amount of earnings subject to the OASDI payroll tax in the specified year.
- The retirement earnings test exempt amounts—the annual amount of earnings below which beneficiaries are not subject to benefit withholding. A lower exempt amount applies in years before a beneficiary attains normal retirement age (NRA). A higher amount applies for the year in which the beneficiary attains normal retirement age. The retirement test does not apply beginning with the attainment of normal retirement age.

Table V.C1.—Cost-of-Living Benefit Increases, Average Wage Index, Contribution and Benefit Bases, and Retirement Earnings Test Exempt Amounts, 1975-2011

Calendar year	OASDI benefit increases[1] (percent)	Average wage index[2]		OASDI contribution and benefit base[3]	Retirement earnings test exempt amount	
		Amount	Increase (percent)		Under NRA[4]	At NRA[5]
Historical data:						
1975	8.0	$8,630.92	7.5	$14,100	$2,520	$2,520
1976	6.4	9,226.48	6.9	15,300	2,760	2,760
1977	5.9	9,779.44	6.0	16,500	3,000	3,000
1978	6.5	10,556.03	7.9	17,700	3,240	4,000
1979	9.9	11,479.46	8.7	22,900	3,480	4,500
1980	14.3	12,513.46	9.0	25,900	3,720	5,000
1981	11.2	13,773.10	10.1	29,700	4,080	5,500
1982	7.4	14,531.34	5.5	32,400	4,440	6,000
1983	3.5	15,239.24	4.9	35,700	4,920	6,600
1984	3.5	16,135.07	5.9	37,800	5,160	6,960
1985	3.1	16,822.51	4.3	39,600	5,400	7,320
1986	1.3	17,321.82	3.0	42,000	5,760	7,800
1987	4.2	18,426.51	6.4	43,800	6,000	8,160
1988	4.0	19,334.04	4.9	45,000	6,120	8,400
1989	4.7	20,099.55	4.0	48,000	6,480	8,880
1990	5.4	21,027.98	4.6	51,300	6,840	9,360
1991	3.7	21,811.60	3.7	53,400	7,080	9,720
1992	3.0	22,935.42	5.2	55,500	7,440	10,200
1993	2.6	23,132.67	.9	57,600	7,680	10,560
1994	2.8	23,753.53	2.7	60,600	8,040	11,160
1995	2.6	24,705.66	4.0	61,200	8,160	11,280
1996	2.9	25,913.90	4.9	62,700	8,280	12,500
1997	2.1	27,426.00	5.8	65,400	8,640	13,500
1998	1.3	28,861.44	5.2	68,400	9,120	14,500
1999	[6]2.5	30,469.84	5.6	72,600	9,600	15,500
2000	3.5	32,154.82	5.5	76,200	10,080	17,000
Intermediate:						
2001	[7]2.6	33,896.77	5.4	[7]80,400	[7]10,680	25,000
2002	1.3	34,943.24	3.1	[7]84,900	[7]11,280	30,000
2003	2.6	36,608.64	4.8	89,700	11,880	31,680
2004	2.8	38,115.60	4.1	92,400	12,240	32,640
2005	3.0	39,664.00	4.1	96,600	12,840	34,200
2006	3.0	41,286.14	4.1	100,800	13,320	35,520
2007	3.0	42,963.22	4.1	104,700	13,920	36,960
2008	3.0	44,667.24	4.0	109,200	14,520	38,520
2009	3.0	46,445.75	4.0	113,400	15,120	40,080
2010	3.0	48,302.26	4.0	117,900	15,600	41,640
2011	3.0	50,255.81	4.0	122,700	16,320	43,320
Low Cost:						
2001	[7]2.6	33,904.11	5.4	[7]80,400	[7]10,680	25,000
2002	1.1	35,156.59	3.7	[7]84,900	[7]11,280	30,000
2003	2.0	36,756.79	4.6	89,700	11,880	31,680
2004	2.0	38,180.33	3.9	93,000	12,360	32,760
2005	2.0	39,451.58	3.3	97,200	12,840	34,320
2006	2.0	40,726.90	3.2	100,800	13,440	35,640
2007	2.0	42,045.76	3.2	104,100	13,800	36,840
2008	2.0	43,450.05	3.3	107,700	14,280	38,040
2009	2.0	44,953.78	3.5	111,000	14,760	39,240
2010	2.0	46,516.32	3.5	114,900	15,240	40,560
2011	2.0	48,161.21	3.5	118,800	15,720	42,000

Table V.C1.—Cost-of-Living Benefit Increases, Average Wage Index, Contribution and Benefit Bases, and Retirement Earnings Test Exempt Amounts, 1975-2011 (Cont.)

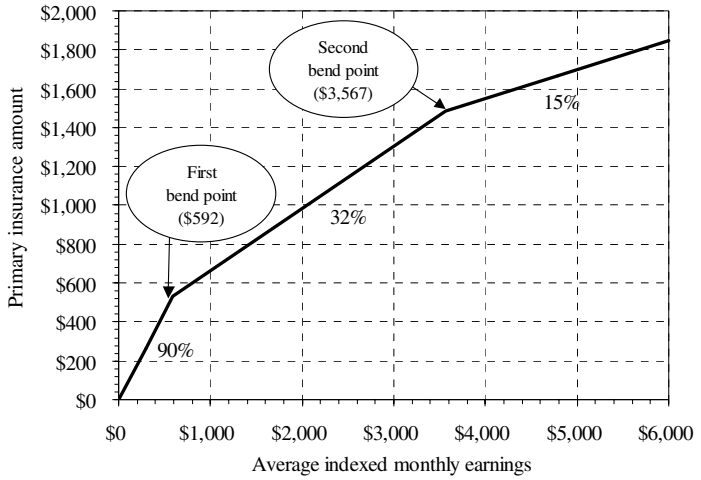
Calendar year	OASDI benefit increases[1] (percent)	Average wage index[2]		OASDI contribution and benefit base[3]	Retirement earnings test exempt amount	
		Amount	Increase (percent)		Under NRA[4]	At NRA[5]
High Cost:						
2001	[7]2.6	$33,844.16	5.3	[7]$80,400	[7]$10,680	$25,000
2002	1.5	34,680.32	2.5	[7]84,900	[7]11,280	30,000
2003	3.3	36,540.65	5.4	89,400	11,880	31,560
2004	4.8	38,473.52	5.3	91,500	12,120	32,400
2005	6.0	40,109.22	4.3	96,600	12,840	34,080
2006	5.7	42,345.82	5.6	101,700	13,440	35,880
2007	4.8	45,019.34	6.3	105,900	14,040	37,440
2008	4.1	47,106.05	4.6	111,900	14,880	39,480
2009	4.0	49,131.97	4.3	119,100	15,840	42,000
2010	4.0	51,287.13	4.4	124,500	16,560	43,920
2011	4.0	53,589.77	4.5	129,900	17,280	45,840

[1] Effective with benefits payable for June in each year 1975-82, and for December in each year after 1982.
[2] See table VI.E7 for projected dollar amounts of the average wage index beyond 2011.
[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.
[4] Normal retirement age. See table V.C3 for specific values.
[5] In 1955-82, the retirement earnings test did not apply at ages 72 and over; in 1983-99, the test did not apply at ages 70 and over; beginning in 2000, it does not apply beginning with the month of attainment of NRA. In the year of attainment of NRA, the higher exempt amount applies to earnings in the year prior to the month of NRA attainment. Amounts for 1978-82 specified by Public Law 95-216; for 1996-2002, Public Law 104-121.
[6] Originally determined as 2.4 percent, but pursuant to Public Law 106-554, is effectively 2.5 percent.
[7] Actual amount, as determined under automatic-adjustment provisions.

Other wage-indexed amounts are shown in table V.C2. The table provides historical values from 1978, when the amount of earnings required for a quarter of coverage was first indexed, through 2002, and also shows projected amounts through 2011. These other wage-indexed program amounts are:

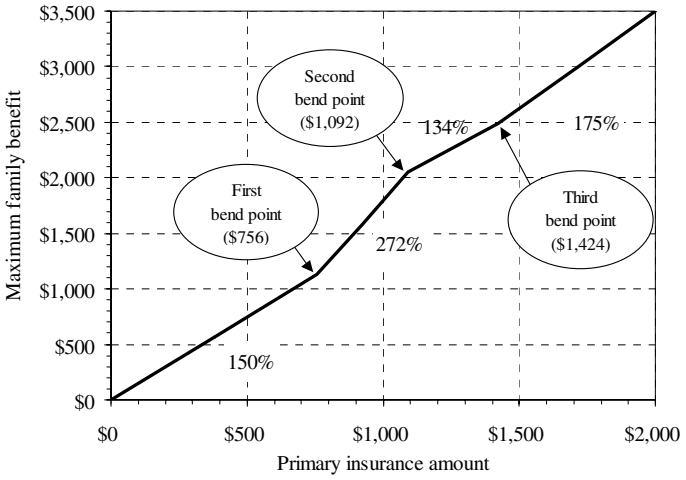
- The bend points in the formula for computing the primary insurance amount (PIA) for workers who reach age 62, become disabled, or die in a given year. These bend points indicate three ranges in a worker's average indexed monthly earnings (AIME) over which a certain percent factor, 90, 32, or 15 percent respectively, is applied to determine the worker's PIA. Figure V.C1 presents the PIA formula for 2002.

Figure V.C1.—Primary-Insurance-Amount Formula for the 2002 Cohort



- Bend points in the formula used to compute the maximum total amount of monthly benefits payable on the basis of the earnings of a retired or deceased worker. This formula is a function of the worker's PIA, and relies on four intervals and percentages. Figure V.C2 presents the maximum-family-benefit formula for 2002.

Figure V.C2.—Maximum-Family-Benefit Formula for the 2002 Cohort



- The amount of earnings required in a year to be credited with a quarter of coverage (QC). The number and timing of QCs earned is used to determine an individual's insured status—the basic requirement for benefit eligibility under OASDI.

- The old-law contribution and benefit base—the OASDI contribution and benefit base 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. 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 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 V.C2.—Selected Wage-Indexed Program Amounts, Calendar Years 1978-2011

Calendar year	AIME bend points in PIA formula[1]		PIA bend points in maximum-family-benefit formula[2]			Earnings required for a quarter of coverage	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
2000	531	3,202	679	980	1,278	780	56,700
2001	561	3,381	717	1,034	1,349	830	59,700
2002	592	3,567	756	1,092	1,424	870	63,000

Table V.C2.—Selected Wage-Indexed Program Amounts, Calendar Years 1978-2011 (Cont.)

Calendar year	AIME bend points in PIA formula[1]		PIA bend points in maximum-family-benefit formula[2]			Earnings required for a quarter of coverage	Old-law contribution and benefit base[3]
	First	Second	First	Second	Third		
Intermediate:							
2003	$624	$3,761	$797	$1,151	$1,501	$920	$66,600
2004	643	3,877	822	1,186	1,547	950	68,700
2005	674	4,062	861	1,243	1,621	990	71,700
2006	702	4,229	896	1,294	1,688	1,030	74,700
2007	730	4,401	933	1,347	1,756	1,070	77,700
2008	760	4,581	971	1,402	1,828	1,120	81,000
2009	791	4,767	1,010	1,459	1,902	1,160	84,300
2010	822	4,956	1,051	1,516	1,978	1,210	87,600
2011	855	5,153	1,092	1,577	2,056	1,260	91,200
Low Cost:							
2003	624	3,762	797	1,151	1,501	920	66,600
2004	647	3,901	827	1,194	1,557	950	69,000
2005	677	4,078	864	1,248	1,627	1,000	72,000
2006	703	4,236	898	1,296	1,690	1,030	75,000
2007	726	4,377	928	1,339	1,747	1,070	77,400
2008	750	4,519	958	1,383	1,803	1,100	79,800
2009	774	4,665	989	1,427	1,862	1,140	82,500
2010	800	4,821	1,022	1,475	1,924	1,180	85,200
2011	827	4,987	1,057	1,526	1,990	1,220	88,200
High Cost:							
2003	623	3,755	796	1,149	1,499	920	66,300
2004	638	3,848	816	1,177	1,536	940	68,100
2005	673	4,054	859	1,241	1,618	990	71,700
2006	708	4,269	905	1,306	1,703	1,040	75,600
2007	738	4,450	943	1,362	1,776	1,090	78,600
2008	779	4,698	996	1,438	1,875	1,150	83,100
2009	829	4,995	1,059	1,528	1,993	1,220	88,200
2010	867	5,226	1,108	1,599	2,086	1,280	92,400
2011	904	5,451	1,156	1,668	2,175	1,330	96,300

[1] The formula to compute a PIA is (1) 90% of AIME below the first bend point, plus (2) 32% of AIME in excess of the first bend point but not in excess of the second, plus (3) 15% of AIME in excess of the second bend point. The bend points pertain to the first year a beneficiary becomes eligible for benefits.

[2] The formula to compute a family maximum is (1) 150% of PIA below the first bend point, plus (2) 272% of PIA in excess of the first bend point but not in excess of the second, plus (3) 134% of PIA in excess of the second bend point but not in excess of the third, plus (4) 175% of PIA in excess of the third bend point.

[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. Two such changes are the scheduled increases in the normal retirement age and in the delayed retirement credits. Table V.C3 shows the scheduled changes in these two important items and their effect on benefits expressed as a percentage of PIA.

Table V.C3.—Legislated Changes in Normal Retirement Age and Delayed Retirement Credits, 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

2. Covered Employment

Projections of the total labor force and unemployment rate are based on Bureau of Labor Statistics definitions from the Current Population Survey (CPS), and thus represent the average weekly number of employed and unemployed persons, aged 16 and over, in the U.S. in a calendar year. Total covered workers in a year are the number of persons who have any OASDI covered earnings at any time during the year. For those aged 16 and over, projected covered employment is the sum of age-sex components, each of

which is projected as a ratio to the CPS concept of employment. For those under age 16, projected covered employment is the sum of age-sex components, each of which is projected as a ratio to the Social Security area population. The projection methodology accounts for changes in the business cycle, the quarterly pattern of growth in employment within each year, changes in non-OASDI covered employment, 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.

Covered worker rates are defined as the ratio of OASDI covered workers to the Social Security area population. The projected age-adjusted coverage rate for men, aged 16 and over, changes from its 2000 level of 75.1 percent to 73.0, 72.4, and 71.9 percent for 2080 for alternatives I, II, and III, respectively. (Age-adjusted covered worker rates are adjusted to the 2000 age distribution of the Social Security area population.) For women, it changes from its 2000 level of 63.8 percent to 63.4, 62.8, and 62.3 percent for 2080 for alternatives I, II, and III, respectively.

3. Taxable Payroll and Payroll Tax Revenue

The OASDI taxable payroll is the amount of earnings in a year which, when multiplied by the combined employee-employer tax rate, yields the total amount of taxes due from wages and self-employed income in the year. Taxable payroll is used in estimating OASDI income and in determining income and cost rates and actuarial balances. (See section IV.B.1, Annual Income Rates, Cost Rates, and Balances, for definitions of these terms.) Taxable payroll is computed from taxable earnings, defined as the sum of wages and self-employment earnings subject to the Social Security tax. Wages are adjusted to take into account the "excess wages" earned by workers with multiple jobs whose combined wages exceed the taxable earnings base. Also, from 1983 through 2001, taxable payroll includes deemed wage credits for military service. Prior to 1984, the self-employed tax rate was less than the combined employee-employer rate, thus taxable self-employed earnings were weighted to reflect this. Also, prior to 1988, employers were exempt from Social Security tax on part of their employees' tips; taxable payroll was reduced by half of this exempt amount to take this into account.

Taxable earnings for employees, employers, and the self-employed are estimated from total earnings in covered employment. Covered earnings are summed from component sectors, each of which is based on the projected growth of U.S. earnings and a factor that reflects any projected change in coverage (e.g., the increase in coverage in the Federal civilian sector due to

mandatory coverage of newly hired employees). The level of taxable earnings, that is, covered earnings at or below the taxable earnings base, is then estimated based on adjustments to the latest available historical earnings distributions for wage and self-employed workers. The ratio of taxable to covered earnings decreased from about 90.2 percent in 1983 to 87.9 percent in 1994, or by an average annual rate of -0.2 percent. The ratio is estimated to have fallen further to 84.4 percent in 1999, and to 83.4 in 2000, due mainly to the very high wage earners capturing a greater proportion of total wages.

Some of this historical decline is projected to continue through 2011 under all alternatives. The taxable earnings ratio is projected to be about 83.4, 82.6, and 81.9 percent for 2011 under alternatives I, II, and III, respectively, or to change at an average annual rate of about 0.0, -0.1, and -0.2 percent. After 2011, the taxable to covered ratio is held approximately constant under each alternative.

Payroll tax revenue is computed by applying the appropriate tax rates to taxable wages and self-employment income, taking into account the lag between the time the tax liability is incurred and when the taxes are collected. In the case of wages, employers are required to deposit withholding taxes with the Treasury on a schedule determined by the amount of tax liability incurred. (Generally, the higher the amount of liability, the sooner the taxes must be paid—ranging from the middle of the following month to, for companies with very large payrolls, the next banking day after wages are paid.) Self-employed workers are required to make estimated tax payments on their earnings four times during the year, as well as making up any underestimate on their individual income tax return. The pattern of actual receipts by the Treasury is taken into account when estimating self-employed tax collections.

4. Insured Population

Eligibility for benefits under the OASDI program requires some minimal level of work in covered employment. This requirement is established by a worker's accumulation of quarters of coverage (QCs). Prior to 1978, one QC was credited for each calendar quarter in which at least $50 was earned. In 1978, when quarterly reporting of earnings was replaced by annual reporting, the amount required to earn a QC (up to a maximum of four per year) was set at $250. Since then, this amount has been adjusted each year according to the Average Wage Index. Its value in 2002 is $870.

There are three types of insured status which can be acquired by a worker under the OASDI program. Each of these statuses is determined by the num-

ber and recency of QCs earned. Fully insured status is acquired by any worker whose total number of QCs is greater than or equal to the number of years elapsed after the year of attainment of age 21 (and at least 6). Once a worker has accumulated 40 QCs, he or she remains permanently fully insured. Disability-insured status is acquired by any fully insured worker over age 30 who has accumulated 20 QCs during the 40-quarter period ending with the current quarter; any fully insured worker aged 24-30 who has accumulated QCs during one-half of the quarters elapsed after the quarter of attainment of age 21 and up to and including the current quarter; and any fully insured worker under age 24 who has accumulated 6 QCs during the 12-quarter period ending with the current quarter. Currently insured status is acquired by any worker who has accumulated 6 QCs during the 13-quarter period ending with the current quarter. Periods of disability are excluded from the above described QC requirements for insured status (but do not reduce the minimum of 6 QCs).

There are many types of benefits payable to workers and their family members under the OASDI program. One of the requirements of eligibility for these benefits is the insured status of the worker. A worker must be fully insured to be eligible for a primary retirement benefit, and for his or her spouse or children to be eligible for auxiliary benefits. A deceased worker must have been either currently insured or fully insured at the time of death for his or her children (and their mother or father) to be eligible for benefits. If there are no eligible surviving children, the deceased worker must have been fully insured at the time of death for his or her surviving spouse to be eligible. A worker must be disability insured to be eligible for a primary disability benefit, and for his or her spouse or children to be eligible for auxiliary benefits.

Projections of the fully insured population, as a percentage of the Social Security area population, are made by age and sex for each birth cohort beginning with 1900. These percentages are based on 30,000 simulated work histories for each sex and birth cohort, which are constructed from past and projected coverage rates, median earnings, and amounts required for crediting QCs. These work histories are developed by a model which assumes that persons who have recently been out of covered employment are likely to remain out of covered employment. This model is driven by two sets of age-sex-specific parameters which are empirically set such that the simulated fully insured percentages reproduce fairly closely the fully insured percentages estimated from the Continuous Work History Sample from 1970 to date.

Projections of the disability-insured population, as a percentage of the fully insured population, are made by age and sex for each birth cohort beginning

with 1900. These percentages are based on the same simulated work histories used to project the fully insured percentages. Additional adjustments are made to bring the simulated disability-insured percentages into close agreement with those estimated from the Continuous Work History Sample. The principal adjustment is for periods of disability (which are not explicitly taken into account in the model). These periods (which reduce the normally applicable QC requirements) have a negligible effect on fully insured status at retirement age, but a substantial effect on disability-insured status.

Projections of the currently insured population are not made. This is because the number of beneficiaries who are entitled to benefits based solely on currently insured status has been very small, and is expected to remain small in the future.

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 78.5 for December 31, 1997, to 89.2, 90.0, and 90.7 for December 31, 2080, under alternatives I, II, and III, respectively. The percentage for females is projected to increase significantly, while that for males is projected to remain relatively unchanged. Under alternative II, for example, the percentage for males is projected to increase slightly during this period from 91.6 to 91.8, while that for females is projected to increase from 68.9 to 88.4.

5. Old-Age and Survivors Insurance Beneficiaries

The number of OASI beneficiaries is 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 is also projected by marital status.

For the short-range period, the number of retired-worker beneficiaries is 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.

For the long-range period, the number of retired-worker beneficiaries not previously converted from disabled-worker beneficiary status is 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 age 62 is projected by a simple linear regression based on the projected labor force participation rate for age 62. The percentage for ages 70 and over is assumed to be

nearly 100, because the retirement earnings test and delayed retirement credit do not apply after age 70, but is adjusted for the statistical difference between in-force data and in-current-payment data. The percentage for each age 63 through 69 is projected from the December 31, 2001 retired-worker beneficiaries data which reflects the elimination of the earnings test after normal retirement age, with an adjustment for changes in the portion of the primary insurance amount that is payable at each age of entitlement. As the normal retirement age increases, the number of retired-worker beneficiaries not automatically converted from disabled-worker beneficiary status as a percentage of the exposed population is gradually adjusted downward at each age 63 through 69.

