

**THE 1993 ANNUAL REPORT OF THE FEDERAL OLD-
AGE AND SURVIVORS INSURANCE AND DISABILITY
INSURANCE TRUST FUND**

COMMUNICATION

FROM

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

TRANSMITTING

**THE 1993 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE
FEDERAL OLD-AGE AND SURVIVORS INSURANCE AND THE FED-
ERAL DISABILITY INSURANCE TRUST FUNDS, PURSUANT TO 42
U.S.C. 401(c)(2)**



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ordered to be printed**

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LETTER OF TRANSMITTAL

**BOARD OF TRUSTEES OF THE
FEDERAL OLD-AGE AND SURVIVORS INSURANCE
AND DISABILITY INSURANCE TRUST FUNDS,
Washington, D.C., April 6, 1993**

HONORABLE Thomas S. Foley
Speaker of the House of Representatives
Washington, D.C.

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

GENTLEMEN: We have the honor of transmitting to you the 1993 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 53d such report), in compliance with section 201(c)(2) of the Social Security Act.

Respectfully,



Lloyd M. Bentsen, *Secretary of the Treasury,
and Managing Trustee of the Trust Funds.*



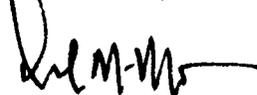
Robert B. Reich, *Secretary of Labor,
and Trustee.*



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



Stanford G. Ross, *Trustee.*



David M. Walker, *Trustee.*



Louis D. Enoff, *Acting Commissioner
of Social Security, and Secretary,
Board of Trustees.*

Contents

	Page
I. OVERVIEW	1
A. INTRODUCTION.....	1
B. HIGHLIGHTS	2
C. TRUST FUND FINANCIAL OPERATIONS	8
1. Income	8
2. Expenditures	9
3. Trust Fund Assets.....	10
D. INTRODUCTION TO ACTUARIAL ESTIMATES.....	11
E. ECONOMIC AND DEMOGRAPHIC ASSUMPTIONS.....	13
F. SHORT-RANGE ACTUARIAL ESTIMATES	15
1. OASI Trust Fund.....	15
2. DI Trust Fund	17
3. OASI and DI Trust Funds, Combined	19
G. LONG-RANGE ACTUARIAL ESTIMATES	22
1. Long-Range Income Rates, Cost Rates, and Annual Balances.....	22
2. Summarized Income Rates, Cost Rates, and Balances	25
3. Long-Range Projection of Trust Fund Assets	28
4. Test of Long-Range Close Actuarial Balance	30
H. CONCLUSION	33
II. ACTUARIAL ANALYSIS	36
A. SOCIAL SECURITY AMENDMENTS SINCE THE 1992 REPORT.....	36
B. DESCRIPTION OF THE TRUST FUNDS	37
C. SUMMARY OF THE OPERATIONS OF THE OLD-AGE AND SURVIVORS INSURANCE AND DISABILITY INSURANCE TRUST FUNDS, FISCAL YEAR 1992.....	43
1. Old-Age and Survivors Insurance Trust Fund	43
2. Disability Insurance Trust Fund	49
3. Old-Age, Survivors and Disability Insurance Trust Funds, Combined	53
D. PRINCIPAL ECONOMIC AND DEMOGRAPHIC ASSUMPTIONS	58
1. Economic Assumptions.....	59
2. Demographic Assumptions	63
E. AUTOMATIC ADJUSTMENTS.....	68

	Page
F. ACTUARIAL ESTIMATES	75
1. Operations and Status of the Trust Funds During the Period October 1, 1992, to December 31, 2002.....	80
a. OASI Trust Fund Operations.....	81
b. DI Trust Fund Operations	85
c. Combined OASI and DI Trust Fund Operations.....	90
2. Long-Range Actuarial Status of the Trust Funds	114
G. LONG-RANGE SENSITIVITY ANALYSIS.....	138
1. Total Fertility Rate	138
2. Death Rates.....	139
3. Net Immigration	141
4. Real-Wage Differential.....	142
5. Consumer Price Index.....	143
6. Real-Interest Rate	145
7. Disability Incidence Rates.....	146
8. Disability Termination Rates	147
H. ASSUMPTIONS AND METHODS UNDERLYING THE ACTUARIAL ESTIMATES	149
1. Total Population.....	149
2. Covered Population	153
3. Average Earnings, Inflation, and Real Interest Rate	154
4. Taxable Payroll and Taxes	157
5. Insured Population.....	158
6. Old-Age and Survivors Insurance Beneficiaries.....	159
7. Disability Insurance Beneficiaries	164
8. Average Benefits	169
9. Benefit Payments.....	169
10. Administrative Expenses.....	170
11. Railroad Retirement Financial Interchange	170
12. Benefits to Uninsured Persons.....	171
13. Military-Service Transfers	171
14. Income From Taxation of Benefits	171