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

The number of aged-spouse beneficiaries is 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 is 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 are 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 are 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 a projected prevalence rate is applied to calculate the estimated number of aged-spouse beneficiaries.

In addition, the same factors are 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 is at least 10 years in duration. Third, factor (3) above is 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, are based on the projected number of children in the population. In the short-range period, the number of entitled children is 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 is projected separately by sex of the wage-earner parent. To the number of children in the population, factors are applied representing the probabilities that the parent is alive, aged 62 or over, insured, and receiving a retired-worker benefit. Another factor is applied representing the probability that the child is not entitled to a benefit based on the other parent's earnings. In addition, a factor is 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 is also applied.

The number of disabled children aged 18 and over of retired-worker beneficiaries is projected from the adult population. In the short-range period, award rates are applied to the population, and termination rates are applied to the number of disabled children already receiving benefits. In the long-range period, disabled children are 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 is 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 are 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 is projected from the population by age and sex. In the short-range period, insured aged-widow(er) beneficiaries are projected concurrently with the retired-worker beneficiaries. A regression equation projects 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 are projected from the population by age, sex, and marital status. Four factors are 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 is 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)'s benefits. Also, the same factors are 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 is at least 10 years in duration.

In the short-range period, the number of disabled-widow(er) beneficiaries is estimated as a proportion of the uninsured female or male population aged 50-64. In the long-range period, the number is 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, are 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 is 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 is 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 represents the probability that the parent is deceased.

In the short-range period, the numbers of entitled mother-survivor and father-survivor beneficiaries are 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 are estimated

from the number of child-survivor beneficiaries, taking into account projected changes in average family size.

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

Table V.C4 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 are made separately for spouses and widow(er)s.

Table V.C4.—OASI Beneficiaries With Benefits in Current-Payment Status at the End of Calendar Years 1945-2080

[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
1999	27,784	2,811	442	4,944	212	1,885	3	38,081
2000	28,505	2,798	459	4,901	203	1,878	3	38,748
2001	28,843	2,742	467	4,828	197	1,890	3	38,969

Table V.C4.—OASI Beneficiaries With Benefits in Current-Payment Status at the End of Calendar Years 1945-2080 (Cont.)

[In thousands]

	Retired workers and auxiliaries			Survivors				
Calendar year	Worker	Wife-husband	Child	Widow-widower	Mother-father	Child	Parent	Total
Intermediate:								
2005	30,298	2,635	487	4,764	181	1,911	2	40,278
2010	34,126	2,545	485	4,848	171	1,891	2	44,067
2015	40,490	2,488	542	4,894	164	1,896	3	50,478
2020	48,324	2,528	652	4,936	160	1,856	3	58,459
2025	55,635	2,586	747	5,019	160	1,829	3	65,979
2030	61,740	2,583	797	5,066	159	1,814	3	72,162
2035	65,426	2,547	816	5,087	155	1,792	3	75,827
2040	66,895	2,499	818	5,104	151	1,761	3	77,232
2045	68,051	2,528	827	5,126	146	1,733	3	78,415
2050	69,692	2,610	842	5,136	142	1,708	3	80,133
2055	72,156	2,755	869	5,148	138	1,680	3	82,749
2060	74,937	2,886	887	5,168	133	1,649	3	85,664
2065	77,774	2,995	905	5,231	129	1,618	3	88,655
2070	80,635	3,079	920	5,323	125	1,591	3	91,676
2075	83,346	3,168	934	5,418	121	1,567	3	94,558
2080	85,939	3,252	951	5,491	118	1,545	3	97,298
Low Cost:								
2005	30,260	2,630	488	4,760	182	1,919	2	40,241
2010	33,941	2,526	490	4,824	175	1,930	2	43,886
2015	39,850	2,440	545	4,895	163	2,001	3	49,897
2020	47,127	2,460	656	4,965	158	2,025	3	57,394
2025	53,819	2,481	758	5,085	158	2,067	3	64,372
2030	59,137	2,433	819	5,156	157	2,122	3	69,827
2035	61,957	2,355	851	5,172	157	2,167	3	72,661
2040	62,630	2,275	868	5,158	156	2,194	3	73,284
2045	63,223	2,284	893	5,137	156	2,216	3	73,912
2050	64,508	2,348	927	5,107	157	2,242	3	75,292
2055	66,716	2,472	975	5,097	159	2,271	3	77,692
2060	69,195	2,568	1,015	5,117	160	2,298	3	80,357
2065	71,621	2,655	1,053	5,194	162	2,325	3	83,013
2070	74,145	2,726	1,087	5,312	163	2,353	3	85,789
2075	76,842	2,812	1,125	5,444	164	2,383	3	88,773
2080	79,837	2,906	1,167	5,573	165	2,415	3	92,066
High Cost:								
2005	30,331	2,640	486	4,769	180	1,904	2	40,313
2010	34,310	2,566	481	4,875	166	1,853	2	44,252
2015	41,162	2,557	542	4,869	165	1,782	3	51,080
2020	49,666	2,629	651	4,863	157	1,673	3	59,641
2025	57,746	2,752	741	4,888	152	1,578	3	67,861
2030	64,859	2,824	781	4,898	145	1,500	3	75,010
2035	69,667	2,863	785	4,921	135	1,423	3	79,797
2040	72,223	2,866	768	4,972	125	1,347	3	82,304
2045	74,283	2,932	758	5,040	115	1,287	3	84,418
2050	76,643	3,045	751	5,089	106	1,233	3	86,870
2055	79,694	3,227	754	5,115	97	1,177	3	90,067
2060	83,106	3,385	751	5,110	88	1,119	3	93,562
2065	86,594	3,547	751	5,124	81	1,064	3	97,164
2070	90,018	3,653	749	5,157	74	1,015	3	100,668
2075	92,996	3,746	746	5,191	67	972	3	103,721
2080	95,415	3,817	745	5,197	62	933	3	106,172

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

6. Disability Insurance Beneficiaries

Benefits are paid from the DI Trust Fund to individuals who satisfy the disability-insured requirements, who are unable to engage in substantial gainful activity due to medically determinable physical or mental impairment severe enough to satisfy the requirements of the program, and have not yet attained normal retirement age. Spouses and children of such disabled workers may also receive DI benefits provided they satisfy certain criteria, mostly depending upon age or the age of a child in the care of the non-disabled spouse. In projecting future benefit outlays from the DI Trust Fund, the number of DI beneficiaries is projected for each type of beneficiary separately, by the sex of the disabled worker on whose earnings the benefits are based, and the age of the beneficiary. Such projections are accomplished using standard actuarial methods reflecting future additions to the DI rolls through awards of new benefits, and subtractions from the rolls due to death, recovery, or administrative conversion upon attainment of normal retirement age from status as a disabled-worker beneficiary to status as a retired-worker beneficiary. The long-range and short-range models used to make these projections are both constructed from this basic outline, but differ in some details reflecting their respective uses.

The number of new entitlements to disabled-worker benefits during each year is projected by applying assumed age-sex specific disability incidence rates to the projected disability-exposed population.[1] Long-range ultimate disability incidence rates are selected based on careful analysis of historical patterns and expected future conditions, including the impact of scheduled increases in the normal retirement age.[2] Incidence rates for the first half of the short-range period reflect the most recent actual experience along with consideration of other factors expected to affect the processing of disability claims in the near term. Over the latter half of the short-range period, incidence rates are assumed to trend into levels consistent with the long-range ultimate incidence rate assumptions.

These assumed incidence rates are summarized in figure V.C3 and table V.C5. As illustrated in figure V.C3, incidence rates have varied within a wide range over the past 30 years. Although not completely understood, this variation is attributed in large part to a variety of demographic and economic fac-

[1] The disability-exposed population is the disability-insured population that is not currently entitled for disabled-worker benefits.

[2] Incidence rates are adjusted upward to account for the additional 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.

tors, along with the effects of changes due to legislation and program administration.[1] The solid lines in figure V.C3 illustrate values of the summarized incidence rate, age-sex adjusted to the distribution of the disability-exposed population for 1998. Such adjustment facilitates meaningful comparisons over long periods of time. From a historically high level of about 7 awards per thousand insured in 1975, age-sex-adjusted rates declined to about 3.6 per thousand by 1982. Following a gradual trend upward, rates increased to about 5.7 per thousand by 1992, but declined from that point to about 4.6 per thousand in 2000. As described in chapter IV, in the discussion of the short-range DI estimates, the incidence rate experience for 2001, and the projections for 2002 and 2003, are affected by a one-time special workload that is expected to add roughly 200,000 disabled workers to the DI rolls. The effect of that special workload on incidence rates is easily observed in the figure. In addition to historical values, figure V.C3 displays the age-sex-adjusted short-range incidence rates under the three alternative sets of assumptions. Gross (unadjusted) incidence rates are also shown in figure V.C3 in dashed lines. These unadjusted rates are heavily influenced by the changing age-sex distribution of the exposed population over time. This is most noticeable in the period 2003 to 2011 when the aging baby-boom generation will be concentrated in the ages of highest disability incidence.

[1] A more detailed discussion of the recent history of the DI program is presented in Actuarial Study 114, "Social Security Disability Insurance Program Worker Experience", June 1999. This study can be found on the Internet at http://www.ssa.gov/OACT/NOTES/AS114/as114Foreword.html.

Figure V.C3.—DI Disabled Worker Incidence Rates, 1970-2011
[Awards per thousand disability exposed]

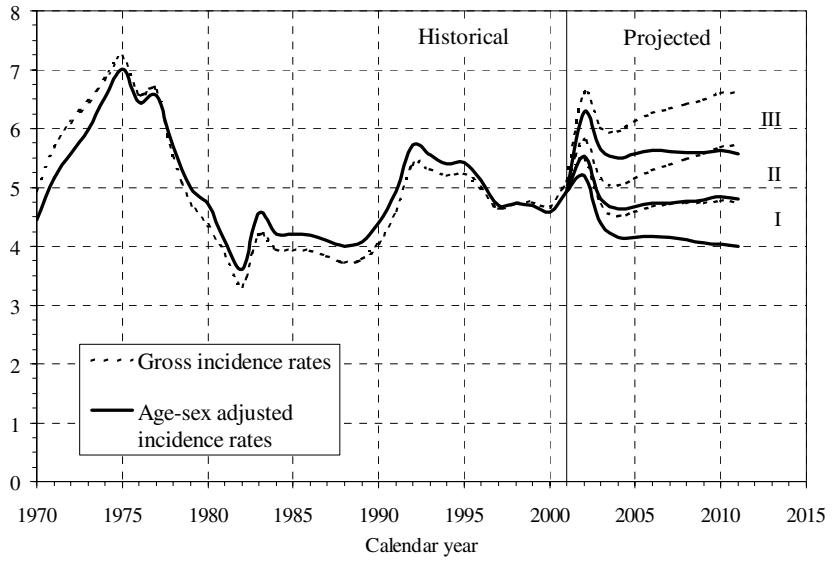


Table V.C5 presents the long-range ultimate incidence rate assumptions age-sex adjusted to the disability-exposed population as of January 1, 1996. The table also indicates the year in which the ultimate values are attained, along with an indication of the relationship between those ultimate rates and the rates for the base period (1994-96) that was used to develop relative levels of disability incidence by age and sex for long-range assumptions.

Table V.C5.—Long-Range Ultimate Disabled Worker Age-Sex Adjusted Incidence Rates[1]

	Ultimate incidence rate	Year ultimate rate is attained[2]	Percent change from base period[3] to ultimate rate
Intermediate assumption	5.5	2027	+9
Low cost assumption	4.4	2027	-13
High cost assumption	6.6	2027	+30

[1] Number of annual new disabled-worker entitlements per thousand disability-exposed, age-sex adjusted to the disability-exposed population as of January 1, 1996.
[2] The transition to ultimate incidence rates is generally completed in 2021. However, for ages 61 through 66 incidence rates are adjusted through 2027 in order to reflect increases in the normal retirement age (NRA) that are scheduled in the law.
[3] Base period rate for long-range incidence rate assumptions is 5.0 per thousand representing the average age-sex adjusted incidence rate for 1994-96.

The number of disabled-worker beneficiaries having their benefits terminated during each year is projected by applying assumed termination rates to the disabled-worker population. The termination rates are developed by age, sex, and reason for termination.[1] In addition, in the long-range period, termination rates are also assumed to vary by duration of entitlement to disabled-worker benefits. To this number of terminations is added the number of disabled-worker beneficiaries who would be automatically converted to retired-worker beneficiaries upon attainment of the normal retirement age.

In the short-range period, gross death rates under the intermediate assumptions are projected to remain relatively constant at between 35 and 37 deaths per thousand disabled workers. This is about the same as projected under the intermediate set of assumptions for last year's report. The pattern of projected recovery rates under the intermediate assumptions is consistent with assumed levels of continuing disability reviews required to fulfill the legislative mandate for regular reviews of all disabled beneficiaries. 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.

For the long-range period, projection of death rates and recovery rates begins with an analysis of such rates split by age, sex, and duration of entitlement over the base period 1991-95.[2] Under the intermediate assumptions, recovery rates for both males and females, are assumed to remain approximately constant after 2021. Death rates over the long-range period are assumed to change gradually, at about the same trend as for death rates in the general population, reaching levels in 2080 which are lower than the base period level by 54 percent for males and 46 percent for females.

Under the low cost assumptions, recovery rates and death rates are assumed to be higher than the corresponding levels assumed for the intermediate assumptions. Ultimate recovery rates are assumed to be higher than the base period rate by 125 percent for males and by 89 percent for females, while death rates are assumed to change gradually reaching levels for 2080 which are lower than the base period level by 35 percent for males and 23 percent for females.

Under the high cost assumptions, recovery rates and death rates are assumed to be lower than the corresponding levels assumed for the intermediate

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[1] Reasons for termination include death, recovery and (in the short range only) a small residual category of terminations for special administrative reasons.

[2] The termination rate analysis was based on work presented in Actuarial Study 114 referenced previously.

assumptions. Ultimate recovery rates are assumed to be higher than the base period rate by 50 percent for males and by 26 percent for females, while death rates are assumed to change gradually reaching levels for 2080 which are lower than the base period level by 74 percent for males and 70 percent for females.

These detailed projections of disabled-worker entitlements and terminations are combined using standard multiple decrement techniques to produce projections of numbers of disabled workers in current-payment status over the 75-year projection period. These projections are presented in table V.C6. As indicated in that table, the number of disabled workers in current-payment status is projected to grow from 5.3 million at the end of 2001, to 11.2 million, 12.8 million, or 14.1 million at the end of 2080, under the low cost, intermediate, or high cost assumptions, respectively. Of course, much of this growth is a direct result of the growth and aging of the population described earlier in this chapter.

Another way to view this projected growth in disabled workers is to compare the size of the projected disabled-worker population to the size of the underlying disability-insured population reflecting the age-sex distribution of the insured population as of January 1, 1996. Such a ratio eliminates the effects of the aging population and is referred to as the disabled worker age-sex adjusted prevalence rate. Expressed in these terms, the prevalence of disability is projected to grow from 34.1 per thousand disability insured at the beginning of 2001, to 34.5 per thousand, 46.3 per thousand, and 59.9 per thousand at the beginning of 2080, under the low cost, intermediate, and high cost assumptions, respectively.

Table V.C6 also presents projections of the numbers of auxiliary beneficiaries paid from the DI Trust Fund. As indicated at the beginning of this subsection, such auxiliary beneficiaries consist of qualifying spouses and children of disabled workers. In the case of children, the child must be either (1) under age 18, (2) age 18 and still a student in high school, or (3) over age 18 and disabled prior to age 22. In the case of spouses, the spouse must either be at least age 62, or have an eligible child beneficiary who is either under age 16 or disabled in his or her care.

In general, such auxiliary beneficiaries are projected in a manner that is related to the projected number of disabled-worker beneficiaries. In the short-range period, this is accomplished for family members of disabled-worker beneficiaries by projecting incidence and termination rates for each category of auxiliary beneficiary. In the long-range period, the child beneficiaries at ages 18 and under are projected in relation to the projected number

of children in the population, by applying factors representing the probability that either of their parents is insured and disabled. Spouses eligible because they have an eligible child in care are projected relative to the projected number of such children. The remaining categories of children and spouses are projected in relation to the projected number of disabled-worker beneficiaries.

Table V.C6.—DI Beneficiaries With Benefits in Current-Payment Status at the End of Calendar Years 1960-2080
[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
1999	4,870	176	1,468	6,514
2000	5,036	165	1,466	6,667
2001	5,268	157	1,482	6,907
Intermediate:				
2005	6,344	155	1,629	8,128
2010	7,477	166	1,848	9,492
2015	8,203	171	1,963	10,336
2020	8,885	188	2,069	11,143
2025	9,762	222	2,202	12,185
2030	9,898	228	2,306	12,433
2035	9,998	230	2,387	12,615
2040	10,308	235	2,449	12,991
2045	10,956	251	2,509	13,715
2050	11,395	261	2,561	14,217
2055	11,758	271	2,610	14,640
2060	11,895	273	2,651	14,820
2065	12,133	277	2,689	15,099
2070	12,367	282	2,722	15,371
2075	12,603	289	2,756	15,649
2080	12,797	294	2,794	15,885

Table V.C6.—DI Beneficiaries With Benefits in Current-Payment Status at the End of Calendar Years 1960-2080 (Cont.)
[In thousands]

Calendar year	Disabled worker	Auxiliaries: Wife-husband	Auxiliaries: Child	Total
Low Cost:				
2005	6,042	146	1,549	7,737
2010	6,721	148	1,657	8,526
2015	6,994	137	1,674	8,805
2020	7,312	141	1,727	9,180
2025	7,860	158	1,834	9,853
2030	7,877	155	1,944	9,976
2035	7,915	152	2,046	10,114
2040	8,156	154	2,135	10,444
2045	8,680	166	2,216	11,061
2050	9,058	174	2,298	11,530
2055	9,397	182	2,391	11,970
2060	9,608	185	2,485	12,279
2065	9,951	191	2,582	12,724
2070	10,361	198	2,676	13,235
2075	10,806	206	2,772	13,784
2080	11,232	214	2,871	14,317
High Cost:				
2005	6,849	173	1,779	8,801
2010	8,471	190	2,093	10,755
2015	9,516	221	2,284	12,021
2020	10,522	254	2,415	13,191
2025	11,738	310	2,548	14,595
2030	12,014	329	2,621	14,964
2035	12,198	335	2,655	15,188
2040	12,599	342	2,668	15,609
2045	13,389	362	2,695	16,446
2050	13,900	372	2,708	16,980
2055	14,280	381	2,702	17,363
2060	14,304	377	2,678	17,358
2065	14,365	380	2,646	17,391
2070	14,314	376	2,609	17,299
2075	14,218	376	2,576	17,170
2080	14,063	374	2,548	16,984

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

7. Average Benefits

Average benefits are 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 are 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 are calculated from projected earnings histories, which are developed from the actual earnings histories associated with a sample of awards made in 2001. A sample of 1999 awards, with adjustment in age distribution to reflect the effect of the

Senior Citizens' Freedom to Work Act of 2000, Public Law 106-182, enacted on April 7, 2000, was used for the 2001 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 are based on projections of age distributions at initial entitlement.

8. Benefit Payments

For each type of benefit, benefit payments are calculated as the product of a number of beneficiaries and a corresponding average monthly benefit. In the short-range period, benefit payments are calculated on a quarterly basis. In the long-range period, all benefit payments are calculated on an annual basis, using the number of beneficiaries on December 31. These amounts are adjusted to include retroactive payments to newly awarded beneficiaries, and other amounts not reflected in the regular monthly benefit payments.

Lump-sum death payments are calculated as the product of (1) the number of such payments, which is 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).

9. Administrative Expenses

The projection of administrative expenses through 2011 is based on historical experience and the expected growth in average wages. Additionally, estimates for the first several years of the projection are provided by the Office of Budget. For years after 2011, 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.

10. 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 administrative expenses associated with these benefits, and (2) the amount of OASDI payroll tax and

income tax that would be received with allowances for interest from railroad workers.

The effect of the financial interchange with the Railroad Retirement program is evaluated on the basis of trends similar to those used in estimating the cost of OASDI benefits. The resulting effect is annual short-range costs of about $3-5 billion and a long-range summarized cost of 0.04 percent of taxable payroll to the OASDI program.

11. Benefits to Uninsured Persons

Some older persons had little or no chance to become fully insured for Social Security benefits during their working lifetimes. Special payments from the OASI Trust Fund may be granted to uninsured persons who either: (1) attained age 72 before 1968, or (2) attained age 72 in 1968 or later and had 3 quarters of coverage for each year after 1966 and before the year of attainment of age 72. Benefits and costs associated with uninsured persons of the first type above are reimbursable from the General Fund of the Treasury. All projected costs associated with reimbursable and non-reimbursable payments to uninsured persons are insignificant.

12. Military-Service Transfers

Beginning in 1966, the OASI and DI Trust Funds were reimbursed annually for the cost (including administrative expenses) of providing additional benefit payments resulting from noncontributory wage credits for military service performed prior to 1957. The 1983 amendments modified the reimbursement mechanism and the timing of the reimbursements, and required a transfer in 1983 to include all future costs attributable to the wage credits. The amendments also require adjustments to that 1983 transfer every fifth year, beginning with 1985, to account for actual data.

The adjustments for 2000 included a transfer of $836 million from the DI Trust Fund to the General Fund of the Treasury. The $393 million that was scheduled to be transferred from the general fund to the OASI Trust Fund did not occur in 2000, but was transferred with an allowance for interest in February 2002.

13. 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 is 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 is 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 are 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.

VI. APPENDICES

A. HISTORY OF OASI AND DI TRUST FUND OPERATIONS

The Federal Old-Age and Survivors Insurance (OASI) Trust Fund was established on January 1, 1940, as a separate account in the United States Treasury. The Federal Disability Insurance (DI) Trust Fund, another separate account in the United States Treasury was established on August 1, 1956. All the financial operations of the OASI and DI programs are handled through these respective funds. The Board of Trustees[1] is responsible for overseeing the financial operations of these funds. The following paragraphs describe the various components of trust fund income and outgo. The tables at the end of this section present the historical operations of the separate trust funds since their inception, as well as the operations of the combined trust funds during the period when they have co-existed.

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 between 1957 and 2001 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

[1] 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: John L. Palmer and Thomas R. Saving are currently serving 4-year terms that began on October 28, 2000.

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 under current law in each calendar year and the allocation of these rates between the OASI and DI Trust Funds are shown in table VI.A1.[1] 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 2002 is also shown in table VI.A1.

Table VI.A1.—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

[1] The contribution rates for the Hospital Insurance (HI) program, and for the OASDI and HI programs combined, are shown in table VI.E1.

Table VI.A1.—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
1981	$29,700	5.350	4.700	0.650	8.0000	7.0250	0.9750
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
1991	53,400	6.200	5.600	.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	76,200	6.200	5.300	.900	12.4000	10.6000	1.8000
2001	80,400	6.200	5.300	.900	12.4000	10.6000	1.8000
2002	84,900	6.200	5.300	.900	12.4000	10.6000	1.8000
2003 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.[1] Subsequent 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.[2]

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 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 the interest rate on new special obligations will be the average market yield, as of the last business day of a month, on all of the outstanding marketable U.S. obligations that are due or callable more than 4 years in the future. The rate so calculated is rounded to the nearest one-eighth of one percent and applies to new issues in the following 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 any time at par value and thus bear no risk of fluctuations in principal value due to changes in market yield rates. Just as in the case of marketable Treasury securities held by the public, all of the

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[1] The additional tax revenues resulting from the increase to 85 percent are transferred to the HI Trust Fund.

[2] 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.

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 also include (1) the 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) net costs resulting from 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 is not available in the form of a financial asset redeemable for the payment of benefits or administrative expenditures, and therefore is not considered in assessing the actuarial status of the trust funds.

Table VI.A2.—Historical Operations of the OASI Trust Fund, Calendar Years 1937-2001
[Amounts in billions]

	Income				Expenditures				Assets		
Calendar year	Total[1]	Net contri-butions[2]	Taxa-tion of benefits	Net inter-est[3]	Total	Benefit pay-ments[4]	Admin-istra-tive costs	RRB inter-change	Net increase during year	Amount at end of year	Trust Fund ratio[5]
1937 . . .	$0.8	$0.8	—	6/	6/	6/	—	—	$0.8	$0.8	100
1938 . . .	.4	.4	—	6/	6/	6/	—	—	.4	1.1	7,660
1939 . . .	.6	.6	—	6/	6/	6/	—	—	.6	1.7	8,086
1940 . . .	.4	.3	—	6/	$0.1	6/	6/	—	.3	2.0	2,781
1941 . . .	.8	.8	—	$0.1	.1	$0.1	6/	—	.7	2.8	1,782
1942 . . .	1.1	1.0	—	.1	.2	.1	6/	—	.9	3.7	1,737
1943 . . .	1.3	1.2	—	.1	.2	.2	6/	—	1.1	4.8	1,891
1944 . . .	1.4	1.3	—	.1	.2	.2	6/	—	1.2	6.0	2,025
1945 . . .	1.4	1.3	—	.1	.3	.3	6/	—	1.1	7.1	1,975
1946 . . .	1.4	1.3	—	.2	.4	.4	6/	—	1.0	8.2	1,704
1947 . . .	1.7	1.6	—	.2	.5	.5	6/	—	1.2	9.4	1,592
1948 . . .	2.0	1.7	—	.3	.6	.6	$0.1	—	1.4	10.7	1,542
1949 . . .	1.8	1.7	—	.1	.7	.7	.1	—	1.1	11.8	1,487
1950 . . .	2.9	2.7	—	.3	1.0	1.0	.1	—	1.9	13.7	1,156
1951 . . .	3.8	3.4	—	.4	2.0	1.9	.1	—	1.8	15.5	698
1952 . . .	4.2	3.8	—	.4	2.3	2.2	.1	—	1.9	17.4	681
1953 . . .	4.4	3.9	—	.4	3.1	3.0	.1	—	1.3	18.7	564
1954 . . .	5.6	5.2	—	.4	3.7	3.7	.1	6/	1.9	20.6	500
1955 . . .	6.2	5.7	—	.5	5.1	5.0	.1	6/	1.1	21.7	405
1956 . . .	6.7	6.2	—	.5	5.8	5.7	.1	6/	.9	22.5	371
1957 . . .	7.4	6.8	—	.6	7.5	7.3	.2	6/	-.1	22.4	300
1958 . . .	8.1	7.6	—	.6	8.6	8.3	.2	$0.1	-.5	21.9	259
1959 . . .	8.6	8.1	—	.5	10.3	9.8	.2	.3	-1.7	20.1	212
1960 . . .	11.4	10.9	—	.5	11.2	10.7	.2	.3	.2	20.3	180
1961 . . .	11.8	11.3	—	.5	12.4	11.9	.2	.3	-.6	19.7	163
1962 . . .	12.6	12.1	—	.5	14.0	13.4	.3	.4	-1.4	18.3	141
1963 . . .	15.1	14.5	—	.5	14.9	14.2	.3	.4	.1	18.5	123
1964 . . .	16.3	15.7	—	.6	15.6	14.9	.3	.4	.6	19.1	118
1965 . . .	16.6	16.0	—	.6	17.5	16.7	.3	.4	-.9	18.2	109
1966 . . .	21.3	20.6	—	.6	19.0	18.3	.3	.4	2.3	20.6	96
1967 . . .	24.0	23.1	—	.8	20.4	19.5	.4	.5	3.7	24.2	101
1968 . . .	25.0	23.7	—	.9	23.6	22.6	.5	.4	1.5	25.7	103
1969 . . .	29.6	27.9	—	1.2	25.2	24.2	.5	.5	4.4	30.1	102
1970 . . .	32.2	30.3	—	1.5	29.8	28.8	.5	.6	2.4	32.5	101
1971 . . .	35.9	33.7	—	1.7	34.5	33.4	.5	.6	1.3	33.8	94
1972 . . .	40.1	37.8	—	1.8	38.5	37.1	.7	.7	1.5	35.3	88
1973 . . .	48.3	46.0	—	1.9	47.2	45.7	.6	.8	1.2	36.5	75
1974 . . .	54.7	52.1	—	2.2	53.4	51.6	.9	.9	1.3	37.8	68
1975 . . .	59.6	56.8	—	2.4	60.4	58.5	.9	1.0	-.8	37.0	63
1976 . . .	66.3	63.4	—	2.3	67.9	65.7	1.0	1.2	-1.6	35.4	54
1977 . . .	72.4	69.6	—	2.2	75.3	73.1	1.0	1.2	-2.9	32.5	47
1978 . . .	78.1	75.5	—	2.0	83.1	80.4	1.1	1.6	-5.0	27.5	39
1979 . . .	90.3	87.9	—	1.8	93.1	90.6	1.1	1.4	-2.9	24.7	30
1980 . . .	105.8	103.4	—	1.8	107.7	105.1	1.2	1.4	-1.8	22.8	23
1981 . . .	125.4	122.6	—	2.1	126.7	123.8	1.3	1.6	-1.3	21.5	18
1982 . . .	125.2	123.7	—	.8	142.1	138.8	1.5	1.8	.6	22.1	15
1983 . . .	150.6	138.3	—	6.7	153.0	149.2	1.5	2.3	-2.4	19.7	14
1984 . . .	169.3	164.1	$2.8	2.3	161.9	157.8	1.6	2.4	7.4	27.1	20
1985 . . .	184.2	177.0	3.2	1.9	171.2	167.2	1.6	2.3	[7]8.7	35.8	24
1986 . . .	197.4	190.7	3.4	3.1	181.0	176.8	1.6	2.6	[7]3.2	39.1	28
1987 . . .	210.7	202.7	3.3	4.7	187.7	183.6	1.5	2.6	23.1	62.1	30
1988 . . .	240.8	229.8	3.4	7.6	200.0	195.5	1.8	2.8	40.8	102.9	41
1989 . . .	264.7	250.2	2.4	12.0	212.5	208.0	1.7	2.8	52.2	155.1	59

Table VI.A2.—Historical Operations of the OASI Trust Fund, Calendar Years 1937-2001 (Cont.)

[Amounts in billions]

	Income				Expenditures				Assets		
Calendar year	Total[1]	Net contributions[2]	Taxation of benefits	Net interest[3]	Total	Benefit payments[4]	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust Fund ratio[5]
1990 . . .	$286.7	$267.5	$4.8	$16.4	$227.5	$223.0	$1.6	$3.0	$59.1	$214.2	78
1991 . . .	299.3	272.6	5.9	20.8	245.6	240.5	1.8	3.4	53.7	267.8	87
1992 . . .	311.2	281.0	5.9	24.3	259.9	254.9	1.8	3.1	51.3	319.2	103
1993 . . .	323.3	290.9	5.3	27.0	273.1	267.8	2.0	3.4	50.2	369.3	117
1994 . . .	328.3	293.3	5.0	29.9	284.1	279.1	1.6	3.4	44.1	413.5	130
1995 . . .	342.8	304.6	5.5	32.8	297.8	291.6	2.1	4.1	45.0	458.5	139
1996 . . .	363.7	321.6	6.5	35.7	308.2	302.9	1.8	3.6	55.5	514.0	149
1997 . . .	397.2	349.9	7.4	39.8	322.1	316.3	2.1	3.7	75.1	589.1	160
1998 . . .	424.8	371.2	9.1	44.5	332.3	326.8	1.9	3.7	92.5	681.6	177
1999 . . .	457.0	396.4	10.9	49.8	339.9	334.4	1.8	3.7	117.2	798.8	201
2000 . . .	490.5	421.4	11.6	57.5	358.3	352.7	2.1	3.5	132.2	931.0	223
2001 . . .	518.1	441.5	11.9	64.7	377.5	372.3	2.0	3.3	140.6	1,071.5	247

[1] Includes payments from the General Fund of the Treasury to the trust funds for (1) in 1947-51 and in 1966 and later, costs of noncontributory wage credits for military service performed before 1957; (2) in 1971-82, costs of deemed wage credits for military service performed after 1956; and (3) in 1968 and later, costs of benefits to certain uninsured persons who attained age 72 before 1968. Differences in past year total income and sum of individual column amounts are due to these payments. OASI historical payments from the General Fund of the Treasury may be found on the Internet at http://www.ssa.gov/OACT/STATS/t4a1Income.html.

[2] Beginning in 1983, includes transfers from the General Fund of the Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 through 2001, if such credits were considered to be covered wages.

[3] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged 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] 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.

[5] The "Trust fund ratio" column represents assets at the beginning of a year as a percentage of expenditures during the year. For years 1984-90, assets at the beginning of a year include January advance tax transfers.

[6] Less than $50 million.

[7] 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 $4.4 billion; in 1986, the amount was $13.2 billion.

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

Table VI.A3.—Historical Operations of the DI Trust Fund, Calendar Years 1957-2001
[Amounts in billions]

	Income				Expenditures				Assets		
Calendar year	Total [1]	Net contributions[2]	Taxation of benefits	Net interest[3]	Total	Benefit payments[4]	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust Fund ratio[5]
1957...	$0.7	$0.7	—	6/	$0.1	$0.1	6/	—	$0.6	$0.6	100
1958...	1.0	1.0	—	6/	.3	.2	6/	—	.7	1.4	249
1959...	.9	.9	—	6/	.5	.5	$0.1	6/	.4	1.8	284
1960...	1.1	1.0	—	$0.1	.6	.6	6/	6/	.5	2.3	304
1961...	1.1	1.0	—	.1	1.0	.9	.1	6/	.1	2.4	239
1962...	1.1	1.0	—	.1	1.2	1.1	.1	6/	-.1	2.4	206
1963...	1.2	1.1	—	.1	1.3	1.2	.1	6/	-.1	2.2	183
1964...	1.2	1.2	—	.1	1.4	1.3	.1	6/	-.2	2.0	159
1965...	1.2	1.2	—	.1	1.7	1.6	.1	6/	-.4	1.6	121
1966...	2.1	2.0	—	.1	1.9	1.8	.1	6/	.1	1.7	82
1967...	2.4	2.3	—	.1	2.1	2.0	.1	6/	.3	2.0	83
1968...	3.5	3.3	—	.1	2.5	2.3	.1	6/	1.0	3.0	83
1969...	3.8	3.6	—	.2	2.7	2.6	.1	6/	1.1	4.1	111
1970...	4.8	4.5	—	.3	3.3	3.1	.2	6/	1.5	5.6	126
1971...	5.0	4.6	—	.4	4.0	3.8	.2	6/	1.0	6.6	140
1972...	5.6	5.1	—	.4	4.8	4.5	.2	6/	.8	7.5	140
1973...	6.4	5.9	—	.5	6.0	5.8	.2	6/	.5	7.9	125
1974...	7.4	6.8	—	.5	7.2	7.0	.2	6/	.2	8.1	110
1975...	8.0	7.4	—	.5	8.8	8.5	.3	6/	-.8	7.4	92
1976...	8.8	8.2	—	.4	10.4	10.1	.3	6/	-1.6	5.7	71
1977...	9.6	9.1	—	.3	11.9	11.5	.4	6/	-2.4	3.4	48
1978...	13.8	13.4	—	.3	13.0	12.6	.3	6/	.9	4.2	26
1979...	15.6	15.1	—	.4	14.2	13.8	.4	6/	1.4	5.6	30
1980...	13.9	13.3	—	.5	15.9	15.5	.4	6/	-2.0	3.6	35
1981...	17.1	16.7	—	.2	17.7	17.2	.4	6/	-.6	3.0	21
1982...	22.7	22.0	—	.5	18.0	17.4	.6	6/	-.4	2.7	17
1983...	20.7	18.0	—	1.6	18.2	17.5	.6	6/	2.5	5.2	15
1984...	17.3	15.9	$0.2	1.2	18.5	17.9	.6	6/	-1.2	4.0	35
1985...	19.3	17.2	.2	.9	19.5	18.8	.6	6/	[7]2.4	6.3	27
1986...	19.4	18.4	.2	.8	20.5	19.9	.6	$0.1	[7] 1.5	7.8	38
1987...	20.3	19.7	6/	.6	21.4	20.5	.8	.1	-1.1	6.7	44
1988...	22.7	22.0	.1	.6	22.5	21.7	.7	.1	.2	6.9	38
1989...	24.8	24.0	.1	.7	23.8	22.9	.8	.1	1.0	7.9	38
1990...	28.8	28.5	.1	.9	25.6	24.8	.7	.1	3.2	11.1	40
1991...	30.4	29.1	.2	1.1	28.6	27.7	.8	.1	1.8	12.9	39
1992...	31.4	30.1	.2	1.1	32.0	31.1	.8	.1	-.6	12.3	40
1993...	32.3	31.2	.3	.8	35.7	34.6	1.0	.1	-3.4	9.0	35
1994...	52.8	51.4	.3	1.2	38.9	37.7	1.0	.1	14.0	22.9	23
1995...	56.7	54.4	.3	2.2	42.1	40.9	1.1	.1	14.6	37.6	55
1996...	60.7	57.3	.4	3.0	45.4	44.2	1.2	6/	15.4	52.9	83
1997...	60.5	56.0	.5	4.0	47.0	45.7	1.3	.1	13.5	66.4	113
1998...	64.4	59.0	.6	4.8	49.9	48.2	1.6	.2	14.4	80.8	133
1999...	69.5	63.2	.7	5.7	53.0	51.4	1.5	.1	16.5	97.3	152
2000...	77.9	71.1	.7	6.9	56.8	55.0	1.6	.2	21.1	118.5	171
2001...	83.9	74.9	.8	8.2	61.4	59.6	1.7	6/	22.5	141.0	193

[1] Includes payments from the General Fund of the Treasury to the trust funds for (1) beginning in 1966 and later, costs of noncontributory wage credits for military service performed before 1957 and (2) in 1971-82, costs of deemed wage credits for military service performed after 1956. Differences in past year total income and sum of individual column amounts are due to these payments. DI historical payments from the General Fund of the Treasury may be found on the Internet at http://www.ssa.gov/OACT/STATS/t4a2Income.html.

[2] Beginning in 1983, includes transfers from the General Fund of the Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 through 2001, if such credits were considered to be covered wages.
[3] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged 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] 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.
[5] The "Trust fund ratio" column represents assets at the beginning of a year as a percentage of expenditures during the year. For years 1984-90, assets at the beginning of a year include January advance tax transfers.
[6] Less than $50 million.
[7] Reflects offset for repayment from the OASI Trust Fund of amounts borrowed from the DI Trust Fund in 1982. An amount of $2.5 billion was repaid in each year 1985 and 1986.

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

Table VI.A4.—Historical Operations of the Combined OASI and DI Trust Funds, Calendar Years 1957-2001

[Amounts in billions]

	Income				Expenditures				Assets		
Calendar year	Total[1]	Net contributions[2]	Taxation of benefits	Net interest[3]	Total	Benefit payments[4]	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust Fund ratio[5]
1957 . . .	$8.1	$7.5	—	$0.6	$7.6	$7.4	$0.2	6/	$0.5	$23.0	298
1958 . . .	9.1	8.5	—	.6	8.9	8.6	.2	$0.1	.2	23.2	259
1959 . . .	9.5	8.9	—	.6	10.8	10.3	.2	.3	-1.3	22.0	215
1960 . . .	12.4	11.9	—	.6	11.8	11.2	.2	.3	.6	22.6	186
1961 . . .	12.9	12.3	—	.6	13.4	12.7	.3	.3	-.5	22.2	169
1962 . . .	13.7	13.1	—	.6	15.2	14.5	.3	.4	-1.5	20.7	146
1963 . . .	16.2	15.6	—	.6	16.2	15.4	.3	.4	6/	20.7	128
1964 . . .	17.5	16.8	—	.6	17.0	16.2	.4	.4	.5	21.2	122
1965 . . .	17.9	17.2	—	.7	19.2	18.3	.4	.5	-1.3	19.8	110
1966 . . .	23.4	22.6	—	.7	20.9	20.1	.4	.5	2.5	22.3	95
1967 . . .	26.4	25.4	—	.9	22.5	21.4	.5	.5	3.9	26.3	99
1968 . . .	28.5	27.0	—	1.0	26.0	25.0	.6	.5	2.5	28.7	101
1969 . . .	33.3	31.5	—	1.3	27.9	26.8	.6	.5	5.5	34.2	103
1970 . . .	37.0	34.7	—	1.8	33.1	31.9	.6	.6	3.9	38.1	103
1971 . . .	40.9	38.3	—	2.0	38.5	37.2	.7	.6	2.4	40.4	99
1972 . . .	45.6	42.9	—	2.2	43.3	41.6	.9	.7	2.3	42.8	93
1973 . . .	54.8	51.9	—	2.4	53.1	51.5	.8	.8	1.6	44.4	80
1974 . . .	62.1	58.9	—	2.7	60.6	58.6	1.1	.9	1.5	45.9	73
1975 . . .	67.6	64.3	—	2.9	69.2	67.0	1.2	1.0	-1.5	44.3	66
1976 . . .	75.0	71.6	—	2.7	78.2	75.8	1.2	1.2	-3.2	41.1	57
1977 . . .	82.0	78.7	—	2.5	87.3	84.7	1.4	1.2	-5.3	35.9	47
1978 . . .	91.9	88.9	—	2.3	96.0	93.0	1.4	1.6	-4.1	31.7	37
1979 . . .	105.9	103.0	—	2.2	107.3	104.4	1.5	1.5	-1.5	30.3	30
1980 . . .	119.7	116.7	—	2.3	123.6	120.6	1.5	1.4	-3.8	26.5	25
1981 . . .	142.4	139.4	—	2.2	144.4	141.0	1.7	1.6	-1.9	24.5	18
1982 . . .	147.9	145.7	—	1.4	160.1	156.2	2.1	1.8	.2	24.8	15
1983 . . .	171.3	156.3	—	8.3	171.2	166.7	2.2	2.3	.1	24.9	14
1984 . . .	186.6	180.1	$3.0	3.4	180.4	175.7	2.3	2.4	6.2	31.1	21
1985 . . .	203.5	194.1	3.4	2.7	190.6	186.1	2.2	2.4	[7]11.1	42.2	24
1986 . . .	216.8	209.1	3.7	3.9	201.5	196.7	2.2	2.7	[7]4.7	46.9	29
1987 . . .	231.0	222.4	3.2	5.3	209.1	204.1	2.4	2.6	21.9	68.8	31
1988 . . .	263.5	251.8	3.4	8.2	222.5	217.1	2.5	2.9	41.0	109.8	41
1989 . . .	289.4	274.2	2.5	12.7	236.2	230.9	2.4	2.9	53.2	163.0	57
1990 . . .	315.4	296.1	5.0	17.2	253.1	247.8	2.3	3.0	62.3	225.3	75
1991 . . .	329.7	301.7	6.1	21.9	274.2	268.2	2.6	3.5	55.5	280.7	82
1992 . . .	342.6	311.1	6.1	25.4	291.9	286.0	2.7	3.2	50.7	331.5	96
1993 . . .	355.6	322.1	5.6	27.9	308.8	302.4	3.0	3.4	46.8	378.3	107
1994 . . .	381.1	344.7	5.3	31.1	323.0	316.8	2.7	3.5	58.1	436.4	117
1995 . . .	399.5	359.0	5.8	35.0	339.8	332.6	3.1	4.1	59.7	496.1	128
1996 . . .	424.5	378.9	6.8	38.7	353.6	347.1	3.0	3.6	70.9	567.0	140
1997 . . .	457.7	406.0	7.9	43.8	369.1	362.0	3.4	3.7	88.6	655.5	154
1998 . . .	489.2	430.2	9.7	49.3	382.3	375.0	3.5	3.8	107.0	762.5	171
1999 . . .	526.6	459.6	11.6	55.5	392.9	385.8	3.3	3.8	133.7	896.1	194
2000 . . .	568.4	492.5	12.3	64.5	415.1	407.6	3.8	3.7	153.3	1,049.4	216
2001 . . .	602.0	516.4	12.7	72.9	438.9	431.9	3.7	3.3	163.1	1,212.5	239

[1] Includes payments from the General Fund of the Treasury to the trust funds for (1) beginning in 1966 and later, costs of noncontributory wage credits for military service performed before 1957; (2) in 1971-82, costs of deemed wage credits for military service performed after 1956; and (3) in 1968 and later, costs of benefits to certain uninsured persons who attained age 72 before 1968. Differences in past year total income and sum of individual column amounts are due to these payments. OASDI historical payments from the General Fund of the Treasury may be found on the Internet at http://www.ssa.gov/OACT/STATS/t4a3Income.html.