	Page
III. APPENDICES	173
A. ACTUARIAL ESTIMATES FOR THE OASDI AND HI PROGRAMS, COMBINED	173
B. LONG-RANGE ESTIMATES OF SOCIAL SECURITY TRUST FUND OPERATIONS IN DOLLARS	179
C. LONG-RANGE ESTIMATES OF SOCIAL SECURITY TRUST FUND OPERATIONS AS A PERCENTAGE OF THE GROSS DOMESTIC PRODUCT	190
D. TEN YEAR HISTORY OF ACTUARIAL BALANCE ESTIMATES	196
E. ACTUARIAL ANALYSIS OF BENEFIT DISBURSEMENTS FROM THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE TRUST FUND WITH RESPECT TO DISABLED BENEFICIARIES	199
F. FEDERAL REGISTER NOTICE: 1993 COST-OF-LIVING INCREASE AND OTHER DETERMINATIONS	202
G. GLOSSARY	209
H. STATEMENT OF ACTUARIAL OPINION	222

LIST OF TABLES

	Page
DESCRIPTION OF THE TRUST FUNDS	
II.B.1 Contribution and Benefit Base and Contribution Rates	38
SUMMARY OF THE OPERATIONS OF THE OLD-AGE AND SURVIVORS INSURANCE AND DISABILITY INSURANCE TRUST FUNDS, FISCAL YEAR 1992	
II.C.1 Statement of Operations of the OASI Trust Fund During Fiscal Year 1992	45
II.C.2 Assets of the OASI Trust Fund, by Type, Interest Rate, and Year of Maturity, at End of Fiscal Year, 1991 and 1992 . . .	47
II.C.3 Statement of Operations of the DI Trust Fund During Fiscal Year 1992	50
II.C.4 Assets of the DI Trust Fund, by Type, Interest Rate, and Year of Maturity, at End of Fiscal Year, 1991 and 1992 . . .	52
II.C.5 Statement of Operations of the OASI and DI Trust Funds, Combined, During Fiscal Year 1992	53
II.C.6 Comparison of Actual and Estimated Operations of the OASI and DI Trust Funds, Fiscal Year 1992	55
II.C.7 Estimated Distribution of Benefit Payments From the OASI and DI Trust Funds, by Type of Beneficiary or Payment, Fiscal Years 1991 and 1992	56
II.C.8 Net Administrative Expenses as a Percentage of Contribution Income and of Benefit Payments, by Trust Fund, Fiscal Years 1988-92	57
II.C.9 Investment Transactions of the OASI and DI Trust Funds in Fiscal Year 1992	57
PRINCIPAL ECONOMIC AND DEMOGRAPHIC ASSUMPTIONS	
II.D.1 Selected Economic Assumptions by Alternative, Calendar Years 1960-2070	59
II.D.2 Selected Demographic Assumptions by Alternative, Calendar Years 1940-2070	65
AUTOMATIC ADJUSTMENTS	
II.E.1 Average Wage Index, Calendar Years 1951-91	69
II.E.2 Cost-of-Living Benefit Increases, Average Wage Index Increases, OASDI Contribution and Benefit Bases, and Hospital Insurance Contribution Bases, 1975-2002	70

	Page
AUTOMATIC ADJUSTMENTS (Cont.)	
II.E.3 Selected OASDI Program Amounts Determined Under the Automatic-Adjustment Provisions, Calendar Years 1975-93, and Projected Future Amounts, Calendar Years 1994-2002, on the Basis of the Intermediate Set of Assumptions	74
ACTUARIAL ESTIMATES	
II.F.1 Estimated Operations of the OASI Trust Fund by Alternative, Calendar Years 1992-2002	82
II.F.2 Estimated Operations of the DI Trust Fund by Alternative, Calendar Years 1992-2002	88
II.F.3 Estimated Operations of the OASI and DI Trust Funds, Combined, by Alternative, Calendar Years 1992-2002	91
II.F.4 Trust Fund Ratios by Trust Fund, Selected Calendar Years 1950-92, and Estimated Future Ratios by Alternative, Calendar Years 1993-2002	94
II.F.5 Change in OASI and DI Trust Fund Ratios at the Beginning of the Tenth Year of Projection, Based on the Intermediate Assumptions, By Reason for Change	96
II.F.6 Comparison of Income Rates and Cost Rates, by Trust Fund, Selected Calendar Years 1950-92, and Estimated Rates by Alternative, Calendar Years 1993-2002	99
II.F.7 Operations of the OASI Trust Fund During Selected Fiscal Years 1940-92 and Estimated Future Operations During Fiscal Years 1993-2002, on the Basis of the Intermediate Set of Assumptions	102
II.F.8 Operations of the OASI Trust Fund During Selected Calendar Years 1940-92 and Estimated Future Operations During Calendar Years 1993-2002, on the Basis of the Intermediate Set of Assumptions	104
II.F.9 Operations of the DI Trust Fund During Selected Fiscal Years 1960-92 and Estimated Future Operations During Fiscal Years 1993-2002, on the Basis of the Intermediate Set of Assumptions	106

	Page
ACTUARIAL ESTIMATES (Cont.)	
II.F.10 Operations of the DI Trust Fund During Selected Calendar Years 1960-92 and Estimated Future Operations During Calendar Years 1993-2002, on the Basis of the Intermediate Set of Assumptions.	108
II.F.11 Operations of the OASI and DI Trust Funds, Combined, During Selected Fiscal Years 1960-92 and Estimated Future Operations During Fiscal Years 1993-2002, on the Basis of the Intermediate Set of Assumptions.	110
II.F.12 Operations of the OASI and DI Trust Funds, Combined, During Selected Calendar Years 1960-92 and Estimated Future Operations During Calendar Years 1993-2002 on the Basis of the Intermediate Set of Assumptions.	112
II.F.13 Comparison of Estimated Income Rates and Cost Rates by Trust Fund and Alternative, Calendar Years 1993-2070. . . .	116
II.F.14 Comparison of Summarized Income Rates and Cost Rates by Trust Fund and Alternative, Calendar Years 1993-2067.	119
II.F.15 Comparison of Estimated Long-Range Actuarial Balances With the Minimum Allowable for the Test for Close Actuarial Balance by Trust Fund, Based on Alternative II . .	124
II.F.16 Components of Annual Income Rates by Trust Fund and Alternative, Calendar Years 1993-2070	126
II.F.17 Components of Summarized Income Rates and Cost Rates by Trust Fund and Alternative, Calendar Years 1993-2067.	128
II.F.18 Comparison of OASDI Covered Workers and Beneficiaries by Alternative, Calendar Years 1945-2070 . . .	129
II.F.19 Estimated Trust Fund Ratios by Trust Fund and Alternative, Calendar Years 1993-2070	134
II.F.20 Change in Actuarial Balance Estimated on the Basis of Intermediate, Alternative II, Estimates by Trust Fund and Reason for Change	136

	Page
LONG-RANGE SENSITIVITY ANALYSIS	
II.G.1 Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Alternative II With Various Fertility Assumptions	139
II.G.2 Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Alternative II With Various Death-Rate Assumptions	140
II.G.3 Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Alternative II With Various Net-Immigration Assumptions	141
II.G.4 Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Alternative II With Various Real-Wage Assumptions	143
II.G.5 Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Alternative II With Various CPI-Increase Assumptions	144
II.G.6 Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Alternative II With Various Real-Interest Assumptions	145
II.G.7 Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Alternative II With Various Disability Incidence Assumptions	146
II.G.8 Estimated OASDI Income Rates, Cost Rates, and Actuarial Balances, Based on Alternative II With Various Disability Termination Assumptions	147
ASSUMPTIONS AND METHODS UNDERLYING THE ACTUARIAL ESTIMATES	
II.H.1 Social Security Area Population as of July 1 and Dependency Ratios, by Alternative and Broad Age Group, Calendar Years 1950-2070	152
II.H.2 OASI Beneficiaries With Monthly Benefits in Current-Payment Status as of December 31 by Alternative, Calendar Years 1945-2070	163
II.H.3 DI Beneficiaries With Monthly Benefits in Current-Payment Status as of December 31 by Alternative, Calendar Years 1960-2070	168

	Page
ACTUARIAL ESTIMATES FOR THE OASDI AND HI PROGRAMS, COMBINED	
III.A.1 Contribution Rates for the OASDI and HI Programs	174
III.A.2 Comparison of Estimated Income Rates and Cost Rates for OASDI and HI by Alternative, Calendar Years 1993-2070.	175
III.A.3 Comparison of Summarized Income Rates and Cost Rates for OASDI and HI by Alternative, Calendar Years 1993-2067.	178
LONG-RANGE ESTIMATES OF SOCIAL SECURITY TRUST FUND OPERATIONS IN DOLLARS	
III.B.1 Selected Economic Variables by Alternative, Calendar Years 1992-2070.	180
III.B.2 Estimated Operations of the Combined OASI and DI Trust Funds in Constant 1992 Dollars by Alternative, Calendar Years 1993-2070.	183
III.B.3 Estimated Operations of the Combined OASI and DI Trust Funds in Current Dollars by Alternative, Calendar Years 1993-2070.	185
III.B.4 Estimated OASDI and HI Income Excluding Interest, Outgo, and Balance in Current Dollars by Alternative, Calendar Years 1993-2070.	187
III.B.5 Estimated Average Benefit Amount Payable to Retired Workers With Various Steady Pre-Retirement Earnings Levels Based on Alternative II Assumptions, Calendar Years 1993-2070.	189

	Page
LONG-RANGE ESTIMATES OF SOCIAL SECURITY TRUST FUND OPERATIONS AS A PERCENTAGE OF THE GROSS DOMESTIC PRODUCT	
III.C.1 Estimated OASDI and HI Income Excluding Interest, Outgo, and Balance as a Percentage of GDP by Alternative, Calendar Years 1993-2070.....	192
III.C.2 Ratio of Taxable Payroll to GDP by Alternative, Calendar Years 1993-2070.....	194
TEN YEAR HISTORY OF ACTUARIAL BALANCE ESTIMATES	
III.D.1 Long-Range Actuarial Balances for the OASDI Program as Shown for the Intermediate Assumptions in the Trustees Reports Issued in Years 1983-1993.....	198
ACTUARIAL ANALYSIS OF BENEFIT DISBURSEMENTS FROM THE FEDERAL OLD-AGE AND SURVIVORS INSURANCE TRUST FUND WITH RESPECT TO DISABLED BENEFICIARIES	
III.E.1 Benefit Disbursements From the OASI Trust Fund With Respect to Disabled Beneficiaries, Selected Calendar Years 1960-1992 and Estimated Future Disbursements During 1993-2002 Based on Intermediate Assumptions.....	200
III.E.2 Benefit Disbursements Under the OASDI Program With Respect to Disabled Beneficiaries, by Trust Fund, Selected Calendar Years 1960-1992, and Estimated Future Disbursements During 1993-2002 Based on Intermediate Assumptions.....	201