[2] Beginning in 1983, includes transfers from the General Fund of the Treasury representing contributions that would have been paid on deemed wage credits for military service in 1957 through 2001, if such credits were considered to be covered wages.
[3] Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged 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] 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.
[5] The "Trust fund ratio" column represents assets at the beginning of a year as a percentage of expenditures during the year. For years 1984-90, assets at the beginning of a year include January advance tax transfers.
[6] Less than $50 million.
[7] 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 $1.8 billion; in 1986, the amount was $10.6 billion.

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

B. HISTORY OF ACTUARIAL BALANCE ESTIMATES

This appendix chronicles the history of the principal summary measure of long-range actuarial status, namely the actuarial balance, since 1983. The 1983 report was the last report for which the actuarial balance was positive. Actuarial balance is defined in detail in chapter IV, 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, as shown in the reports for 1988 and later, 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 demographic and economic 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 21st century, so that

the program was partially advance funded, rather than being funded on a pay-as-you-go basis. Also, because of reductions 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 reintroduced.

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 VI.B1 shows the estimated OASDI actuarial balances, as well as the summarized income and cost rates, for the annual reports 1983-2001, along with the estimates for the current report. The values shown are based on the alternative II assumptions, or alternative II-B for years prior to 1991.

Table VI.B1.—Long-Range OASDI Actuarial Balances [1] as Shown in the Trustees' Reports for 1983-2002
[As a percentage of taxable payroll]

Year of report	Summarized income rate	Summarized cost rate	Actuarial balance	Change from previous year
1983	12.87	12.84	+0.02	+1.84
1984	12.90	12.95	-.06	-.08
1985	12.94	13.35	-.41	-.35
1986	12.96	13.40	-.44	-.03
1987	12.89	13.51	-.62	-.18
1988	12.94	13.52	-.58	+.04
1989	13.02	13.72	-.70	-.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
2000	13.51	15.40	-1.89	+.17
2001	13.58	15.44	-1.86	+.03
2002	13.72	15.59	-1.87	-.01

[1] Values shown are based on the alternative II assumptions for 1991-2002, and on the alternative II-B assumptions for 1982-90.
[2] Between -0.005 and 0.005 percent of taxable payroll.

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

For several of the years included in the table, significant legislative changes or definitional changes affected the estimated actuarial balance. The Social Security Amendments of 1983 accounted for the largest single change in recent history. The actuarial balance of -1.82 for the 1982 report improved to +0.02 for the 1983 report. In 1985, the estimated actuarial balance changed largely because of an adjustment made to the method for estimating the age distribution of immigrants.

Rebenchmarking of the National Income and Product Accounts and changes in demographic assumptions contributed to the change in the actuarial balance for 1987. Various changes in assumptions and methods for the 1988 report had roughly offsetting effects on the actuarial balance. 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 the 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 assumptions, 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 demographic and economic 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. In 1999, increases caused by changes in the economic assumptions related to improvements in the CPI by the Bureau of Labor Statistics accounted for most of the changes in the estimated actuarial balance. For the 2000 report, changes in the actuarial balance resulted from changes in economic assumptions and methodology; however, these increases in the balance were partially offset by reductions caused by the change in valuation period and changes in demographic assumptions. For the 2001 report, increases caused by changes in the demographic starting values, although partially offset by a decrease produced by the change in the valuation period, accounted for most of the changes in the estimated actuarial balance. Changes affecting the actuarial balance shown for the 2002 report are described in section IV.B.7.

C. FISCAL YEAR HISTORICAL DATA AND PROJECTIONS THROUGH 2011

Tables VI.C1, VI.C2, and VI.C3 present detailed operations of the OASI, DI, and the combined OASI and DI Trust Funds, respectively, for fiscal year 2001, the most recent fiscal year for which complete actual information is available. These tables are similar to the calendar year operations tables in section III.A. Please see that section for a description of the various items of income and outgo.

Table VI.C1.—Operations of the OASI Trust Fund, Fiscal Year 2001
[In millions]

Total assets, September 30, 2000		$893,003
Receipts:		
Contributions:		
Employment taxes	$443,471	
Payments from the General Fund of the Treasury for:		
Contributions subject to refund	-2,660	
Employee-employer contributions on deemed wage credits form military service	7	
Net contributions		440,819
Income based on taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	137	
All other, not subject to withholding	11,634	
Total income from taxation of benefits		11,771
Investment income and interest adjustments:		
Interest on investments	61,239	
Interest adjustments[1]	4	
Total investment income and interest adjustments		61,243
Gifts		2/
Total receipts		513,834
Disbursements:		
Benefit payments:		
Gross benefit payments	368,494	
Offset for collected overpayments	-781	
Reimbursement from the general fund for unnegotiated checks	-59	
Net benefit payments		367,654
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		3,273
Administrative expenses:		
Costs incurred by:		
Social Security Administration	1,855	
Department of the Treasury	226	
Offsetting receipts from sales of supplies, materials, etc.	-3	
Miscellaneous reimbursements from the general fund[3]	-8	
Net administrative expenses		2,069
Total disbursements		372,996
Net increase in assets		140,837
Total assets, September 30, 2001		1,033,840

[1] Includes (1) 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, (2) interest arising from the revised allocation of administrative expenses among the trust funds and (3) interest on reimbursements to the trust fund for costs associated with union activities and pension reform.

[2] Less than $500,000.

[3] Reimbursements for costs incurred in performing certain legislatively mandated activities not directly related to administering the OASI program.

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

Table VI.C2.—Operations of the DI Trust Fund, Fiscal Year 2001
[In millions]

Total assets, September 30, 2000		$113,752
Receipts:		
Contributions:		
Employment taxes	$75,056	
Payments from the General Fund of the Treasury for:		
Contributions subject to refund	-447	
Employee-employer contributions on deemed wage credits for military service	2	
Net contributions		74,611
Income based on taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	6	
All other, not subject to withholding	726	
Total income from taxation of benefits		732
Transfer from General Fund of the Treasury to adjust previous determinations of costs attributable to noncontributory wage credits for military service before 1957		-836
Investment income and interest adjustments:		
Interest on investments	7,572	
Interest adjustments[1]	2/	
Total investment income and interest adjustments		7,573
Total receipts		82,079
Disbursements:		
Benefit payments:		
Gross benefit payments	58,456	
Offset for collected overpayments	-340	
Reimbursement from the general fund for unnegotiated checks	-18	
Net benefit payments		58,098
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		10
Payment for costs of vocational rehabilitation services for disabled beneficiaries		61
Administrative expenses:		
Costs incurred by:		
Social Security Administration	1,723	
Department of the Treasury	43	
Miscellaneous reimbursements from the general fund[3]	-4	
Net administrative expenses		1,762
Total disbursements		59,930
Net increase in assets		22,149
Total assets, September 30, 2001		135,901

[1] Includes (1) 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, (2) interest arising from the revised allocation of administrative expenses among the trust funds, (3) interest earned on the investments of the trust fund, and (4) interest on reimbursements to the trust fund for costs associated with union activities and pension reform.

[2] Less than $500,000.

[3] Reimbursements for costs incurred in performing certain legislatively mandated activities not directly related to administering the DI program.

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

Table VI.C3.—Operations of the Combined OASI and DI Trust Funds, Fiscal Year 2001
[In millions]

Total assets, September 30, 2000		$1,006,754
Receipts:		
Contributions:		
Employment taxes	$518,527	
Payments from the General Fund of the Treasury for:		
Contributions subject to refund	-3,106	
Employee-employer contributions on deemed wage credits for military service	9	
Net contributions		515,430
Income based on taxation of benefit payments:		
Withheld from benefit payments to nonresident aliens	143	
All other, not subject to withholding	12,360	
Total income from taxation of benefits		12,503
Transfer from General Fund of the Treasury to adjust previous determinations of costs attributable to noncontributory wage credits for military service before 1957		-836
Investment income and interest adjustments:		
Interest on investments	68,812	
Interest adjustments[1]	4	
Total investment income and interest adjustments		68,816
Gifts		2/
Total receipts		595,913
Disbursements:		
Benefit payments:		
Gross benefit payments	426,951	
Offset for collected overpayments	-1,121	
Reimbursement from the general fund for unnegotiated checks	-78	
Net benefit payments		425,752
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		3,283
Payment for costs of vocational rehabilitation services for disabled beneficiaries		61
Administrative expenses:		
Costs incurred by:		
Social Security Administration	3,578	
Department of the Treasury	268	
Offsetting receipts from sales of supplies, materials, etc.	-3	
Miscellaneous reimbursements from the general fund[3]	-12	
Net administrative expenses		3,831
Total disbursements		432,926
Net increase in assets		162,987
Total assets, September 30, 2001		1,169,741

[1] Includes (1) 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, (2) interest arising from the revised allocation of administrative expenses among the trust funds, (3) interest earned on the investments of the trust fund, and (4) interest on reimbursements to the trust fund for costs associated with union activities and pension reform.
[2] Less than $500,000.
[3] Reimbursements for costs incurred in performing certain legislatively mandated activities not directly related to administering the OASI and DI programs.

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

Estimates of the operations and status of the OASI, DI and the combined OASI and DI Trust Funds during fiscal years (12 months ending on September 30) 1997-2011 are presented in tables VI.C4, VI.C5 and VI.C6, respectively.

Table VI.C4.—Operations of the OASI Trust Fund in Fiscal Years 1997-2011
[Amounts in billions]

	Income				Expenditures				Assets		
Fiscal year	Total[1]	Net contributions	Taxation of benefits	Net interest	Total	Benefit payments	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust fund ratio[2]
Historical data:											
1997 . . .	$386.5	$342.3	$6.5	$37.7	$318.5	$312.9	$2.0	$3.7	$67.9	$567.4	157
1998 . . .	415.7	364.9	8.6	42.2	330.0	324.3	2.0	3.7	85.7	653.1	172
1999 . . .	447.0	389.9	10.2	46.8	337.9	332.4	1.8	3.7	109.1	762.2	193
2000 . . .	484.2	418.2	12.5	53.5	353.4	347.9	2.0	3.5	130.8	893.0	216
2001 . . .	513.8	440.8	11.8	61.2	373.0	367.7	2.1	3.3	140.8	1,033.8	239
Intermediate:											
2002 . . .	528.4	447.4	12.7	68.0	389.6	383.7	2.2	3.7	138.9	1,172.7	265
2003 . . .	560.2	472.8	13.3	74.1	402.1	396.1	2.4	3.6	158.1	1,330.8	292
2004 . . .	595.5	497.2	14.1	84.2	417.9	412.0	2.4	3.5	177.6	1,508.4	318
2005 . . .	638.3	527.6	14.9	95.7	437.2	431.4	2.4	3.5	201.1	1,709.4	345
2006 . . .	676.4	552.1	15.7	108.6	459.1	453.4	2.4	3.4	217.4	1,926.8	372
2007 . . .	721.1	581.5	16.8	122.7	483.6	477.6	2.4	3.6	237.5	2,164.3	398
2008 . . .	765.5	609.8	18.2	137.4	510.9	504.9	2.4	3.6	254.6	2,418.9	424
2009 . . .	811.6	638.6	19.9	153.2	542.3	536.2	2.4	3.7	269.3	2,688.2	446
2010 . . .	863.5	672.7	21.8	169.0	577.7	571.5	2.4	3.8	285.8	2,973.9	465
2011 . . .	917.6	706.3	25.3	186.0	615.9	609.8	2.5	3.7	301.7	3,275.6	483
Low Cost:											
2002 . . .	531.9	450.7	12.7	68.1	389.4	383.6	2.2	3.7	142.4	1,176.3	265
2003 . . .	566.8	478.4	13.3	75.1	401.1	395.1	2.4	3.6	165.8	1,342.0	293
2004 . . .	604.5	504.9	14.0	85.6	414.4	408.5	2.4	3.5	190.1	1,532.1	324
2005 . . .	646.8	535.1	14.7	97.0	429.9	424.1	2.3	3.4	216.9	1,749.0	356
2006 . . .	680.4	556.4	15.3	108.7	446.9	441.3	2.3	3.3	233.5	1,982.5	391
2007 . . .	719.6	582.1	16.2	121.3	466.1	460.3	2.3	3.4	253.6	2,236.1	425
2008 . . .	760.0	607.5	17.4	135.1	487.5	481.8	2.3	3.4	272.4	2,508.5	459
2009 . . .	803.4	634.4	18.8	150.2	512.6	506.8	2.3	3.4	290.9	2,799.4	489
2010 . . .	852.9	666.3	20.4	166.1	540.9	535.1	2.4	3.5	312.0	3,111.4	518
2011 . . .	904.1	697.2	23.4	183.4	571.4	565.7	2.4	3.3	332.7	3,444.0	545
High Cost:											
2002 . . .	524.3	443.3	12.7	68.0	389.7	383.8	2.2	3.7	134.6	1,168.5	265
2003 . . .	557.0	469.2	13.4	74.5	403.1	397.1	2.4	3.6	153.9	1,322.4	290
2004 . . .	598.1	496.9	14.2	86.9	421.7	415.8	2.4	3.5	176.4	1,498.7	314
2005 . . .	647.5	528.8	15.3	103.4	448.8	442.9	2.4	3.5	198.7	1,697.5	334
2006 . . .	683.4	547.8	16.6	119.0	484.0	478.0	2.4	3.5	199.5	1,896.9	351
2007 . . .	749.3	591.9	18.2	139.2	523.3	517.0	2.5	3.9	226.0	2,123.0	362
2008 . . .	803.9	625.8	20.1	158.0	563.2	556.6	2.5	4.0	240.7	2,363.7	377
2009 . . .	852.0	657.7	22.2	172.2	604.4	597.6	2.6	4.2	247.7	2,611.3	391
2010 . . .	906.5	695.5	24.5	186.5	649.1	642.1	2.6	4.4	257.4	2,868.7	402
2011 . . .	963.2	733.4	28.6	201.2	697.4	690.3	2.6	4.4	265.8	3,134.5	411

[1] "Total Income" column includes transfers made between the OASI Trust Fund and the General Fund of the Treasury that are not included in the separate components of income shown. These transfers consist of payments for (1) the cost of noncontributory wage credits for military service before 1957, and (2) the cost of benefits to certain uninsured persons who attained age 72 before 1968. In 2002, these transfers include $414 million from the General Fund of the Treasury to the OASI Trust Fund for the cost of pre-1957 military service wage credits. Otherwise, these transfers are estimated to be less than $500,000 in each year of the projection period.

[2] The "Trust fund ratio" column represents assets at the beginning of a year (which are identical to assets at the end of the prior year shown in the "Amount at end of year" column) as a percentage of expenditures during the year. See text beginning on page 37 concerning interpretation of these ratios.

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

Table VI.C5.—Operations of the DI Trust Fund in Fiscal Years 1997-2011
[Amounts in billions]

	Income				Expenditures				Assets		
Fiscal year	Total[1]	Net contri-butions	Taxa-tion of benefits	Net inter-est	Total	Benefit pay-ments	Admin-istra-tive costs	RRB inter-change	Net increase during year	Amount at end of year	Trust fund ratio[2]
Historical data:											
1997. . .	$60.1	$56.2	$0.4	$3.5	$46.7	$45.4	$1.2	$0.1	$13.4	$63.5	107
1998. . .	62.9	58.0	.5	4.4	49.3	47.6	1.6	.2	13.6	77.1	129
1999. . .	67.8	61.9	.6	5.2	52.1	50.5	1.5	.1	15.7	92.7	148
2000. . .	77.0	70.0	.8	6.3	56.0	54.2	1.6	.2	21.0	113.8	166
2001. . .	82.1	74.6	.7	7.6	59.9	58.2	1.8	[3]	22.1	135.9	190
Intermediate:											
2002. . .	85.6	76.0	1.0	8.7	69.1	67.1	1.8	.2	16.5	152.4	197
2003. . .	90.7	80.3	1.0	9.4	71.5	69.5	1.8	.2	19.2	171.6	213
2004. . .	96.2	84.4	1.1	10.7	75.4	73.3	1.8	.2	20.8	192.4	228
2005. . .	102.8	89.6	1.2	12.1	81.4	79.1	2.0	.3	21.4	213.9	236
2006. . .	108.4	93.8	1.3	13.4	88.2	85.8	2.1	.3	20.2	234.1	242
2007. . .	114.8	98.8	1.4	14.7	95.6	93.0	2.2	.3	19.2	253.3	245
2008. . .	121.0	103.6	1.5	15.9	103.4	100.7	2.4	.4	17.6	270.8	245
2009. . .	127.1	108.4	1.7	16.9	111.4	108.5	2.5	.4	15.7	286.5	243
2010. . .	134.0	114.2	1.9	17.8	119.5	116.4	2.6	.5	14.5	301.0	240
2011. . .	140.8	119.9	2.3	18.6	128.0	124.8	2.8	.5	12.8	313.8	235
Low Cost:											
2002. . .	86.2	76.5	.9	8.7	68.4	66.4	1.8	.2	17.8	153.7	199
2003. . .	91.8	81.2	.9	9.6	69.9	67.9	1.8	.2	22.0	175.6	220
2004. . .	97.8	85.7	1.0	11.1	72.2	70.1	1.8	.2	25.7	201.3	243
2005. . .	104.6	90.9	1.1	12.7	76.4	74.2	2.0	.3	28.2	229.6	264
2006. . .	109.8	94.5	1.2	14.2	81.3	78.9	2.1	.3	28.6	258.1	283
2007. . .	115.8	98.9	1.2	15.7	86.4	83.9	2.2	.3	29.4	287.5	299
2008. . .	121.9	103.2	1.4	17.3	91.7	89.1	2.3	.4	30.1	317.6	313
2009. . .	128.2	107.7	1.5	19.0	96.9	94.1	2.4	.4	31.3	348.9	328
2010. . .	135.5	113.1	1.6	20.7	102.0	99.0	2.5	.4	33.5	382.4	342
2011. . .	142.8	118.4	1.9	22.5	107.3	104.2	2.7	.4	35.5	417.9	356
High Cost:											
2002. . .	84.9	75.3	1.0	8.7	70.6	68.6	1.8	.2	14.3	150.2	192
2003. . .	90.0	79.7	1.0	9.3	74.8	72.8	1.8	.2	15.2	165.4	201
2004. . .	96.1	84.4	1.1	10.6	81.0	79.0	1.8	.2	15.1	180.5	204
2005. . .	103.2	89.8	1.3	12.1	90.4	88.2	2.0	.3	12.7	193.2	200
2006. . .	107.5	93.0	1.4	13.0	101.9	99.4	2.2	.3	5.6	198.8	190
2007. . .	115.9	100.5	1.6	13.7	114.2	111.5	2.4	.4	1.7	200.5	174
2008. . .	122.0	106.3	1.9	13.9	126.3	123.3	2.5	.4	-4.3	196.2	159
2009. . .	127.3	111.7	2.1	13.5	137.8	134.7	2.6	.5	-10.5	185.7	142
2010. . .	133.2	118.1	2.4	12.7	149.2	145.9	2.8	.5	-16.0	169.7	124
2011. . .	138.9	124.5	2.9	11.5	161.4	157.8	3.0	.6	-22.4	147.3	105

[1] "Total Income" column includes transfers made between the DI Trust Fund and the General Fund of the Treasury that are not included in the separate components of income shown. These transfers consist of payments for the cost of noncontributory wage credits for military service before 1957. In particular, a transfer was made in December 2000 in the amount of $836 million from the DI Trust Fund to the General Fund of the Treasury. Such transfers are estimated to be less than $500,000 in each year of the projection period.
[2] The "Trust fund ratio" column represents assets at the beginning of a year (which are identical to assets at the end of the prior year shown in the "Amount at end of year" column) as a percentage of expenditures during the year. See text beginning on page 37 concerning interpretation of these ratios.
[3] Less than $50 million.

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

Table VI.C6.—Operations of the Combined OASI and DI Trust Funds in Fiscal Years 1997-2011

[Amounts in billions]

	Income				Expenditures				Assets		
Fiscal year	Total[1]	Net contributions	Taxation of benefits	Net interest	Total	Benefit payments	Administrative costs	RRB interchange	Net increase during year	Amount at end of year	Trust fund ratio[2]
Historical data:											
1997...	$446.6	$398.5	$6.9	$41.2	$365.2	$358.3	$3.2	$3.7	$81.3	$630.9	150
1998...	478.6	422.9	9.1	46.6	379.3	371.9	3.6	3.8	99.3	730.2	166
1999...	514.7	451.9	10.8	52.1	390.0	382.8	3.4	3.8	124.7	854.9	187
2000...	561.3	488.2	13.2	59.8	409.4	402.1	3.6	3.7	151.8	1,006.8	209
2001...	595.9	515.4	12.5	68.8	432.9	425.8	3.8	3.3	163.0	1,169.7	233
Intermediate:											
2002...	614.0	523.3	13.6	76.7	458.6	450.8	4.0	3.9	155.4	1,325.1	255
2003...	650.8	553.1	14.3	83.5	473.6	465.6	4.2	3.8	177.2	1,502.4	280
2004...	691.7	581.6	15.2	94.9	493.2	485.3	4.2	3.8	198.4	1,700.8	305
2005...	741.2	617.2	16.1	107.8	518.6	510.5	4.3	3.8	222.5	1,923.3	328
2006...	784.9	645.9	17.0	122.0	547.3	539.2	4.5	3.6	237.6	2,160.9	351
2007...	835.9	680.3	18.2	137.4	579.2	570.7	4.6	3.9	256.7	2,417.6	373
2008...	886.4	713.4	19.8	153.3	614.3	605.5	4.8	4.0	272.2	2,689.7	394
2009...	938.7	747.1	21.6	170.1	653.7	644.7	4.9	4.1	285.0	2,974.7	411
2010...	997.5	786.9	23.8	186.8	697.2	687.9	5.1	4.2	300.3	3,275.0	427
2011...	1,058.4	826.3	27.6	204.6	744.0	734.5	5.2	4.2	314.5	3,589.4	440
Low Cost:											
2002...	618.0	527.2	13.6	76.8	457.8	450.0	4.0	3.9	160.2	1,330.0	256
2003...	658.7	559.7	14.2	84.8	470.9	462.9	4.2	3.8	187.7	1,517.7	282
2004...	702.3	590.6	15.0	96.7	486.5	478.6	4.2	3.7	215.8	1,733.5	312
2005...	751.4	626.0	15.8	109.6	506.3	498.3	4.3	3.7	245.1	1,978.6	342
2006...	790.3	650.9	16.5	122.9	528.2	520.2	4.4	3.5	262.1	2,240.6	375
2007...	835.5	681.0	17.5	137.0	552.5	544.2	4.5	3.8	283.0	2,523.6	406
2008...	881.8	710.6	18.8	152.5	579.3	570.8	4.6	3.8	302.6	2,826.1	436
2009...	931.6	742.2	20.3	169.2	609.5	600.9	4.8	3.8	322.1	3,148.3	464
2010...	988.4	779.5	22.1	186.8	642.9	634.2	4.9	3.9	345.5	3,493.7	490
2011...	1,046.9	815.6	25.3	205.9	678.7	669.9	5.0	3.8	368.2	3,861.9	515
High Cost:											
2002...	609.2	518.5	13.6	76.6	460.3	452.5	4.0	3.9	148.9	1,318.6	254
2003...	647.0	548.9	14.4	83.8	477.9	469.9	4.2	3.8	169.1	1,487.7	276
2004...	694.2	581.3	15.4	97.6	502.7	494.7	4.2	3.8	191.5	1,679.2	296
2005...	750.7	618.6	16.6	115.4	539.3	531.1	4.4	3.8	211.4	1,890.7	311
2006...	790.9	640.9	18.0	132.0	585.8	577.4	4.6	3.8	205.1	2,095.8	323
2007...	865.2	692.4	19.9	152.9	637.5	628.4	4.9	4.2	227.7	2,323.5	329
2008...	925.9	732.0	22.0	171.9	689.4	679.9	5.0	4.5	236.4	2,559.9	337
2009...	979.3	769.4	24.3	185.7	742.1	732.2	5.2	4.7	237.1	2,797.1	345
2010...	1,039.7	813.7	26.9	199.1	798.3	788.0	5.4	4.9	241.4	3,038.5	350
2011...	1,102.1	857.9	31.5	212.6	858.7	848.1	5.6	5.0	243.4	3,281.8	354

[1] "Total Income" column includes transfers made between the OASI and DI Trust Funds and the General Fund of the Treasury that are not included in the separate components of income shown. These transfers consist of payments for (1) the cost of noncontributory wage credits for military service before 1957, and (2) the cost of benefits to certain uninsured persons who attained age 72 before 1968. In particular, a transfer was made in December 2000 in the amount of $836 million from the DI Trust Fund to the General Fund of the Treasury. In 2002, $414 million was transferred from the General Fund of the Treasury to the OASI Trust Fund for the cost of pre-1957 military service wage credits. Otherwise, these transfers are estimated to be less than $500,000 in each year of the projection period.

[2] The "Trust fund ratio" column represents assets at the beginning of a year (which are identical to assets at the end of the prior year shown in the "Amount at end of year" column) as a percentage of expenditures during the year. See text beginning on page 37 concerning interpretation of these ratios.

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

D. LONG-RANGE SENSITIVITY ANALYSIS

This appendix presents estimates which illustrate the sensitivity of the long-range actuarial status of the OASDI program to changes in selected individual assumptions. The estimates based on the three alternative sets of assumptions (see sections IV.B, V.A, and V.B) 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 appendix, the intermediate alternative II projection is used as the reference point, and one assumption at a time is varied within that alternative. The variation used for each individual assumption reflects the levels used for that assumption in the low cost alternative I and high cost alternative III projections. 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 for 25-year, 50-year, and 75-year valuation periods. Because the annual payroll tax rate is constant for the entire 75-year valuation period, the income rate varies only slightly with changes in assumptions and, therefore, 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 VI.D1 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 1.7, 1.95, 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 2026.

Table VI.D1.—Sensitivity to Varying Fertility Assumptions
[As a percentage of taxable payroll]

Valuation period	Ultimate total fertility rate[1,2]		
	1.7	1.95	2.2
Summarized income rate:			
25-year: 2002-26	14.21	14.21	14.22
50-year: 2002-51	13.82	13.82	13.81
75-year: 2002-76	13.75	13.72	13.69
Summarized cost rate:			
25-year: 2002-26	12.96	12.98	13.00
50-year: 2002-51	14.84	14.77	14.71
75-year: 2002-76	15.91	15.59	15.29
Actuarial balance:			
25-year: 2002-26	+1.25	+1.24	+1.22
50-year: 2002-51	-1.02	-.95	-.90
75-year: 2002-76	-2.16	-1.87	-1.60
Year of combined trust fund exhaustion	2041	2041	2041

[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 2026.
[2] Ultimate total fertility rates used for this analysis are 1.7 from the alternative III assumptions, 1.95 from the alternative II assumptions, and 2.2 from the alternative I assumptions. All other assumptions used for this analysis are from alternative II.

For the 25-year period, the cost rate for the three fertility assumptions varies by only about 0.04 percent of taxable payroll. In contrast, the 75-year cost rate varies over a wide range, decreasing from 15.91 to 15.29 percent, as the assumed ultimate total fertility rate increases from 1.7 to 2.2. Similarly, while the 25-year actuarial balance varies by only 0.03 percent of taxable payroll, the 75-year actuarial balance varies over a much wider range, from -2.16 to -1.60 percent.

During the 25-year period, the very slight increases in the working population resulting from increases in fertility are more than offset by decreases in the female labor force and 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 VI.D2 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 for the period 2001-76. These assumptions

are the same as those used for alternatives I, II, and III, which are described in section V.A.2. The age-sex-adjusted death rates decline at average annual rates of 0.32 percent, 0.75 percent, and 1.33 percent 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 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 VI.D2.—Sensitivity to Varying Death-Rate Assumptions
[As a percentage of taxable payroll]

Valuation period	Average annual death-rate reduction[1, 2]		
	0.32 percent	0.75 percent	1.33 percent
Summarized income rate:			
25-year: 2002-26	14.21	14.21	14.22
50-year: 2002-51	13.80	13.82	13.84
75-year: 2002-76	13.69	13.72	13.75
Summarized cost rate:			
25-year: 2002-26	12.81	12.98	13.16
50-year: 2002-51	14.31	14.77	15.30
75-year: 2002-76	14.90	15.59	16.42
Actuarial balance:			
25-year: 2002-26	+1.40	+1.24	+1.06
50-year: 2002-51	-.51	-.95	-1.47
75-year: 2002-76	-1.21	-1.87	-2.67
Year of combined trust fund exhaustion	2046	2041	2038

[1] The average annual death-rate reduction is the average annual decline in the age-sex-adjusted death rate during 2001-76. The overall decreases from the age-sex-adjusted death rate in 2001 to the corresponding rate in 2076 are, in order, 21 percent, 43 percent, and 63 percent.
[2] The average annual death-rate reductions used for this analysis are 0.32 percent from the alternative I assumptions, 0.75 percent from the alternative II assumptions, and 1.33 percent from the alternative III assumptions. All other assumptions used for this analysis are from alternative II.

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 12.81 percent (for an average annual death-rate reduction of 0.32 percent) to 13.16 percent (for an average annual death-rate reduction of 1.33 percent). The 75-year cost rate increases from 14.90 to 16.42 percent. The actuarial balance decreases from +1.40 to +1.06 percent for the 25-year period, and from -1.21 to -2.67 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 are age 62 and over (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 at these pre-retirement ages, which are ages of high disability incidence. 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 and, therefore, lower actuarial balances. Each additional 0.1-percentage-point reduction in the average annual death-rate reduction, relative to the 0.75-percent reduction assumed for alternative II, decreases the long-range actuarial balance by about 0.14 percent of taxable payroll.

3. Net Immigration

Table VI.D3 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 655,000 persons, 900,000 persons, and 1,210,000 persons as assumed for alternatives III, II, and I, respectively.

Table VI.D3.—Sensitivity to Varying Net-Immigration Assumptions
[As a percentage of taxable payroll]

Valuation period	Net immigration per year[1, 2]		
	655,000	900,000	1,210,000
Summarized income rate:			
25-year: 2002-26	14.23	14.21	14.19
50-year: 2002-51	13.84	13.82	13.79
75-year: 2002-76	13.74	13.72	13.68
Summarized cost rate:			
25-year: 2002-26	13.07	12.98	12.86
50-year: 2002-51	14.95	14.77	14.55
75-year: 2002-76	15.80	15.59	15.34
Actuarial balance:			
25-year: 2002-26	+1.16	+1.24	+1.33
50-year: 2002-51	-1.11	-.95	-.76
75-year: 2002-76	-2.06	-1.87	-1.65
Year of combined trust fund exhaustion	2039	2041	2043

[1] Net immigration per year is the assumed annual net immigration to the Social Security area, including both legal and other-than-legal immigration.
[2] The net immigration per year assumptions used for this analysis are 655,000 from the alternative III assumptions, 900,000 from the alternative II assumptions, and 1,210,000 from the alternative I assumptions. All other assumptions used for this analysis are from alternative II.

For all three periods, the cost rate decreases with increasing rates of net immigration. For the 25-year period, the cost rate decreases from 13.07 percent of taxable payroll (for annual net immigration of 655,000 persons) to 12.86 percent (for annual net immigration of 1,210,000 persons). For the 50-year period, it decreases from 14.95 percent to 14.55 percent, and for the 75-year period, it decreases from 15.80 percent to 15.34 percent. The actuarial balance increases from +1.16 to +1.33 percent for the 25-year period, from -1.11 to -0.76 for the 50-year period, and from -2.06 to -1.65 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 VI.D4 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 0.6 percentage point, 1.1 percentage points, and 1.6 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 3.0 percent (as assumed for alternative II), yielding ultimate percentage increases in average annual wages in covered employment of 3.6, 4.1, and 4.6 percent under alternatives III, II, and I, respectively.

For the 25-year period, the cost rate decreases from 13.36 percent (for a real-wage differential of 0.6 percentage point) to 12.59 percent (for a differential of 1.6 percentage points). For the 50-year period, it decreases from 15.34 to 14.19 percent, and for the 75-year period it decreases from 16.19 to 14.96 percent. The actuarial balance increases from +0.93 to +1.54 percent for the 25-year period, from -1.42 to -0.47 for the 50-year period, and from -2.37 to -1.36 percent for the 75-year period.

Table VI.D4.—Sensitivity to Varying Real-Wage Assumptions
[As a percentage of taxable payroll]

Valuation period	Ultimate percentage increase in wages-CPI[1, 2]		
	3.6-3.0	4.1-3.0	4.6-3.0
Summarized income rate:			
25-year: 2002-26	14.29	14.21	14.14
50-year: 2002-51	13.92	13.82	13.72
75-year: 2002-76	13.83	13.72	13.61
Summarized cost rate:			
25-year: 2002-26	13.36	12.98	12.59
50-year: 2002-51	15.34	14.77	14.19
75-year: 2002-76	16.19	15.59	14.96
Actuarial balance:			
25-year: 2002-26	+.93	+1.24	+1.54
50-year: 2002-51	-1.42	-.95	-.47
75-year: 2002-76	-2.37	-1.87	-1.36
Year of combined trust fund exhaustion	2037	2041	2047

[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.
[2] The ultimate percentage increase in wages to CPI assumptions used for this analysis are 3.6-3.0 percent from the alternative III assumptions, 4.1-3.0 percent from the alternative II assumptions, and 4.6-3.0 percent from the alternative I assumptions. All other assumptions used for this analysis are from alternative II.

The cost rate decreases with increasing real-wage differentials, because, higher wages affect the taxable payroll immediately but increase benefit levels only gradually as new beneficiaries become entitled. In addition, cost-of-living adjustments (COLAs) to benefits are not affected by changes in wages, but only in prices. 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 VI.D5 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 2.0 percent, 3.0 percent, and 4.0 percent as assumed for alternatives I, II, and III, respectively. In each case, the ultimate real-wage differential is assumed to be 1.1 percentage points (as assumed for alternative II), yielding ultimate percentage increases in average annual wages in covered employment of 3.1, 4.1, and 5.1 percent under alternatives I, II, and III, respectively.

Table VI.D5.—Sensitivity to Varying CPI-Increase Assumptions
[As a percentage of taxable payroll]

Valuation period	Ultimate percentage increase in wages-CPI[1, 2]		
	3.1-2.0	4.1-3.0	5.1-4.0
Summarized income rate:			
25-year: 2002-26	14.24	14.21	14.18
50-year: 2002-51	13.84	13.82	13.79
75-year: 2002-76	13.74	13.72	13.69
Summarized cost rate:			
25-year: 2002-26	13.12	12.98	12.82
50-year: 2002-51	14.98	14.77	14.55
75-year: 2002-76	15.83	15.59	15.34
Actuarial balance:			
25-year: 2002-26	+1.12	+1.24	+1.36
50-year: 2002-51	-1.14	-.95	-.76
75-year: 2002-76	-2.09	-1.87	-1.65
Year of combined trust fund exhaustion	2039	2041	2043

[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.
[2] The ultimate percentage increase in wages to CPI assumptions used for this analysis are 3.1-2.0 percent from the alternative I assumptions, 4.1-3.0 percent from the alternative II assumptions, and 5.1-4.0 percent from the alternative III assumptions. All other assumptions used for this analysis are from alternative II.

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 13.12 (for CPI increases of 2.0 percent) to 12.82 percent (for CPI increases of 4.0 percent). For the 50-year period, it decreases from 14.98 to 14.55 percent, and for the 75-year period, it decreases from 15.83 to 15.34 percent. The actuarial balance increases from +1.12 to +1.36 percent for the 25-year period, from -1.14 to -0.76 for the 50-year period, and from -2.09 to -1.65 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 combination with a constant real-wage differential), the effect on taxable payroll due to a greater rate of increase in average wages is experienced immediately, while the effect on benefits due to a larger COLA is experienced with a lag of about 1 year. 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 0.22 percent of taxable payroll.

6. Real Interest Rate

Table VI.D6 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 3.0 percent (as assumed for alternative II), resulting in ultimate annual yields of 5.3, 6.1, and 6.8 percent under alternatives III, II, and I, respectively.

Table VI.D6.—Sensitivity to Varying Real-Interest Assumptions
[As a percentage of taxable payroll]

Valuation period	Ultimate annual real interest rate[1, 2]		
	2.2 percent	3.0 percent	3.7 percent
Summarized income rate:			
25-year: 2002-26	14.14	14.21	14.28
50-year: 2002-51	13.73	13.82	13.90
75-year: 2002-76	13.63	13.72	13.80
Summarized cost rate:			
25-year: 2002-26	13.13	12.98	12.85
50-year: 2002-51	15.13	14.77	14.47
75-year: 2002-76	16.11	15.59	15.16
Actuarial balance:			
25-year: 2002-26	+1.02	+1.24	+1.43
50-year: 2002-51	-1.39	-.95	-.58
75-year: 2002-76	-2.48	-1.87	-1.35
Year of combined trust fund exhaustion	2038	2041	2045

[1] The ultimate real interest rate is defined to be the effective annual yield on assets held by the trust funds divided by the annual rate of growth in the CPI.
[2] The ultimate annual real interest rates used for this analysis are 2.2 percent from the alternative III assumptions, 3.0 percent from the alternative II assumptions, and 3.7 percent from the alternative I assumptions. All other assumptions used for this analysis are from alternative II.

For the 25-year period, the cost rate decreases slightly with increasing real interest rates from 13.13 percent (for an ultimate real interest rate of 2.2 percent) to 12.85 percent (for an ultimate real interest rate of 3.7 percent). For the 50-year period, it decreases from 15.13 to 14.47 percent, and for the 75-year period, it decreases from 16.11 to 15.16 percent. The actuarial balance increases from +1.02 to +1.43 percent for the 25-year period, from -1.39 to -0.58 percent for the 50-year period, and from -2.48 to -1.35 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 0.37 percent of taxable payroll.

7. Disability Incidence Rates

Table VI.D7 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 2027. The ultimate levels attained vary by sex. In comparison to the corresponding annual rates experienced during the base period 1994-96, the ultimate rates for men are about 14 percent lower for alternative I, about 8 percent higher for alternative II, and about 29 percent higher for alternative III. For women they are about 19 percent lower for alternative I, 2 percent higher for alternative II, and 22 percent higher for alternative III.

Table VI.D7.—Sensitivity to Varying 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: 2002-26	14.21	14.21	14.22
50-year: 2002-51	13.81	13.82	13.82
75-year: 2002-76	13.71	13.72	13.72
Summarized cost rate:			
25-year: 2002-26	12.77	12.98	13.20
50-year: 2002-51	14.50	14.77	15.04
75-year: 2002-76	15.30	15.59	15.88
Actuarial balance:			
25-year: 2002-26	+1.44	+1.24	+1.01
50-year: 2002-51	-.69	-.95	-1.22
75-year: 2002-76	-1.59	-1.87	-2.16
Year of combined trust fund exhaustion	2044	2041	2038

For the 25-year period, the cost rate increases with increasing disability incidence rates from 12.77 percent (for the relatively low rates assumed for alternative I) to 13.20 percent (for the relatively high rates assumed for alternative III). For the 50-year period, it increases from 14.50 to 15.04 percent, and for the 75-year period, it increases from 15.30 to 15.88 percent. The actuarial balance decreases from +1.44 to +1.01 percent for the 25-year period, from -0.69 to -1.22 percent for the 50-year period, and from -1.59 to -2.16 percent for the 75-year period.

8. Disability Termination Rates

Table VI.D8 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 53 percent and 45 percent lower than those experienced during the base period

1991-95. 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 34 percent and 72 percent lower than those experienced during the base period; for women the corresponding rates are about 22 percent and 68 percent lower than those experienced during the base period.

For all three alternatives, ultimate recovery-termination rates by age and sex are assumed to be attained in 2021. For alternative II, such rates are assumed to be 87 percent higher for men and 58 percent higher for women than those experienced in the base period, 1991-95. The ultimate rates for alternative I are assumed to be 125 percent higher for men and 89 percent higher for women than those experienced in the base period. The ultimate rates for alternative III are assumed to be 50 percent higher for men and 26 percent higher for women than those experienced in the base period.

Table VI.D8.—Sensitivity to Varying 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: 2002-26	14.21	14.21	14.21
50-year: 2002-51	13.82	13.82	13.82
75-year: 2002-76	13.72	13.72	13.72
Summarized cost rate:			
25-year: 2002-26	12.93	12.98	13.02
50-year: 2002-51	14.73	14.77	14.81
75-year: 2002-76	15.55	15.59	15.63
Actuarial balance:			
25-year: 2002-26	+1.28	+1.24	+1.19
50-year: 2002-51	-.91	-.95	-1.00
75-year: 2002-76	-1.83	-1.87	-1.91
Year of combined trust fund exhaustion	2041	2041	2040

For the 25-year period, the cost rate increases with decreasing disability termination rates from 12.93 percent (for the relatively high rates assumed for alternative I) to 13.02 percent (for the relatively low rates assumed for alternative III). For the 50-year period, it increases from 14.73 to 14.81 percent, and for the 75-year period, it increases from 15.55 to 15.63 percent. The actuarial balance decreases from +1.28 to +1.19 percent for the 25-year period, from -0.91 to -1.00 percent for the 50-year period, and from -1.83 to -1.91 percent for the 75-year period.