FIGURES

	Page
II.F.1 Estimated Assets at End of Year, for OASI and DI Trust Funds Combined, Calendar Years 1983-2002	93
II.F.2 Estimated Trust Fund Ratios, for OASI and DI Trust Funds Combined, Calendar Years 1983-2002	94
II.F.3 Estimated OASDI Income Rates and Cost Rates by Alternative, Calendar Years 1982-2070	121
II.F.4 Comparison of Estimated Long-Range Actuarial Balances With the Minimum Allowable for Close Actuarial Balance, Alternative II by Trust Fund.	125
II.F.5 Ratios of Estimated OASDI Beneficiaries Per 100 Covered Workers by Alternative, Calendar Years 1983-2070	131
II.F.6 Estimated Trust Fund Ratios, for OASI and DI Trust Funds Combined, Calendar Years 1983-2070	135
III.B.1 Estimated OASDI Income in Constant Dollars, Based on Alternative II, Calendar Years 1993-2036	184

I. OVERVIEW

A. INTRODUCTION

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

The Social Security Act establishes a Board of Trustees 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 five members, three 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, and the Secretary of Health and Human Services. The other two members are appointed by the President and confirmed by the Senate to serve as public representatives: Stanford G. Ross and David M. Walker are currently serving 4-year terms that began on October 2, 1990.

The Social Security Act requires, among other duties, that the Board report annually to the Congress on the financial and actuarial status of the OASI and DI Trust Funds. This annual report, for 1993, is the 53d such report.

B. HIGHLIGHTS

This section summarizes the more important developments since the 1992 Annual Report was issued and describes the major features of this report. (Throughout this report totals do not necessarily equal the sums of rounded components.)

- At the end of December 1992, 41.5 million people were receiving monthly benefits under the OASDI program. During 1992, an estimated 132 million people worked in jobs covered by the OASDI program and paid OASDI taxes on their earnings. The following table summarizes the financial transactions of the OASI and DI Trust Funds in fiscal year 1992 which ended September 30, 1992 (in billions):

	OASI	DI	Combined
Assets at beginning of year	\$255.4	\$13.0	\$268.4
Income	307.1	31.2	338.3
Expenditures	256.2	31.3	287.5
Net increase in assets	50.9	-1	50.7
Assets at end of year	306.3	12.9	319.2

- The invested assets of the OASI and DI Trust Funds, combined, earned interest amounting to \$23.6 billion during fiscal year 1992. The effective annual rate of interest earned by the combined assets during calendar year 1992 was 8.7 percent. During the same period, the average interest rate on new securities purchased by the trust funds was 7.1 percent.
- Administrative expenses for the OASDI program during fiscal year 1992 were \$2.7 billion, which is equal to 0.9 percent of benefit payments for the year.
- An automatic benefit increase of 3.0 percent became effective for December 1992. Effective for 1993, the OASDI “contribution and benefit base” was increased from \$55,500 to \$57,600. In addition, the annual exempt amounts under the “retirement earnings test” were raised from \$7,440 to \$7,680 for beneficiaries under age 65, and from \$10,200 to \$10,560 for beneficiaries aged 65 to 69. (The retirement earnings test does not apply to beneficiaries aged 70 and over.)
- On April 2, 1992, in compliance with Section 709 of the Social Security Act, the Board reported to Congress that the reserves of the DI Trust Fund were then expected to be exhausted in

1997 and could possibly be exhausted as early as 1995. Following a careful analysis of the DI program by the Department of Health and Human Services, the ex officio members of the Board of Trustees, on December 16, 1992, submitted a report "The Social Security Disability Insurance Program: An Analysis," to Congress. The ex officio members of the Board recommended that a payroll tax rate reallocation should be used to enable the DI fund to pass the test of short-range financial adequacy, but that the specific amount of the reallocation be determined after the Board's 1993 Annual Report is issued. The ex officio members also recommended that a significant research effort be undertaken to establish more clearly whether the DI program's recent rapid growth is temporary or a longer term trend.

The Public Trustees, because of their positions as independent trustees, did not consider it appropriate to participate with the ex officio trustees in the analysis of the DI program experience or the development of specific legislative recommendations. However, the Public Trustees reviewed both the analysis and the recommendations of the ex officio trustees and concurred in the recommendations both for a tax rate reallocation and for the best possible research to assist policymakers in formulating solutions to the projected long-range DI deficit.

To evaluate the financial status of the OASDI program under a broad range of possible future conditions, actuarial estimates are prepared under three alternative sets of economic and demographic assumptions. Alternative II is the "intermediate" set of assumptions, and represents the Trustees' "best estimates" of future economic and demographic conditions. Alternative I is characterized as a more "optimistic" set—it assumes relatively rapid economic growth, low inflation, and favorable (from the standpoint of program financing) demographic conditions. Alternative III is more "pessimistic," with slower economic growth, more rapid inflation, and financially disadvantageous demographic conditions.