E. ESTIMATES FOR OASDI AND HI, SEPARATE AND COMBINED

In this appendix, long-range actuarial estimates for the OASDI and Hospital Insurance (HI) programs are presented separately and on a combined basis. These estimates facilitate analysis of the adequacy of the income and assets of these programs relative to their expenditures under current law. Estimates for the Supplementary Medical Insurance (SMI) program are not included in this appendix because adequate financing is guaranteed in the law, and because the SMI program is not financed through a payroll tax.

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.

1. Estimates as a Percentage of Taxable Payroll

Comparing and combining cost and income rates for the OASDI and HI programs 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 section 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.

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 VI.E1.

Table VI.E1.—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 VI.A1 in the section titled "History of the OASI and DI Trust Fund Operations" for a description of tax credits allowed against the combined OASDI and HI taxes on net earnings from self-employment in 1984-89.

Table VI.E2 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 ending target trust fund balances. Table VI.E2 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 borrowing by or transfers among these trust funds.

Under all three sets of assumptions, the combined OASDI and HI cost rate is projected to rise above current levels, with the sharpest increase occurring during the period 2010-30. Under the high cost set of assumptions, annual deficits are projected to occur beginning in 2012, and to continue for the remainder of the 75-year projection period. The cost rate is projected to rise to about four times its current level by the end of the projection period. Under the intermediate assumptions, annual deficits begin by 2017, with the cost rate more than doubling by the end of the projection period. Under the low cost assumptions, the cost rate is projected to increase by nearly 50 percent, by the end of the period, with annual deficits beginning by 2024.

Table VI.E2.—Estimated OASDI and HI Annual Income Rates, Cost Rates, and Balances,[1] Calendar Years 2002-80

[As a percentage of taxable payroll[1]]

	OASDI			HI			Combined		
Calendar year	Income rate[2]	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate[2]	Cost rate	Balance
Intermediate:									
2002	12.73	10.84	1.88	3.06	2.75	0.32	15.79	13.59	2.20
2003	12.72	10.51	2.21	3.07	2.65	.41	15.79	13.16	2.63
2004	12.72	10.46	2.26	3.07	2.66	.41	15.79	13.12	2.67
2005	12.73	10.46	2.26	3.07	2.67	.40	15.79	13.13	2.66
2006	12.73	10.50	2.23	3.07	2.68	.39	15.79	13.18	2.62
2007	12.73	10.57	2.16	3.07	2.70	.38	15.81	13.27	2.54
2008	12.75	10.68	2.07	3.08	2.73	.35	15.83	13.41	2.42
2009	12.76	10.84	1.92	3.09	2.77	.33	15.85	13.61	2.24
2010	12.78	11.04	1.74	3.10	2.81	.29	15.88	13.84	2.04
2011	12.83	11.25	1.58	3.13	2.86	.27	15.95	14.11	1.85
2015	12.90	12.36	.54	3.16	3.12	.04	16.06	15.48	.58
2020	13.01	14.24	-1.22	3.22	3.59	-.38	16.23	17.83	-1.60
2025	13.12	16.02	-2.90	3.27	4.19	-.92	16.39	20.21	-3.81
2030	13.20	17.24	-4.04	3.32	4.89	-1.58	16.52	22.13	-5.62
2035	13.25	17.77	-4.52	3.34	5.58	-2.24	16.59	23.35	-6.76
2040	13.26	17.77	-4.51	3.34	6.18	-2.84	16.61	23.95	-7.34
2045	13.27	17.78	-4.51	3.35	6.70	-3.35	16.62	24.48	-7.86
2050	13.29	17.92	-4.63	3.35	7.16	-3.81	16.64	25.08	-8.44
2055	13.31	18.24	-4.93	3.36	7.64	-4.27	16.68	25.88	-9.20
2060	13.34	18.60	-5.27	3.38	8.22	-4.84	16.71	26.82	-10.10
2065	13.36	18.98	-5.62	3.39	8.92	-5.53	16.75	27.90	-11.15
2070	13.39	19.38	-6.00	3.40	9.74	-6.34	16.79	29.12	-12.34
2075	13.41	19.76	-6.35	3.41	10.61	-7.19	16.82	30.37	-13.55
2080	13.43	20.11	-6.68	3.42	11.52	-8.09	16.85	31.63	-14.78
Low Cost:									
2002	12.73	10.71	2.01	3.06	2.66	.40	15.79	13.37	2.42
2003	12.71	10.30	2.41	3.06	2.52	.54	15.78	12.83	2.95
2004	12.71	10.13	2.59	3.06	2.48	.58	15.78	12.60	3.17
2005	12.71	10.06	2.66	3.06	2.44	.62	15.78	12.50	3.28
2006	12.71	10.04	2.67	3.06	2.41	.65	15.78	12.45	3.32
2007	12.72	10.06	2.66	3.07	2.38	.69	15.79	12.44	3.34
2008	12.73	10.09	2.64	3.07	2.37	.71	15.80	12.46	3.35
2009	12.74	10.16	2.58	3.08	2.35	.73	15.82	12.51	3.31
2010	12.75	10.26	2.50	3.09	2.34	.75	15.85	12.60	3.25
2011	12.80	10.38	2.42	3.11	2.34	.77	15.91	12.72	3.19
2015	12.85	11.19	1.66	3.14	2.38	.77	15.99	13.57	2.42
2020	12.95	12.71	.24	3.19	2.49	.70	16.14	15.19	.95
2025	13.03	14.09	-1.05	3.24	2.63	.60	16.27	16.72	-.45
2030	13.10	14.92	-1.82	3.27	2.80	.47	16.36	17.72	-1.35
2035	13.12	15.06	-1.94	3.28	2.96	.32	16.40	18.02	-1.62
2040	13.12	14.71	-1.59	3.28	3.10	.17	16.39	17.81	-1.42
2045	13.11	14.38	-1.27	3.27	3.25	.02	16.38	17.63	-1.25
2050	13.11	14.21	-1.11	3.27	3.43	-.16	16.38	17.64	-1.26
2055	13.11	14.20	-1.09	3.27	3.65	-.38	16.38	17.86	-1.47
2060	13.12	14.21	-1.09	3.27	3.93	-.66	16.39	18.14	-1.75
2065	13.12	14.18	-1.06	3.27	4.27	-1.00	16.40	18.45	-2.06
2070	13.12	14.19	-1.06	3.27	4.66	-1.39	16.40	18.85	-2.45
2075	13.13	14.23	-1.10	3.28	5.08	-1.80	16.40	19.30	-2.90
2080	13.13	14.31	-1.18	3.28	5.51	-2.23	16.41	19.82	-3.41

Table VI.E2.—Estimated OASDI and HI Annual Income Rates, Cost Rates, and Balances,[1] Calendar Years 2002-80 (Cont.)
[As a percentage of taxable payroll[1]]

	OASDI			HI			Combined		
Calendar year	Income rate[2]	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate[2]	Cost rate	Balance
High Cost:									
2002	12.73	11.02	1.71	3.07	2.85	0.22	15.80	13.87	1.93
2003	12.72	10.69	2.04	3.07	2.79	.27	15.79	13.48	2.31
2004	12.73	10.68	2.05	3.07	2.83	.24	15.80	13.51	2.29
2005	12.74	10.97	1.77	3.07	2.91	.16	15.81	13.89	1.93
2006	12.75	11.33	1.42	3.08	2.99	.09	15.83	14.32	1.51
2007	12.76	11.48	1.28	3.08	3.04	.04	15.84	14.52	1.32
2008	12.78	11.71	1.06	3.09	3.14	-.05	15.87	14.85	1.02
2009	12.79	11.95	.84	3.11	3.25	-.14	15.90	15.20	.70
2010	12.82	12.23	.59	3.12	3.36	-.24	15.93	15.59	.35
2011	12.87	12.51	.36	3.15	3.48	-.34	16.02	16.00	.02
2015	12.96	13.84	-.89	3.19	4.11	-.92	16.14	17.95	-1.81
2020	13.09	16.03	-2.95	3.25	5.19	-1.94	16.34	21.23	-4.89
2025	13.21	18.23	-5.02	3.32	6.66	-3.34	16.53	24.89	-8.36
2030	13.32	19.93	-6.61	3.37	8.54	-5.17	16.69	28.47	-11.78
2035	13.40	20.99	-7.59	3.41	10.49	-7.08	16.81	31.48	-14.68
2040	13.44	21.56	-8.11	3.43	12.27	-8.84	16.87	33.82	-16.95
2045	13.48	22.15	-8.67	3.45	13.75	-10.31	16.93	35.91	-18.98
2050	13.53	22.88	-9.35	3.47	14.89	-11.42	17.00	37.77	-20.77
2055	13.58	23.82	-10.23	3.50	15.88	-12.39	17.08	39.70	-22.62
2060	13.64	24.84	-11.20	3.53	17.09	-13.56	17.17	41.93	-24.76
2065	13.71	25.98	-12.27	3.56	18.56	-15.00	17.27	44.54	-27.27
2070	13.78	27.17	-13.39	3.59	20.26	-16.67	17.37	47.43	-30.06
2075	13.84	28.30	-14.46	3.63	22.06	-18.43	17.47	50.36	-32.89
2080	13.90	29.30	-15.40	3.66	23.95	-20.30	17.56	53.25	-35.70

[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 for 2002 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.

Tables VI.E3 and VI.E4 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 VI.E3 values are summarized over the three 25-year subperiods (excluding the beginning fund balances and the cost of accumulating ending fund targets). In table VI.E4 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 cost of accumulating an ending fund balance equal to 100 percent of annual expenditures by the end of the period is included in the summarized cost

rates). Estimates shown for the combined trust funds are theoretical because no authority currently exists for borrowing by or transfers among these trust funds.

Table VI.E3.—Summarized OASDI and HI Income Rates, Cost Rates, and Balances[1] for 25-Year Subperiods,[2] Calendar Years 2002-76

[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:									
2002-26	12.87	12.42	0.45	3.15	3.17	-0.02	16.02	15.59	0.43
2027-51	13.24	17.60	-4.36	3.34	5.90	-2.56	16.58	23.50	-6.92
2052-76	13.34	18.85	-5.51	3.38	8.77	-5.38	16.73	27.62	-10.89
Low Cost:									
2002-26	12.83	11.39	1.44	3.13	2.45	.68	15.96	13.84	2.12
2027-51	13.10	14.69	-1.59	3.27	3.05	.22	16.37	17.74	-1.37
2052-76	13.11	14.20	-1.09	3.27	4.21	-.93	16.39	18.41	-2.02
High Cost:									
2002-26	12.92	13.71	-.80	3.17	4.18	-1.00	16.09	17.89	-1.80
2027-51	13.41	21.21	-7.81	3.42	11.44	-8.02	16.83	32.65	-15.82
2052-76	13.68	25.59	-11.91	3.55	18.22	-14.67	17.23	43.81	-26.58

[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.

Deficits are projected for each 25-year subperiod of the 75-year projection period under the high cost assumptions for the combined OASDI and HI system (table VI.E3, excluding beginning trust fund balances and the cost of ending fund targets). Under the intermediate assumptions, deficits of smaller magnitude than those for the high cost set of assumptions are projected for the second and third 25-year subperiods and a positive balance is projected for the first 25-year subperiod. Under the low cost assumptions, the combined OASDI and HI system is projected to show a positive balance for the first 25-year subperiod and relatively small deficits for the second and third 25-year subperiods.

Table VI.E4.—Summarized OASDI and HI Income Rates and Cost Rates[1] for Valuation Periods,[2] Calendar Years 2002-76

[As a percentage of taxable payroll[1]]

Valuation period	OASDI			HI			Combined		
	Income rate	Cost rate	Actuarial balance	Income rate	Cost rate	Actuarial balance	Income rate	Cost rate	Actuarial balance
Intermediate:									
25-years:									
2002-26	14.21	12.98	1.24	3.33	3.32	0.01	17.55	16.30	1.25
50-years:									
2002-51	13.82	14.77	-.95	3.33	4.39	-1.06	17.15	19.16	-2.01
75-years:									
2002-76	13.72	15.59	-1.87	3.34	5.36	-2.02	17.06	20.95	-3.89
Low Cost:									
25-years:									
2002-26	14.17	11.87	2.30	3.31	2.54	.77	17.48	14.42	3.07
50-years:									
2002-51	13.74	12.92	.82	3.29	2.75	.54	17.03	15.67	1.36
75-years:									
2002-76	13.60	13.16	.44	3.29	3.09	.20	16.89	16.25	.64
High Cost:									
25-years:									
2002-26	14.28	14.36	-.09	3.36	4.43	-1.07	17.63	18.79	-1.14
50-years:									
2002-51	13.92	17.13	-3.21	3.38	7.47	-4.09	17.30	24.60	-7.30
75-years:									
2002-76	13.87	18.87	-5.00	3.42	9.89	-6.47	17.28	28.76	-11.47

[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.

Under the high cost assumptions, the combined OASDI and HI system is projected to experience large actuarial deficits for the 25-year, 50-year, and 75-year valuation periods (table VI.E4, including beginning trust fund balances and the cost of ending fund targets). Under the intermediate assumptions, actuarial deficits smaller than those for the high cost assumptions are projected for the 50-year and the 75-year valuation periods, and a positive actuarial balance is projected for the 25-year valuation period. Under the low cost assumptions, the combined OASDI and HI system is projected to have positive actuarial balances for each of the three valuation periods.

2. Estimates as a Percentage of Gross Domestic Product

This section 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 IV.B1 and section IV.B.1), 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 VI.E5 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 VI.E5. 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) and proceeds from taxation of OASDI benefits. 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 assumptions until 2021. After 2020, deficits increase to a peak in about 2034, and decrease thereafter. The OASDI balance is projected to be positive until 2017 on the basis of the intermediate assumptions and until 2013 on the basis of the high cost assumptions, at which time balances become permanently negative, with generally increasing deficits. The projected HI balance as a percentage of GDP, is positive until 2047 on the basis of the low cost alternative. The HI balance is projected to remain positive until about 2017 under the intermediate alternative and 2008 under the high cost alternative, with deficits increasing steadily thereafter. The combined OASDI and HI balance as a percentage of GDP is projected to be positive until 2025 under the low cost assumptions, until 2017 under the intermediate assumptions, and until 2011 under the high cost assumptions. Between 2010 and about 2035, under all three assumptions, both the OASDI and HI balances as percentages of GDP are projected to decline (or deficits increase) substantially

because the baby-boom generation reaches retirement age during these years. After balances cease to be positive under the intermediate and high cost assumptions, the annual deficits increase fairly steadily for the OASDI and HI programs, both separately and combined.

By 2080, the combined OASDI and HI balances as percentages of GDP, are projected to range from a deficit of 1.52 percent for the low cost assumptions to a deficit of 13.34 percent for the high cost assumptions. Projected balances differ by a much smaller amount for the tenth year, 2011, ranging from a positive balance of 1.36 percent for the low cost assumptions to a deficit of 0.04 percent for the high cost assumptions.

The summarized long-range (75-year) balance as a percentage of GDP for the combined OASDI and HI programs varies among the three alternatives, by a relatively large amount (from a positive balance of 0.29 percent, based on the low cost assumptions, to a deficit of 4.79 percent, based on the high cost assumptions). The 25-year summarized balance varies by a smaller amount (from a positive balance of 1.32 percent to a deficit of 0.56 percent). Summarized rates are calculated on the present-value basis including the trust fund balances on January 1, 2002 and the cost of reaching a target trust fund level equal to 100 percent of annual expenditures at the end of the period. (See section IV.B.4 for further explanation.)

Table VI.E5.—OASDI and HI Annual and Summarized Income, Outgo, and Balance as a Percentage of GDP, Calendar Years 2002-80

	Percentage of GDP									
	OASDI			HI			Combined			GDP in dollars (billions)
Calendar year	Income[1]	Outgo	Balance	Income[1]	Outgo	Balance	Income[1]	Outgo	Balance	
Intermediate:										
2002	5.22	4.46	0.76	1.58	1.42	0.16	6.80	5.88	0.93	$10,430
2003	5.21	4.32	.89	1.58	1.37	.21	6.79	5.68	1.11	11,039
2004	5.18	4.27	.91	1.57	1.36	.21	6.75	5.64	1.12	11,681
2005	5.16	4.25	.91	1.57	1.36	.21	6.73	5.62	1.11	12,356
2006	5.13	4.25	.88	1.56	1.36	.20	6.69	5.61	1.08	13,068
2007	5.11	4.25	.86	1.56	1.37	.19	6.67	5.62	1.05	13,814
2008	5.10	4.29	.82	1.56	1.38	.18	6.66	5.67	1.00	14,550
2009	5.10	4.34	.75	1.56	1.40	.16	6.66	5.74	.92	15,298
2010	5.09	4.41	.68	1.57	1.42	.15	6.66	5.83	.83	16,070
2011	5.10	4.48	.62	1.58	1.44	.14	6.68	5.92	.75	16,869
2015	5.10	4.90	.20	1.58	1.57	.02	6.68	6.46	.22	20,337
2020	5.10	5.59	-.49	1.60	1.79	-.19	6.70	7.37	-.68	25,539
2025	5.09	6.23	-1.14	1.61	2.06	-.45	6.70	8.29	-1.59	32,000
2030	5.07	6.64	-1.56	1.62	2.38	-.77	6.69	9.02	-2.33	40,167
2035	5.04	6.78	-1.73	1.61	2.70	-1.08	6.66	9.47	-2.82	50,558
2040	5.00	6.72	-1.71	1.60	2.96	-1.36	6.60	9.67	-3.07	63,631
2045	4.96	6.66	-1.70	1.59	3.18	-1.59	6.55	9.83	-3.29	79,850
2050	4.92	6.65	-1.73	1.58	3.36	-1.79	6.49	10.01	-3.52	99,927
2055	4.88	6.70	-1.82	1.57	3.55	-1.99	6.45	10.26	-3.81	124,867
2060	4.84	6.77	-1.92	1.56	3.79	-2.23	6.40	10.56	-4.16	155,943
2065	4.81	6.84	-2.03	1.55	4.08	-2.53	6.36	10.92	-4.56	194,622
2070	4.77	6.92	-2.15	1.54	4.41	-2.87	6.31	11.33	-5.02	242,640
2075	4.73	6.99	-2.26	1.53	4.76	-3.23	6.26	11.75	-5.48	302,252
2080	4.70	7.04	-2.35	1.52	5.12	-3.60	6.22	12.17	-5.95	376,333
Summarized rates:[2]										
25-year:										
2002-26 . . .	5.66	5.17	.49	1.68	1.67	.01	7.34	6.84	.50	
50-year:										
2002-51 . . .	5.39	5.77	-.37	1.64	2.16	-.51	7.04	7.92	-.89	
75-year										
2002-76 . . .	5.27	5.99	-.72	1.62	2.58	-.96	6.89	8.56	-1.67	
Low Cost:										
2002	5.23	4.41	.82	1.58	1.37	.21	6.81	5.78	1.03	10,518
2003	5.22	4.24	.98	1.58	1.30	.28	6.80	5.54	1.26	11,158
2004	5.20	4.16	1.05	1.57	1.27	.30	6.78	5.43	1.35	11,812
2005	5.20	4.12	1.08	1.57	1.25	.32	6.78	5.38	1.40	12,405
2006	5.18	4.10	1.08	1.57	1.23	.33	6.75	5.34	1.41	13,011
2007	5.17	4.10	1.07	1.56	1.21	.35	6.73	5.31	1.42	13,644
2008	5.16	4.10	1.06	1.56	1.20	.36	6.72	5.30	1.42	14,306
2009	5.16	4.12	1.03	1.57	1.20	.37	6.72	5.32	1.41	14,987
2010	5.16	4.16	1.00	1.57	1.19	.38	6.73	5.35	1.38	15,674
2011	5.17	4.20	.97	1.58	1.19	.39	6.75	5.39	1.36	16,375
2015	5.18	4.52	.66	1.59	1.20	.39	6.77	5.72	1.05	19,403
2020	5.19	5.10	.09	1.61	1.25	.35	6.80	6.36	.44	23,814
2025	5.20	5.63	-.43	1.62	1.32	.30	6.82	6.95	-.13	29,164
2030	5.20	5.93	-.73	1.63	1.39	.23	6.83	7.33	-.50	35,841
2035	5.18	5.96	-.78	1.63	1.47	.16	6.81	7.43	-.62	44,287
2040	5.16	5.79	-.64	1.62	1.53	.09	6.77	7.32	-.55	54,858
2045	5.13	5.64	-.51	1.61	1.60	.01	6.74	7.23	-.50	67,926
2050	5.11	5.55	-.44	1.60	1.68	-.08	6.70	7.22	-.52	84,000
2055	5.08	5.52	-.43	1.59	1.78	-.19	6.68	7.30	-.62	103,857
2060	5.06	5.49	-.43	1.59	1.91	-.32	6.65	7.40	-.75	128,498
2065	5.04	5.46	-.42	1.58	2.06	-.48	6.62	7.52	-.90	159,096
2070	5.02	5.44	-.42	1.57	2.24	-.67	6.60	7.68	-1.08	196,904
2075	5.00	5.43	-.43	1.57	2.43	-.86	6.57	7.86	-1.29	243,512
2080	4.98	5.44	-.46	1.56	2.63	-1.06	6.54	8.07	-1.52	300,918

Table VI.E5.—OASDI and HI Annual and Summarized Income, Outgo, and Balance as a Percentage of GDP, Calendar Years 2002-80 (Cont.)

	Percentage of GDP									GDP in dollars (billions)
	OASDI			HI			Combined			
Calendar year	Income[1]	Outgo	Balance	Income[1]	Outgo	Balance	Income[1]	Outgo	Balance	
Low Cost (cont.):										
Summarized rates: [2]										
25-year:										
2002-26 . . .	5.74	4.81	0.93	1.68	1.29	0.39	7.42	6.10	1.32	
50-year:										
2002-51 . . .	5.51	5.18	.33	1.66	1.38	.28	7.16	6.56	.60	
75-year										
2002-76 . . .	5.40	5.23	.18	1.64	1.53	.11	7.04	6.76	.29	
High Cost:										
2002	5.21	4.52	.69	1.58	1.47	.11	6.79	5.99	.80	$10,337
2003	5.19	4.37	.82	1.58	1.44	.14	6.77	5.81	.96	11,007
2004	5.14	4.33	.82	1.57	1.45	.12	6.71	5.78	.94	11,785
2005	5.12	4.42	.70	1.56	1.48	.08	6.68	5.90	.78	12,432
2006	5.04	4.50	.54	1.55	1.51	.04	6.60	6.01	.59	13,289
2007	5.02	4.53	.49	1.55	1.53	.02	6.57	6.06	.52	14,369
2008	5.02	4.61	.41	1.55	1.58	-.02	6.57	6.19	.38	15,225
2009	5.03	4.71	.32	1.56	1.63	-.07	6.58	6.34	.24	16,044
2010	5.02	4.80	.22	1.56	1.68	-.12	6.58	6.48	.10	16,926
2011	5.02	4.89	.13	1.57	1.74	-.17	6.59	6.63	-.04	17,868
2015	5.00	5.36	-.35	1.58	2.03	-.46	6.58	7.39	-.81	21,947
2020	4.99	6.12	-1.14	1.59	2.53	-.95	6.57	8.66	-2.08	28,249
2025	4.97	6.87	-1.90	1.59	3.20	-1.61	6.56	10.07	-3.51	36,275
2030	4.94	7.41	-2.47	1.60	4.05	-2.45	6.54	11.46	-4.92	46,575
2035	4.90	7.69	-2.79	1.59	4.91	-3.31	6.49	12.60	-6.11	59,780
2040	4.85	7.79	-2.94	1.58	5.66	-4.08	6.43	13.45	-7.02	76,492
2045	4.79	7.89	-3.10	1.57	6.26	-4.69	6.36	14.15	-7.79	97,287
2050	4.74	8.03	-3.29	1.56	6.69	-5.13	6.30	14.72	-8.42	123,144
2055	4.69	8.24	-3.55	1.55	7.03	-5.49	6.24	15.27	-9.03	155,364
2060	4.64	8.47	-3.83	1.54	7.46	-5.92	6.18	15.93	-9.75	195,584
2065	4.60	8.73	-4.13	1.53	7.99	-6.46	6.13	16.72	-10.59	245,593
2070	4.56	9.00	-4.44	1.53	8.60	-7.08	6.08	17.60	-11.52	307,748
2075	4.51	9.24	-4.73	1.52	9.24	-7.72	6.03	18.47	-12.44	385,126
2080	4.46	9.43	-4.96	1.51	9.89	-8.38	5.97	19.32	-13.34	481,802
Summarized rates: [2]										
25-year:										
2002-26 . . .	5.57	5.61	-.03	1.67	2.19	-.52	7.24	7.80	-.56	
50-year:										
2002-51 . . .	5.27	6.48	-1.21	1.63	3.55	-1.92	6.90	10.04	-3.14	
75-year										
2002-76 . . .	5.12	6.97	-1.85	1.61	4.55	-2.95	6.73	11.52	-4.79	

[1] Income for individual years excludes interest on the trust funds. Interest is implicitly reflected in all summarized values.

[2] Summarized rates are calculated on the present-value basis including the value of the trust funds on January 1, 2002 and the cost of reaching a target trust fund level equal to 100 percent of annual expenditures at the end of the period.

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 understood by analyzing the estimated ratios of OASDI taxable payroll to GDP, which are presented in table VI.E6. HI taxable payroll is about 25 percent larger than the OASDI taxable payroll throughout the long-range period (see appendix E.1 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 VI.E6.—Ratio of OASDI Taxable Payroll to GDP, Calendar Years 2002-80

Calendar year	Intermediate	Low Cost	High Cost
2002	0.411	0.412	0.410
2003	.411	.412	.409
2004	.408	.411	.405
2005	.406	.410	.403
2006	.404	.409	.398
2007	.402	.407	.394
2008	.401	.406	.394
2009	.400	.406	.394
2010	.399	.405	.393
2011	.399	.405	.391
2015	.396	.404	.387
2020	.393	.402	.382
2025	.389	.400	.377
2030	.385	.398	.372
2035	.381	.396	.366
2040	.378	.394	.361
2045	.374	.392	.356
2050	.371	.390	.351
2055	.367	.388	.346
2060	.364	.387	.341
2065	.360	.385	.336
2070	.357	.383	.331
2075	.354	.382	.326
2080	.350	.380	.322

Projections of GDP are 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 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 earnings to total worker compensation declined at an average annual rate of 0.19 percent for the 40 years from 1960 to 2000. For the 10-year periods 1960-70, 1970-80, 1980-90 the ratio declined by 0.29, 0.63, and 0.12 percent, respectively. For the 10-year period 1990-2000 the ratio increased by 0.27 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 the low cost, intermediate, and high cost assumptions, 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 2011, with no further decline thereafter.

3. Estimates in Dollars

This section 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 VI.E7 presents five such indices for adjustment. Adjustment of any series of values is accomplished by dividing the value for each year by the corresponding index values for the year. This adjustment removes the inflation in the index from the series of values.

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 2.0, 3.0, and 4.0 percent for the low cost, intermediate, and high cost sets of assumptions, respectively. Constant-dollar values (those adjusted by dividing by the CPI) indicate the relative purchasing power of the values over time. Constant-dollar values are provided in table VI.E8.

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 3.6, 4.1, and 4.6 percent under the low cost, intermediate, and high cost assumptions, respectively. Wage-indexed values indicate the level of a series relative to the standard-of-living of workers over time.

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 through calendar year 2001. Values adjusted by dividing by the taxable payroll indicate the percentage of payroll that each value represents, and thus the extent to which the series of values increases or decreases as a percent of payroll over time.

The 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 VI.E.2) 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 demographic and economic assumptions, as discussed in sections V.A and V.B, respectively.

Discounting at the rate of 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 for each year. 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 5.7, 6.0, and 6.2 percent for the low cost, intermediate, and high cost assumptions, respectively.

Table VI.E7.—Selected Economic Variables, Calendar Years 2001-80
[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:					
2001	98.75	$33,896.77	$4,183	$10,197	0.9497
2002	100.00	34,943.24	4,290	10,430	1.0000
2003	102.52	36,608.64	4,537	11,039	1.0630
2004	105.34	38,115.60	4,770	11,681	1.1312
2005	108.44	39,664.00	5,022	12,356	1.2045
2006	111.69	41,286.14	5,286	13,068	1.2825
2007	115.04	42,963.22	5,557	13,814	1.3647
2008	118.50	44,667.24	5,840	14,550	1.4489
2009	122.04	46,445.75	6,125	15,298	1.5371
2010	125.71	48,302.26	6,419	16,070	1.6307
2011	129.48	50,255.81	6,723	16,869	1.7300
2015	145.73	58,956.33	8,053	20,337	2.1915
2020	168.94	71,914.19	10,025	25,539	2.9452
2025	195.84	87,859.47	12,444	32,000	3.9581
2030	227.04	107,472.90	15,470	40,167	5.3194
2035	263.20	131,619.33	19,286	50,558	7.1488
2040	305.12	161,247.40	24,047	63,631	9.6074
2045	353.71	197,388.52	29,895	79,850	12.9116
2050	410.05	241,309.55	37,059	99,927	17.3521
2055	475.36	294,849.13	45,870	124,867	23.3198
2060	551.08	360,315.78	56,744	155,943	31.3398
2065	638.85	440,389.00	70,148	194,622	42.1181
2070	740.60	538,344.62	86,626	242,640	56.6032
2075	858.56	658,055.86	106,886	302,252	76.0699
2080	995.30	804,328.88	131,822	376,333	102.2316
Low Cost:					
2001	98.85	33,904.11	4,188	10,201	.9497
2002	100.00	35,156.59	4,331	10,518	1.0000
2003	101.99	36,756.79	4,595	11,158	1.0626
2004	104.03	38,180.33	4,849	11,812	1.1287
2005	106.12	39,451.58	5,087	12,405	1.1948
2006	108.23	40,726.90	5,318	13,011	1.2639
2007	110.41	42,045.76	5,554	13,644	1.3371
2008	112.61	43,450.05	5,812	14,306	1.4145
2009	114.86	44,953.78	6,079	14,987	1.4964
2010	117.16	46,516.32	6,353	15,674	1.5831
2011	119.50	48,161.21	6,630	16,375	1.6747
2015	129.35	55,416.75	7,831	19,403	2.0976
2020	142.82	65,964.85	9,568	23,814	2.7793
2025	157.68	78,597.57	11,658	29,164	3.6827
2030	174.09	93,752.48	14,252	35,841	4.8796
2035	192.21	111,985.25	17,522	44,287	6.4655
2040	212.22	133,843.26	21,602	54,858	8.5668
2045	234.31	159,892.99	26,626	67,926	11.3511
2050	258.69	190,891.25	32,777	84,000	15.0403
2055	285.62	227,842.74	40,343	103,857	19.9285
2060	315.34	271,991.28	49,694	128,498	26.4055
2065	348.17	324,747.36	61,256	159,096	34.9875
2070	384.40	387,792.85	75,479	196,904	46.3587
2075	424.41	463,021.67	92,933	243,512	61.4258
2080	468.59	552,760.43	114,332	300,918	81.3897

Table VI.E7.—Selected Economic Variables, Calendar Years 2001-80 (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:					
2001	98.57	$33,844.16	$4,173	$10,175	0.9497
2002	100.00	34,680.32	4,242	10,337	1.0000
2003	103.21	36,540.65	4,507	11,007	1.0715
2004	107.94	38,473.52	4,776	11,785	1.1581
2005	114.24	40,109.22	5,005	12,432	1.2495
2006	120.82	42,345.82	5,283	13,289	1.3538
2007	126.72	45,019.34	5,668	14,369	1.4666
2008	131.97	47,106.05	5,999	15,225	1.5660
2009	137.23	49,131.97	6,322	16,044	1.6658
2010	142.73	51,287.13	6,646	16,926	1.7708
2011	148.44	53,589.77	6,987	17,868	1.8824
2015	173.65	64,095.61	8,496	21,947	2.4040
2020	211.27	80,124.82	10,792	28,249	3.2636
2025	257.05	100,377.02	13,668	36,275	4.4305
2030	312.74	125,916.23	17,303	46,575	6.0148
2035	380.49	158,073.56	21,898	59,780	8.1655
2040	462.93	198,439.87	27,630	76,492	11.0852
2045	563.22	248,835.59	34,648	97,287	15.0489
2050	685.25	311,410.10	43,231	123,144	20.4299
2055	833.71	389,373.20	53,759	155,364	27.7351
2060	1,014.33	486,848.75	66,702	195,584	37.6523
2065	1,234.09	608,798.10	82,547	245,593	51.1156
2070	1,501.46	761,485.40	101,943	307,748	69.3930
2075	1,826.75	952,569.43	125,730	385,126	94.2058
2080	2,222.52	1,191,830.86	155,018	481,802	127.8910

[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 2002, and multiplying the result by 100, thereby initializing the CPI at 100 for 2002.
[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 through calendar year 2001 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 VI.E8 shows estimated operations of the combined OASI and DI Trust Funds in constant 2002 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.

Table VI.E8.—Operations of the Combined OASI and DI Trust Funds, in Constant 2002 Dollars,[1] Calendar Years 2002-80

[In billions]

Calendar year	Income excluding interest	Interest income	Total income	Outgo	Assets at end of year
Intermediate:					
2002	$544.8	$79.6	$624.4	$465.2	$1,371.8
2003	561.2	86.6	647.8	464.9	1,520.9
2004	574.4	96.0	670.4	473.7	1,677.0
2005	588.1	105.8	693.9	484.5	1,838.5
2006	600.2	116.0	716.1	496.8	2,004.3
2007	614.0	126.3	740.3	510.7	2,175.6
2008	626.5	136.4	762.9	526.2	2,348.8
2009	638.7	146.1	784.8	544.2	2,521.2
2010	650.8	155.6	806.4	563.5	2,690.5
2011	664.6	165.1	829.7	584.0	2,857.9
2015	711.4	198.4	909.8	683.1	3,445.5
2020	770.6	223.4	993.9	844.7	3,838.2
2025	831.9	218.0	1,049.9	1,017.6	3,686.3
2030	897.8	178.8	1,076.7	1,174.6	2,956.2
2035	969.0	109.7	1,078.6	1,301.8	1,721.6
2040[2]	1,043.4	17.2	1,060.5	1,400.5	96.3
Low Cost:					
2002	549.8	80.2	630.1	464.0	1,378.6
2003	571.1	88.6	659.7	464.2	1,547.2
2004	590.8	99.1	689.9	472.0	1,734.8
2005	608.3	109.5	717.8	482.2	1,936.4
2006	622.7	119.9	742.6	493.4	2,147.7
2007	638.9	130.9	769.8	506.2	2,369.1
2008	655.4	142.6	798.0	520.7	2,599.9
2009	672.7	154.8	827.5	537.7	2,838.9
2010	689.9	167.5	857.4	556.1	3,084.5
2011	708.6	180.6	889.2	575.8	3,337.4
2015	776.7	236.8	1,013.5	677.7	4,365.0
2020	865.9	302.6	1,168.4	851.2	5,531.9
2025	962.0	353.3	1,315.3	1,041.6	6,410.1
2030	1,070.2	387.8	1,458.0	1,221.2	7,004.3
2035	1,194.0	413.6	1,607.6	1,372.7	7,458.7
2040	1,332.8	442.8	1,775.6	1,497.3	7,997.7
2045	1,487.0	483.7	1,970.6	1,634.4	8,751.3
2050	1,657.8	536.0	2,193.8	1,800.8	9,709.1
2055	1,848.9	597.6	2,446.5	2,006.2	10,825.3
2060	2,063.6	666.0	2,729.6	2,238.8	12,063.6
2065	2,304.4	743.2	3,047.5	2,495.4	13,463.8
2070	2,572.3	830.0	3,402.4	2,785.5	15,037.7
2075	2,869.5	926.0	3,795.6	3,115.4	16,773.0
2080	3,198.9	1,029.0	4,227.9	3,492.3	18,627.2

Table VI.E8.—Operations of the Combined OASI and DI Trust Funds, in Constant 2002 Dollars,[1] Calendar Years 2002-80 (Cont.)
[In billions]

Calendar year	Income excluding interest	Interest income	Total income	Outgo	Assets at end of year
High Cost:					
2002	$539.0	$79.5	$618.6	$467.7	$1,363.4
2003	554.0	87.3	641.3	466.6	1,495.8
2004	561.5	98.2	659.8	472.5	1,617.6
2005	557.2	108.6	665.8	480.8	1,713.3
2006	554.8	117.2	672.0	495.2	1,796.8
2007	569.6	128.6	698.2	513.5	1,897.9
2008	579.2	135.7	714.9	532.4	2,004.9
2009	587.6	140.2	727.8	550.6	2,105.1
2010	595.1	144.2	739.3	569.4	2,194.0
2011	604.4	147.8	752.1	589.1	2,272.6
2015	632.5	148.5	781.1	677.3	2,429.2
2020	667.0	131.9	798.9	819.0	2,140.7
2025 [2]	701.2	79.8	781.0	969.5	1,198.9

[1] The adjustment from current to constant dollars is by the CPI indexing series shown in table VI.E7.
[2] Estimates for later years are not shown because the combined OASI and DI Trust Funds are estimated to become exhausted in 2041 under the intermediate assumptions and in 2029 under the high cost assumptions.
Note: Totals do not necessarily equal the sums of rounded components.

Figure VI.E1 provides a comparison of annual 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 VI.E8. 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 2016, (2) current tax income plus amounts from the trust funds that are less than annual interest income for years 2017 through 2026, and (3) current tax income plus amounts from the trust funds that are greater than annual interest income for years 2027 through 2040, i.e., through the year preceding the year of trust fund exhaustion.

Figure VI.E1.—Estimated OASDI Income and Outgo in Constant Dollars, Based on Alternative II
[In billions]

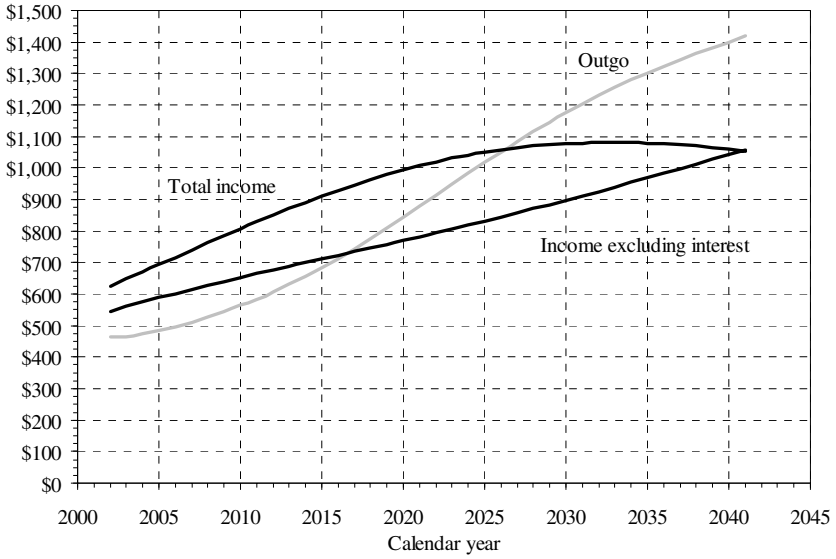

Table VI.E9 shows estimated operations of the combined OASI and DI Trust Funds in current dollars—that is in dollars unadjusted for price inflation. Items included in the table are: income excluding interest, interest income, total income, total outgo, and assets at the end of the year. These estimates, based on the low cost, intermediate, and high cost sets of demographic and economic assumptions, are presented to facilitate independent analysis.

Table VI.E9.—Operations of the Combined OASI and DI Trust Funds, in Current Dollars, Calendar Years 2002-80

[In billions]

Calendar year	Income excluding interest	Interest income	Total income	Outgo	Assets at end of year
Intermediate:					
2002	$544.8	$79.6	$624.4	$465.2	$1,371.8
2003	575.4	88.8	664.2	476.6	1,559.4
2004	605.1	101.1	706.3	499.0	1,766.6
2005	637.7	114.7	752.5	525.4	1,993.7
2006	670.3	129.6	799.9	554.9	2,238.7
2007	706.3	145.3	851.7	587.5	2,502.9
2008	742.4	161.7	904.1	623.6	2,783.4
2009	779.5	178.3	957.8	664.2	3,077.0
2010	818.2	195.6	1,013.7	708.4	3,382.3
2011	860.6	213.8	1,074.3	756.2	3,700.4
2015	1,036.7	289.1	1,325.9	995.5	5,021.1
2020	1,301.8	377.4	1,679.2	1,427.1	6,484.2
2025	1,629.3	426.9	2,056.3	1,992.9	7,219.6
2030	2,038.4	406.0	2,444.5	2,666.8	6,711.7
2035	2,550.4	288.7	2,839.0	3,426.4	4,531.4
2040[1]	3,183.6	52.4	3,236.0	4,273.4	294.0
Low Cost:					
2002	549.8	80.2	630.1	464.0	1,378.6
2003	582.5	90.4	672.9	473.4	1,578.1
2004	614.7	103.1	717.8	491.1	1,804.7
2005	645.6	116.2	761.7	511.6	2,054.8
2006	673.9	129.8	803.7	534.0	2,324.5
2007	705.4	144.5	849.9	558.8	2,615.6
2008	738.0	160.6	898.7	586.4	2,927.9
2009	772.6	177.8	950.5	617.6	3,260.8
2010	808.3	196.2	1,004.5	651.5	3,613.8
2011	846.8	215.9	1,062.7	688.1	3,988.3
2015	1,004.7	306.3	1,311.0	876.7	5,646.4
2020	1,236.6	432.1	1,668.7	1,215.7	7,900.6
2025	1,516.9	557.0	2,074.0	1,642.5	10,107.6
2030	1,863.2	675.2	2,538.4	2,126.0	12,194.0
2035	2,295.0	794.9	3,089.9	2,638.5	14,336.7
2040	2,828.4	939.7	3,768.1	3,177.5	16,972.7
2045	3,484.1	1,133.2	4,617.4	3,829.6	20,505.0
2050	4,288.6	1,386.7	5,675.3	4,658.7	25,116.9
2055	5,280.8	1,706.9	6,987.7	5,730.2	30,919.3
2060	6,507.5	2,100.1	8,607.6	7,060.0	38,042.2
2065	8,023.2	2,587.4	10,610.6	8,688.2	46,876.8
2070	9,888.3	3,190.7	13,078.9	10,707.6	57,806.1
2075	12,178.7	3,930.2	16,109.0	13,222.3	71,187.5
2080	14,989.9	4,821.6	19,811.5	16,364.7	87,285.2

Table VI.E9.—Operations of the Combined OASI and DI Trust Funds, in Current Dollars, Calendar Years 2002-80 (Cont.)
[In billions]

Calendar year	Income excluding interest	Interest income	Total income	Outgo	Assets at end of year
High Cost:					
2002	$539.0	$79.5	$618.6	$467.7	$1,363.4
2003	571.8	90.1	661.8	481.5	1,543.7
2004	606.1	106.0	712.1	509.9	1,745.9
2005	636.5	124.1	760.6	549.2	1,957.3
2006	670.3	141.6	811.9	598.3	2,170.9
2007	721.8	163.0	884.7	650.7	2,405.0
2008	764.4	179.1	943.5	702.6	2,645.8
2009	806.4	192.4	998.8	755.7	2,888.9
2010	849.3	205.9	1,055.2	812.7	3,131.4
2011	897.2	219.3	1,116.5	874.4	3,373.4
2015	1,098.4	257.9	1,356.3	1,176.1	4,218.4
2020	1,409.1	278.8	1,687.9	1,730.2	4,522.7
2025 [1]	1,802.4	205.0	2,007.4	2,492.1	3,081.9

[1] Estimates for later years are not shown because the combined OASI and DI Trust Funds are estimated to become exhausted in 2041 under the intermediate assumptions and in 2029 under the high cost assumptions.