The Trustees prepare both "short-range" and "long-range" estimates of the financial and actuarial status of the trust funds. Short-range estimates are prepared for the next 10 years (1993-2002). Long-range estimates cover the next 75 years, in keeping with the long-term financial obligations incurred by the OASDI program. Specific tests are applied to evaluate the overall actuarial status of the program.

Overview

There is a short-range test of financial adequacy and a long-range test of close actuarial balance. The following statements summarize the actuarial estimates:

- The assets of the DI Trust Fund are estimated to decline steadily from \$12.3 billion at the beginning of calendar year 1993 until the fund is exhausted in 1995, based on both the intermediate and more pessimistic assumptions. Based on alternative I, the DI Trust Fund would become exhausted in 1997.

The DI Trust Fund fails to meet the short-range test of financial adequacy.

- Because the short-range test of financial adequacy is not met by the DI Trust Fund, and the fund is expected to be exhausted in 1995, legislative action is needed promptly to strengthen the financing of the DI Trust Fund. As noted earlier, the members of the Board of Trustees recommended in December 1992 a tax rate reallocation between the OASI and DI Trust Funds to remedy the projected financial shortfall in the DI Trust Fund in the next few years. The current Trustees are separately recommending to the Congress a reallocation from OASI to DI effective with 1993.
- The assets of the OASI Trust Fund grow steadily under all three sets of assumptions during 1993 to 2002. OASI assets are estimated to increase from their current level of \$319.1 billion, or 117 percent of annual expenditures, to \$1,096 billion, or 254 percent of annual expenditures at the beginning of the year 2002, based on the intermediate assumptions.

The OASI Trust Fund passes the short-range test of financial adequacy by a wide margin.

- Over the next 10 years, the estimated assets of the OASI and DI Trust Funds, if combined, would increase substantially. At the beginning of calendar year 1993, OASDI assets amounted to \$331.5 billion or 107 percent of annual OASDI expenditures. By the year 2002, the assets are estimated to increase to \$1,010 billion, or 199 percent of annual expenditures, based on the intermediate assumptions. In the 1992 Annual Report, based on the intermediate assumptions, assets were estimated to increase to 206 percent of annual expenditures by the year 2001.

The OASI and DI Trust Funds, on a combined basis, pass the short-range test of financial adequacy by a wide margin. How-

ever, legally the OASI and DI programs are separate and each has its own trust fund. As a result, separate projections for the OASI and DI funds are required.

- In the long range, income and expenditures are generally expressed as a percentage of the total amount of earnings subject to taxation under the OASDI program (referred to as “taxable payroll”). Summarized income and cost rates over the 75-year long-range period are determined through present-value calculations and by taking into account actual beginning fund balances and targeted ending fund balances of 100 percent of annual expenditures.

Overall, for the period 1993-2067, the difference between the summarized income and cost rates is a deficit of 1.46 percent of taxable payroll based on the intermediate alternative II assumptions. This is the same as the estimated deficit shown in the 1992 Annual Report for the period 1992-2066, based on the intermediate assumptions. Based on alternative I the difference is a positive actuarial balance of 1.16 percent of taxable payroll; and based on alternative III, the difference is a deficit of 4.96 percent of taxable payroll.

On a combined basis, the OASDI program does not meet the requirements for the long-range test of close actuarial balance. Individually, the OASI and DI Trust Funds also fail the long-range test. These results are also the same as those shown in the 1992 Annual Report.

- Income from OASDI payroll taxes represents 12.4 percent of taxable payroll—made up of the 6.2 percent tax rate paid by employees and a matching amount paid by their employers. (Self-employed workers pay OASDI taxes at the combined employee-employer rate.) Since these tax rates are not scheduled to change in the future under present law, OASDI payroll tax income as a percentage of taxable payroll remains constant at 12.4 percent.

Under present law, up to one-half of a beneficiary’s OASDI benefits may be subject to Federal income taxation. The income tax revenues from this provision are transferred to the OASI and DI Trust Funds and are currently equivalent to about 0.2 percent of taxable payroll. Adding these income sources together yields a total “income rate” of 12.6 percent. This rate is estimated to increase gradually to 13.2 percent of taxable payroll

Overview

by the end of the 75-year projection period based on the intermediate assumptions. The growth is attributable, in part, to the increasing proportion of beneficiaries who will pay income taxes on their OASDI benefits in the future.

- OASDI expenditures for benefit payments and administrative expenses currently represent about 11.6 percent of taxable payroll. This “cost rate” is estimated to remain below the corresponding income rate for the next 24 years, based on the intermediate assumptions. Under alternatives I and III, the estimated cost rate is lower than the income rate for the next 34 and the next 4 years, respectively. With the retirement of the “baby-boom” generation starting in about 2010 OASDI costs will increase rapidly relative to the taxable earnings of workers. By the end of the 75-year projection period, OASDI cost rates are estimated to reach 12.4 percent, 18.0 percent, and 27.1 percent of taxable payroll under alternatives I, II, and III, respectively.
- Under the intermediate assumptions, the excess of OASDI tax revenues over expenditures for the next 24 years, together with interest earnings on the trust funds, will result in a rapid accumulation of assets for the combined OASI and DI Trust Funds during this period. However, total income is estimated to fall short of expenditures in 2025 and later, under the intermediate assumptions. In this circumstance, trust fund assets would be redeemed to cover the difference. The assets of the combined OASI and DI Trust Funds are estimated to be depleted under present law in 2036 based on the intermediate assumptions. Under the more favorable conditions assumed in alternative I, the combined OASI and DI assets would continue growing throughout the long-range projection period, reaching about 10 times annual expenditures. Under the more pessimistic assumptions in alternative III, the combined assets are estimated to be exhausted in 2017.

Because the assets of the trust funds are generally invested in special securities of the U.S. Treasury, the initial accumulation of assets will result in a substantial cash flow from the trust funds to the general fund of the Treasury. The subsequent redemption of securities will cause this cash flow to reverse. The magnitude and pattern of these cash flows have important public policy and economic implications that extend beyond the operation of the OASDI program itself.

- Because the long-range test of close actuarial balance is not met

Highlights

by either the OASI or DI Trust Funds, nor by the two funds, combined, appropriate options to strengthen the long-range financing of these funds should be developed.

Overview

C. TRUST FUND FINANCIAL OPERATIONS

The various sources of income to the OASDI program, and categories of expenditures, can be illustrated by reference to the actual transactions during fiscal year 1992. The following table summarizes these transactions.

Type of transaction	Amount of transaction in fiscal year 1992 (in billions)
Sources of income:	
Payroll taxes	\$308.4
Taxation of benefits	6.2
General fund reimbursements	(1)
Interest	23.6
Categories of expenditures:	
Benefit payments	281.6
Railroad Retirement financial interchange	3.2
Administrative expenses	2.7

¹ Less than \$50 million.

1. Income

Most OASDI income consists of the taxes paid by employees, employers, and the self-employed on earnings in employment covered by the OASDI program. These taxes represent a portion of the Social Security payroll taxes collected under the Federal Insurance Contributions Act (FICA) and the Self-Employment Contributions Act (SECA). The balance of the Social Security payroll tax is used to finance Hospital Insurance (HI), commonly referred to as "Part A" of the Medicare program. Such taxes are paid on earnings up to specified maximum annual amounts. The following table shows the earnings bases, tax rates, and maximum tax amounts by program for 1993.

For 1993...	OASI	DI	OASDI	HI	Total for OASDI and HI
Maximum taxable amount of earnings	\$57,600	\$57,600	\$57,600	\$135,000	—
Tax rate for employees and employers, each (in percent)	5.60	0.60	6.20	1.45	7.65
Tax rate for self-employed persons (in percent)	11.20	1.20	12.40	2.90	15.30
Maximum tax payable by an employee or employer	\$3,225.60	\$345.60	\$3,571.20	\$1,957.50	\$5,528.70
Maximum tax payable by a self-employed person	\$6,451.20	\$691.20	\$7,142.40	\$3,915.00	\$11,057.40

Trust Fund Financial Operations

The tax rates for OASDI and for HI are not scheduled to change from their current values under present law. (The allocation of the OASDI tax rate between OASI and DI is scheduled to change in the year 2000, as shown in table II.B.1.) The maximum amounts of earnings subject to OASDI and HI taxes increase automatically each year, based on the increase in the average wages for all workers (as described in section II.E).

In fiscal year 1992, OASDI payroll tax income amounted to \$308.4 billion. Payroll taxes represented 91 percent of the total income received by the OASDI program during the year.

Beneficiaries whose "adjusted gross income" exceeds certain threshold amounts must pay income taxes on up to one-half of their annual OASDI benefits. The revenue from this requirement is credited to the OASI and DI Trust Funds and totaled \$6.2 billion in fiscal year 1992.

The trust funds receive relatively small amounts of reimbursement from the general fund of the Treasury for certain special categories of benefits for which there is no other financing. In fiscal year 1992, the trust funds were reimbursed for the costs of paying benefits to certain uninsured persons. The total amount of the reimbursement was about \$19 million.

The final source of income to the trust funds is from interest on the invested assets of the funds. The portion of each fund that is not needed to meet current expenditures is invested. By law, these investments must be in interest-bearing securities of the U.S. Government, in securities guaranteed by the U.S., or in certain securities issued by Federally sponsored agencies. In practice, trust fund assets are invested almost entirely in special U.S. Treasury securities. Interest from all investments in fiscal year 1992 amounted to \$23.6 billion.

2. Expenditures

The primary type of expenditure by the OASDI program is the payment of benefits. In fiscal year 1992, benefit payments totalling \$281.6 billion were made to retired and disabled workers and their families,

Overview

and to survivors of deceased workers. These payments represented 98 percent of total OASDI expenditures for the year.

By law, there is a financial interchange between the OASDI program and the Railroad Retirement program. As a result of this requirement, \$3.2 billion was transferred from the OASI and DI Trust Funds to the Railroad Retirement program in fiscal year 1992.

The last category of expenditure is for the cost of administering the OASDI program. In fiscal year 1992, administrative expenses were \$2.7 billion, or about 0.9 percent of total benefits paid during the year.

3. Trust Fund Assets

For fiscal year 1992, total income was \$338.3 billion and total expenditures were \$287.5 billion. Thus, the assets of the OASI and DI Trust Funds increased by a net total of \$50.7 billion during the year, from \$268.4 billion to \$319.2 billion.