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

Table VI.E10 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 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) and proceeds from the taxation of OASDI benefits. 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 VI.E10 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 VI.E10.—OASDI and HI Annual Income Excluding Interest, Outgo, and Balance in Current Dollars, Calendar Years 2002-80

[In billions]

Calendar year	OASDI			HI			Combined		
	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance
Intermediate:									
2002	$545	$465	$80	$165	$148	$17	$710	$613	$97
2003	575	477	99	174	151	23	750	627	122
2004	605	499	106	184	159	25	789	658	131
2005	638	525	112	194	168	25	832	694	138
2006	670	555	115	204	178	26	874	733	141
2007	706	587	119	215	189	26	922	776	145
2008	742	624	119	227	201	26	969	825	145
2009	780	664	115	239	214	25	1,019	878	141
2010	818	708	110	252	228	24	1,070	936	134
2011	861	756	104	266	243	23	1,127	999	127
2015	1,037	996	41	322	318	4	1,359	1,314	45
2020	1,302	1,427	-125	408	456	-48	1,710	1,883	-173
2025	1,629	1,993	-364	515	660	-144	2,145	2,653	-508
2030	2,038	2,667	-628	649	958	-309	2,687	3,625	-937
2035	2,550	3,426	-876	815	1,363	-548	3,365	4,789	-1,424
2040	3,184	4,273	-1,090	1,018	1,882	-863	4,202	6,155	-1,953
2045	3,961	5,315	-1,355	1,267	2,536	-1,269	5,228	7,852	-2,623
2050	4,915	6,641	-1,726	1,574	3,361	-1,787	6,490	10,002	-3,513
2055	6,094	8,367	-2,272	1,956	4,439	-2,483	8,050	12,805	-4,755
2060	7,553	10,555	-3,002	2,429	5,910	-3,480	9,983	16,464	-6,482
2065	9,355	13,314	-3,959	3,015	7,937	-4,923	12,370	21,251	-8,882
2070	11,574	16,789	-5,215	3,738	10,705	-6,967	15,312	27,494	-12,182
2075	14,305	21,123	-6,818	4,629	14,383	-9,755	18,934	35,507	-16,572
2080	17,670	26,512	-8,841	5,728	19,270	-13,543	23,398	45,782	-22,384
Low Cost:									
2002	550	464	86	166	144	22	716	608	108
2003	582	473	109	176	145	31	759	619	140
2004	615	491	124	186	150	35	801	642	159
2005	646	512	134	195	155	40	840	667	173
2006	674	534	140	204	160	43	878	694	183
2007	705	559	147	213	166	48	919	724	194
2008	738	586	152	224	172	52	962	759	203
2009	773	618	155	235	179	56	1,007	797	211
2010	808	652	157	246	187	60	1,054	838	216
2011	847	688	159	259	195	64	1,106	883	223
2015	1,005	877	128	309	233	75	1,313	1,110	203
2020	1,237	1,216	21	383	298	85	1,619	1,514	105
2025	1,517	1,642	-126	473	385	88	1,990	2,027	-38
2030	1,863	2,126	-263	583	500	84	2,447	2,626	-179
2035	2,295	2,639	-344	720	650	70	3,015	3,289	-273
2040	2,828	3,177	-349	887	840	47	3,715	4,017	-302
2045	3,484	3,830	-345	1,091	1,084	7	4,576	4,914	-338
2050	4,289	4,659	-370	1,343	1,408	-65	5,632	6,067	-435
2055	5,281	5,730	-449	1,654	1,849	-195	6,935	7,579	-644
2060	6,507	7,060	-552	2,040	2,450	-411	8,547	9,510	-963
2065	8,023	8,688	-665	2,515	3,281	-765	10,538	11,969	-1,431
2070	9,888	10,708	-819	3,101	4,415	-1,315	12,989	15,123	-2,134
2075	12,179	13,222	-1,044	3,820	5,918	-2,097	15,999	19,140	-3,141
2080	14,990	16,365	-1,375	4,704	7,907	-3,202	19,694	24,271	-4,577

Table VI.E10.—OASDI and HI Annual Income Excluding Interest, Outgo, and Balance in Current Dollars, Calendar Years 2002-80 (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:									
2002	$539	$468	$71	$163	$151	$12	$702	$619	$83
2003	572	482	90	174	158	16	745	640	106
2004	606	510	96	185	171	14	791	681	110
2005	637	549	87	195	184	10	831	734	97
2006	670	598	72	206	200	6	876	799	78
2007	722	651	71	223	220	3	945	870	74
2008	764	703	62	237	240	-4	1,001	943	58
2009	806	756	51	250	261	-11	1,056	1,017	39
2010	849	813	37	264	284	-20	1,113	1,097	16
2011	897	874	23	281	311	-30	1,178	1,185	-7
2015	1,098	1,176	-78	346	446	-100	1,444	1,622	-178
2020	1,409	1,730	-321	448	716	-268	1,857	2,446	-589
2025	1,802	2,492	-690	578	1,162	-583	2,381	3,654	-1,273
2030	2,301	3,449	-1,149	745	1,886	-1,141	3,045	5,335	-2,290
2035	2,928	4,597	-1,669	953	2,934	-1,981	3,881	7,531	-3,650
2040	3,707	5,956	-2,249	1,211	4,331	-3,120	4,918	10,287	-5,369
2045	4,663	7,676	-3,013	1,527	6,092	-4,565	6,190	13,768	-7,578
2050	5,837	9,891	-4,053	1,918	8,234	-6,316	7,755	18,125	-10,369
2055	7,289	12,803	-5,515	2,405	10,927	-8,522	9,694	23,730	-14,037
2060	9,085	16,572	-7,487	3,011	14,594	-11,583	12,096	31,166	-19,070
2065	11,297	21,445	-10,148	3,764	19,627	-15,863	15,061	41,072	-26,011
2070	14,021	27,694	-13,673	4,696	26,479	-21,783	18,717	54,172	-35,456
2075	17,374	35,579	-18,206	5,848	35,569	-29,721	23,221	71,148	-47,927
2080	21,509	45,421	-23,912	7,272	47,649	-40,378	28,781	93,070	-64,290

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

Table VI.E11 shows projected future benefit amounts payable upon retirement at either the normal retirement age (NRA) or age 65, for workers attaining age 65 in 2002 and subsequent years. Illustrative benefit levels are shown for workers with four separate pre-retirement earnings patterns. All estimates are based on the intermediate assumptions in this report. The benefit amounts are shown in constant 2002 dollars (adjusted to 2002 levels by the CPI indexing series shown in table VI.E7). Benefit amounts are also shown as percentages of the general, career-average relative earnings level for each case, wage indexed up to the year prior to retirement. These percentages thus represent the benefit "replacement rate" of the career-average level of earnings.

The normal retirement age is 65 for individuals who reached age 62 before 2000 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). Thus, for illustrative cases attaining age 65 after 2002, benefit levels shown for

retirement at 65 are lower than the levels shown for retirement at NRA, primarily because of the actuarial reduction for "early" (pre-NRA) retirement.

Four different pre-retirement earnings patterns are represented in table VI.E11. Three of these patterns are for workers with scaled-earnings patterns,[1] reflecting low, medium, and high career-average levels of pre-retirement earnings starting at age 21. The fourth case is the steady maximum earner. The three scaled-earnings cases have earnings patterns that reflect differences by age in the probability of work and in average earnings levels experienced by insured workers during the period 1989-98. The general, career-average level of earnings for the scaled cases is set relative to the SSA average wage indexing series (AWI) so that benefit levels are consistent with levels for "steady-earnings" cases that were shown in the 2000 and earlier Trustees' Reports. For the scaled medium earner, the general, career-average earnings level is about equal to the AWI. For the scaled low and high earners, the general, career-average earnings level is set at about 45 percent and 160 percent of the AWI, respectively. The steady maximum earner is assumed to have earnings at (or above) the OASDI contribution and benefit base for each year prior to retirement starting at age 22.

As noted above, the scaled-earnings cases were constructed so that their career-average earnings levels are consistent with the corresponding steady low, average, and high earners that were illustrated in the 2000 Trustees Report. As a result, values in this table for benefits under the present-law Social Security benefit formula are essentially comparable to those in earlier reports. Scaled-earnings cases are now generally being used instead of steady-earnings cases because they more accurately illustrate the differences in benefit levels under the wide variety of reform proposals considered in recent years.

[1] More details are provided on the development of scaled-earnings patterns in the Social Security Administration Actuarial Note Number 144, located at the following internet web site: http://www.ssa.gov/OACT/NOTES/note144.html.

Table VI.E11.—Estimated Annual Scheduled Benefit Amounts[1] for Retired Workers With Various Pre-Retirement Earnings Patterns Based on Intermediate Assumptions, Calendar Years 2002-80

	Retirement at normal retirement age			Retirement at age 65		
Year attain age 65[2]	Age at retirement	Constant 2002 dollars[3]	Percent of earnings	Age at retirement	Constant 2002 dollars[3]	Percent of earnings
Scaled low earnings:[4]						
2002	65:0	$8,181	53.6	65:0	$8,181	53.6
2005	65:6	8,695	54.7	65:0	8,398	53.1
2010	66:0	9,458	56.3	65:0	8,823	53.1
2015	66:0	9,938	56.2	65:0	9,271	53.0
2020	66:2	10,462	56.2	65:0	9,648	52.4
2025	67:0	11,012	55.6	65:0	9,545	49.2
2030	67:0	11,602	55.5	65:0	10,057	49.1
2035	67:0	12,244	55.4	65:0	10,613	49.1
2040	67:0	12,940	55.5	65:0	11,213	49.1
2045	67:0	13,672	55.5	65:0	11,849	49.1
2050	67:0	14,438	55.6	65:0	12,512	49.2
2055	67:0	15,228	55.6	65:0	13,197	49.2
2060	67:0	16,050	55.6	65:0	13,910	49.2
2065	67:0	16,919	55.6	65:0	14,663	49.2
2070	67:0	17,837	55.6	65:0	15,459	49.2
2075	67:0	18,810	55.6	65:0	16,301	49.2
2080	67:0	19,833	55.6	65:0	17,188	49.2
Scaled medium earnings:[5]						
2002	65:0	13,526	39.9	65:0	13,526	39.9
2005	65:6	14,357	40.6	65:0	13,878	39.5
2010	66:0	15,618	41.9	65:0	14,575	39.4
2015	66:0	16,406	41.8	65:0	15,313	39.4
2020	66:2	17,278	41.7	65:0	15,929	38.9
2025	67:0	18,180	41.3	65:0	15,756	36.5
2030	67:0	19,159	41.2	65:0	16,606	36.5
2035	67:0	20,218	41.2	65:0	17,524	36.5
2040	67:0	21,361	41.2	65:0	18,511	36.5
2045	67:0	22,571	41.2	65:0	19,562	36.5
2050	67:0	23,834	41.3	65:0	20,656	36.5
2055	67:0	25,135	41.3	65:0	21,784	36.6
2060	67:0	26,494	41.3	65:0	22,960	36.6
2065	67:0	27,927	41.3	65:0	24,204	36.6
2070	67:0	29,444	41.3	65:0	25,518	36.5
2075	67:0	31,049	41.3	65:0	26,909	36.5
2080	67:0	32,739	41.3	65:0	28,374	36.5
Scaled high earnings:[6]						
2002	65:0	17,635	32.5	65:0	17,635	32.5
2005	65:6	18,871	33.4	65:0	18,238	32.4
2010	66:0	20,644	34.6	65:0	19,264	32.6
2015	66:0	21,687	34.5	65:0	20,241	32.5
2020	66:2	22,836	34.5	65:0	21,057	32.2
2025	67:0	24,028	34.1	65:0	20,823	30.2
2030	67:0	25,322	34.1	65:0	21,942	30.2
2035	67:0	26,720	34.0	65:0	23,155	30.1
2040	67:0	28,229	34.0	65:0	24,464	30.1
2045	67:0	29,829	34.1	65:0	25,851	30.1
2050	67:0	31,499	34.1	65:0	27,298	30.2
2055	67:0	33,216	34.1	65:0	28,788	30.2
2060	67:0	35,011	34.1	65:0	30,343	30.2
2065	67:0	36,906	34.1	65:0	31,985	30.2
2070	67:0	38,912	34.1	65:0	33,724	30.2
2075	67:0	41,032	34.1	65:0	35,561	30.2
2080	67:0	43,265	34.1	65:0	37,496	30.2

Table VI.E11.—Estimated Annual Scheduled Benefit Amounts[1] for Retired Workers With Various Pre-Retirement Earnings Patterns Based on Intermediate Assumptions, Calendar Years 2002-80 (Cont.)

	Retirement at normal retirement age			Retirement at age 65		
Year attain age 65[2]	Age at retirement	Constant 2002 dollars[3]	Percent of earnings	Age at retirement	Constant 2002 dollars[3]	Percent of earnings
Steady maximum earnings:[7]						
2002	65:0	$19,942	24.8	65:0	$19,942	24.8
2005	65:6	21,642	25.2	65:0	20,922	24.6
2010	66:0	24,491	26.9	65:0	22,670	25.1
2015	66:0	26,216	27.3	65:0	24,335	25.6
2020	66:2	27,731	27.4	65:0	25,478	25.5
2025	67:0	29,366	27.3	65:0	25,252	24.0
2030	67:0	30,975	27.4	65:0	26,651	24.0
2035	67:0	32,691	27.3	65:0	28,127	24.0
2040	67:0	34,495	27.3	65:0	29,680	24.0
2045	67:0	36,452	27.3	65:0	31,364	24.0
2050	67:0	38,485	27.3	65:0	33,116	24.0
2055	67:0	40,582	27.3	65:0	34,920	24.0
2060	67:0	42,772	27.3	65:0	36,806	24.0
2065	67:0	45,087	27.3	65:0	38,798	24.0
2070	67:0	47,537	27.3	65:0	40,905	24.0
2075	67:0	50,128	27.3	65:0	43,136	24.0
2080	67:0	52,857	27.3	65:0	45,485	24.0

[1] Annual scheduled benefit amounts are the total 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 for constant dollars is made using the CPI indexing series shown in table VI.E7.
[4] Career-average earnings at about 45 percent of the SSA average wage index (AWI).
[5] Career-average earnings at about 100 percent of the AWI.
[6] Career-average earnings at about 160 percent of the AWI.
[7] Earnings for each year equal to the OASDI contribution and benefit base.

F. ANALYSIS OF BENEFIT DISBURSEMENTS FROM THE OASI 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 over. Effective January 1991, the requirements for the disability of the widow or widower were made less restrictive.

On December 31, 2001, about 817,000 persons were receiving monthly benefits from the OASI Trust Fund because of their disabilities or the disabilities of children. This total includes 34,000 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 $5,500 million in calendar year 2001. Table VI.F1 shows these and similar figures for selected calendar years during 1960-2001, and estimated experience for 2002-11 based on the intermediate set of assumptions.

Table VI.F1.—Benefit Disbursements From the OASI Trust Fund With Respect to Disabled Beneficiaries

[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
1999	805	702	102	4,991	4,336	655
2000	811	707	104	5,194	4,514	680
2001	817	712	105	5,500	4,782	718
Estimates:						
2002	829	720	109	5,737	4,977	760
2003	840	728	112	5,941	5,142	799
2004	852	736	117	6,240	5,381	860
2005	864	743	121	6,567	5,636	931
2006	874	749	125	6,918	5,915	1,003
2007	882	755	127	7,273	6,205	1,067
2008	890	761	129	7,644	6,509	1,136
2009	897	767	130	8,025	6,825	1,200
2010	902	772	130	8,399	7,142	1,257
2011	907	777	130	8,792	7,479	1,313

[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 continued 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 $5,737 million in calendar year 2002 to $8,792 million in calendar year 2011, based on the intermediate assumptions.

In calendar year 2001, 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 $65,137 million. Of this amount, $5,500 million or 8.4 percent represented payments from the OASI Trust Fund. These and similar figures for selected calendar years during 1960-2001 and estimates for calendar years 2002-11 are presented in table VI.F2.

Table VI.F2.—Benefit Disbursements Under the OASDI Program With Respect to Disabled Beneficiaries
[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
1999	56,390	51,399	4,991	8.9
2000	60,195	55,001	5,194	8.6
2001	65,137	59,637	5,500	8.4
Estimates:				
2002	75,152	69,415	5,737	7.6
2003	75,632	69,691	5,941	7.9
2004	80,830	74,589	6,240	7.7
2005	87,311	80,744	6,567	7.5
2006	94,525	87,607	6,918	7.3
2007	102,189	94,916	7,273	7.1
2008	110,271	102,626	7,644	6.9
2009	118,447	110,422	8,025	6.8
2010	126,871	118,472	8,399	6.6
2011	135,748	126,956	8,792	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 VI.F1).

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

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.

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, and divorce. Economic assumptions include unemployment rates, average earnings, inflation, interest rates, and productivity. Program-specific assumptions include retirement patterns, and disability incidence and termination rates. Three sets of demographic, economic, and program-specific assumptions are presented in this report—

- Alternative II is the intermediate set of assumptions, and represents the Trustees' best estimates of likely future demographic, economic, and program-specific conditions.
- 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 III is characterized as a high cost set—it assumes relatively slow economic growth, high inflation, and unfavorable (from the standpoint of program financing) demographic conditions.

See tables V.A1, V.B1, and V.B2.

Automatic cost-of-living benefit 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 (CPI-W) 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 net increase in the CPI over a 2-year period. See table V.C1.

Auxiliary benefits. 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. (See Title 20, Chapter III, section 404.211(c) of the Code of Federal Regulations for a more precise definition.) These average wage amounts are used to index the taxable 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 table V.C1.

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 V.C2.

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.

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.

Constant dollars. Amounts adjusted by the CPI to the value of the dollar in a particular year.

Consumer Price Index—CPI. An official measure of inflation in consumer prices. 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 V.B1.

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 V.C1 and VI.A1. See "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 adjustment. See "Automatic cost-of-living benefit 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 for which earnings are creditable for Social Security purposes. Almost all employment is covered under the program. Some exceptions are:

- State and local government employees whose employer has not elected to be covered under Social Security and who are participating in a employer-provided pension plan.
- Current Federal civilian workers hired before 1984 who have not elected to be covered.
- Self-employed workers earning less than $400 in a calendar year.

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.

Creditable earnings. Wage or self-employment earnings posted to a worker's earnings record, upon which eligibility for and amount of benefits on that worker's record is based. The maximum amount of creditable earnings for each worker in a calendar year is determined by the contribution and benefit base.

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).

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 V.C3.

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 at ages 55 and over 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 normal retirement age have earnings in excess of certain exempt amounts. See table V.C1.

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 refundable to affected employees, while the employer taxes are not refundable.

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 2002 began October 1, 2001 and will end September 30, 2002.

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 V.B2 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. Noncontributory wage credits of $100 were granted for each $300 of military wages, up to a maximum credit of $1,200 per calendar year, from January 1978 through December 2001.

National average wage index. See "Average wage index."

Normal retirement age. The age at which a person may first become entitled to unreduced retirement benefits. For persons reaching age 62 before 2000, the normal retirement age is 65. It will 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 V.C3.

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 V.C2.

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 VI.A1 and VI.E1.

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, American Samoa and the Northern Mariana Islands; (iii) Federal civilian employees and persons in the U.S. 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. Present values are widely used in calculations involving financial transactions over long periods of time to account for the time value of money (interest). For the purpose of present-value calculations for this report, values are discounted by the effective yield on trust fund assets.

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 V.C2 for historical and assumed future bend points and table V.C1 for historical and assumed future benefit increases.

Quarters of coverage. Basic unit of measurement for determining insured status. In 2002, a worker receives one quarter of coverage (up to a total of four) for each $870 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 V.C2.

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 V.B1.

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 "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 tables III.A2 and III.A4 for a listing of the obligations held by the OASI and DI Trust Funds, respectively.

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° 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. A person who is earning more than a certain monthly amount (net of impairment-related work expenses) is ordinarily considered to be engaging in SGA. The amount of monthly earnings considered as SGA depends on the nature of a person's disability. The Social Security Act specifies a higher SGA amount for statutorily blind individuals; Federal regulations specify a lower SGA amount for non-blind individuals. Both SGA amounts increase with increases in the national average wage index.

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, expressed as a percentage. This percentage 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, expressed as a percentage. This percentage 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 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 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.

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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 based upon sound principles of actuarial practice and are generally accepted within the actuarial profession; and (2) the assumptions used and the resulting actuarial estimates are, individually and in the aggregate, reasonable for the purpose of evaluating the financial and actuarial status of the trust funds, taking into consideration the past experience and future expectations for the population, the economy, and the program.

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