The trust funds serve as a mechanism to accommodate for a period of time imbalances between income and expenditures. For example, the expenditures of the DI Trust Fund exceeded income to the fund in fiscal year 1992 (for reasons that will be described subsequently), necessitating a redemption of assets to cover the difference. In the event of recurring shortfalls, the trust funds can allow a period of time for the development, enactment, and implementation of legislation to restore financial stability to the program.

The invested assets of the trust funds are backed by the full faith and credit of the U.S. Government, in the same way as other public-debt obligations of the U.S. Government. As these invested assets continue to increase, interest earnings will play an increasingly important role in program financing. In particular, over the next 20 to 30 years, interest earnings on the invested assets of the trust funds will become a larger share of total income. In fiscal year 1992, interest income to the combined OASI and DI Trust Funds represented 7.0 percent of total OASDI income. If both funds were combined (avoiding the exhaustion of the DI fund in 1995), interest income in fiscal year 2002 would represent an estimated 10.6 percent of total income.

D. INTRODUCTION TO ACTUARIAL ESTIMATES

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

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

Because of the inherent uncertainty in estimates for as many as 75 years into the future, projections are shown in this report for three alternative sets of assumptions regarding future economic and demographic trends. Designated as alternatives I, II, and III, the assumptions range from optimistic (alternative I) to pessimistic (alternative III), with alternative II representing the intermediate, or "best estimates" in the opinion of the Trustees.

From the estimated income, expenditure, and asset amounts, a number of different measures are calculated for use in evaluating the financial status of the program. Because of the difficulty in comparing dollar values from one period to another, these measures are generally based on relative scales (although financial operations in nominal and inflation-adjusted dollar amounts are also available). These measures include (1) the annual amounts of future income and outgo as a percentage of the amount of earnings subject to the OASDI payroll tax, (2) the annual differences between these income and outgo figures, and (3) summary comparisons of these figures over various periods. The level of trust fund assets relative to annual program expenditures and the year in which trust fund exhaustion

Overview

may be projected to occur are additional measures for evaluating the financial status of the program. Careful review of these measures provides a reasonably complete picture of the financial outlook for the OASDI program.

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

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

E. ECONOMIC AND DEMOGRAPHIC ASSUMPTIONS

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

It is not possible to know precisely what the future holds with respect to these economic and demographic factors. In recognition of this uncertainty, actuarial estimates are prepared under three alternative sets of economic and demographic assumptions. An "intermediate" set of assumptions, alternative II, is selected to provide a single "best estimate" of future economic and demographic conditions. Alternative I is a more "optimistic" set of assumptions from the standpoint of OASDI financing and alternative III is a more "pessimistic" set of assumptions. The assumptions vary from year to year during the first 5 to 25 years, in most cases, before reaching their ultimate assumed values for the remainder of the 75-year projection period.

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

Overview

The following table summarizes the ultimate values assumed for the key economic and demographic factors underlying the actuarial estimates shown in this report. These ultimate values apply for years after 2015, with the exception of life expectancy which is assumed to continue improving throughout the projection period.

Ultimate assumptions	Alternative I	Alternative II	Alternative III
Percentage change in:			
Average wage in covered employment	4.7	5.1	5.6
Consumer Price Index (CPI)	3.0	4.0	5.0
Real-wage differential (percent)	1.7	1.1	0.6
Unemployment rate (percent)	5.0	6.0	7.0
Interest rate (percent)	6.0	6.3	6.5
Fertility rate (children per woman)	2.2	1.9	1.6
Life expectancy at birth in 2070 (combined average for men and women, in years)	77.7	80.7	84.3
Annual net immigration (in thousands)	1,100.0	850.0	700.0

These key assumptions for the 1993 Annual Report are largely unchanged, as compared to the assumptions used in the 1992 report. The only major change in an ultimate assumption is an increase in the level of annual net immigration, by 100,000 for each of the three alternatives, consistent with a recent reassessment of the expected effect of the Immigration Act of 1990 by the Immigration and Naturalization Service. Revisions of other assumptions for the early years of the projection period, based on data collected since the 1992 report, had little or no effect on these ultimate annual rates. The values for life expectancy are slightly different because they reflect the accumulated difference in annual-mortality-rate assumptions for all years through the year 2070.

These assumptions reflect a careful assessment of past data and future prospects. No major change other than that made for annual net immigration was deemed necessary at this time to ensure that the financial projections continue to be based on the most plausible range of economic and demographic conditions.

F. SHORT-RANGE ACTUARIAL ESTIMATES

The financial status of the OASDI program during the next 10 years (1993-2002) is generally evaluated by examining the adequacy of the estimated future level of trust fund assets. Because of inflation, economic growth, and growth in the OASDI program, asset levels expressed in nominal dollar amounts are not comparable over long periods of time. For this reason, it is more informative to consider a relative measure of the program's financial condition.

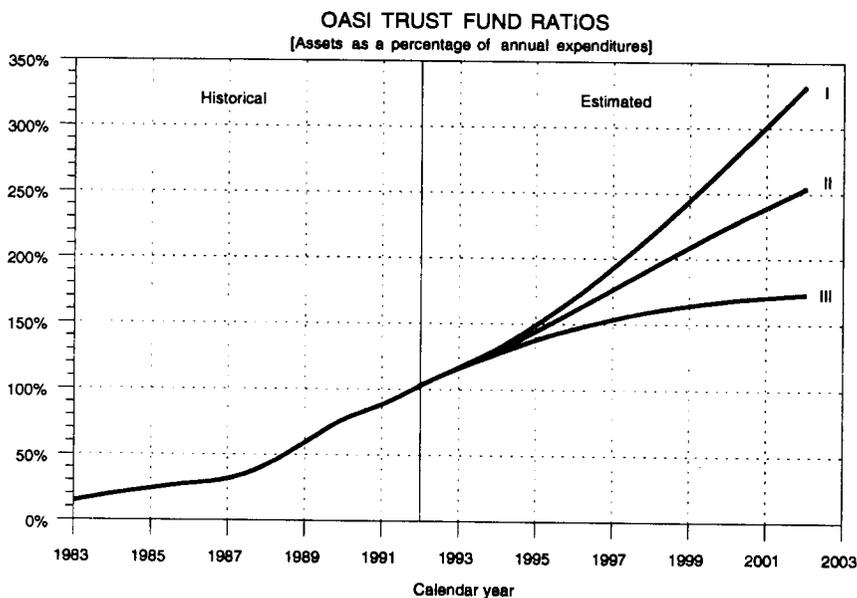
For example, OASDI assets at the beginning of calendar year 1993 totaled \$331 billion, while assets at the beginning of 1960 were \$22 billion. The asset level in 1993 would be sufficient to cover almost 13 months of expenditures in the absence of other income. Assets in 1960, although much smaller in nominal dollars, could have covered about 22 months of expenditures and thus represented a much stronger contingency reserve.

The ratio of trust fund assets at the beginning of a year to expenditures during the year is termed the "trust fund ratio." The trust fund ratio serves as the primary measure of the fund's financial adequacy in the short range. It is also used when applying the explicit short-range test of financial adequacy, as will be illustrated in the next subsection. (Annual reports for prior years have sometimes referred to this ratio as the "contingency fund ratio.")

1. OASI Trust Fund

The following chart presents trust fund ratios for the OASI Trust Fund. Actual past values for 1983 through 1992 are shown, together with estimated values for 1993-2002 based on the alternative sets of assumptions.

Overview



The estimates indicate that the OASI trust fund ratio would generally increase by a substantial amount in every year of the short-range projection period under each of the three sets of assumptions. Based on the alternative II assumptions, the ratio is estimated to increase from 117 percent at the beginning of calendar year 1993 to 254 percent by the year 2002. Under the more optimistic conditions assumed for alternative I, the ratio would reach 331 percent at the beginning of 2002. Despite the more pessimistic conditions under alternative III, OASI assets would still increase steadily to 173 percent of annual expenditures at the beginning of 2002.

As noted previously, an explicit test of short-range financial adequacy is applied to each trust fund. 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.

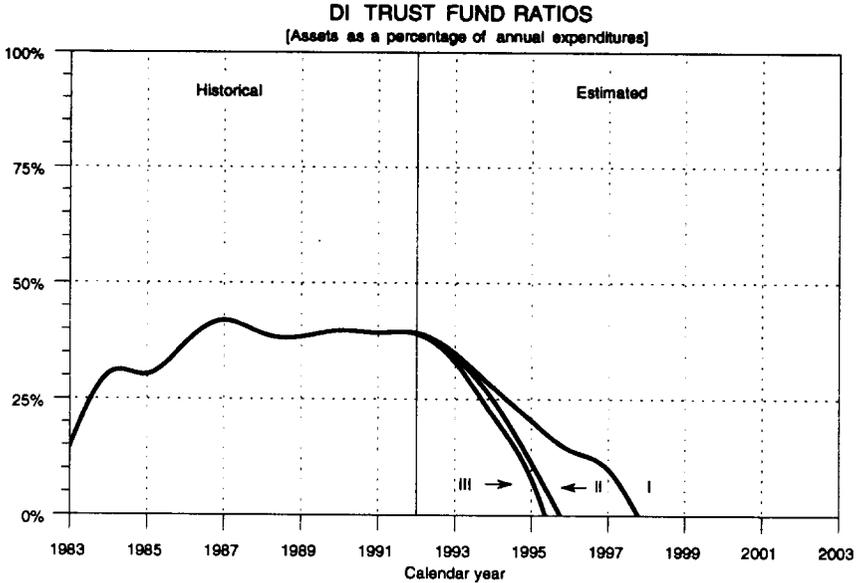
This test is applied on the basis of the intermediate (alternative II) estimates. Failure to meet this test by a trust fund is an indication that solvency of the program over the next 10 years is in question and that action is needed to improve the short-range financial adequacy of the program.

Based on the alternative II assumptions, the assets of the OASI Trust Fund exceed 100 percent of annual expenditures at the beginning of 1993 and would remain well above the 100-percent level through the end of the year 2002. Consequently, the OASI Trust Fund satisfies the short-range test of financial adequacy. The estimates shown above also indicate that the test would be satisfied even under the adverse conditions assumed in alternative III.

2. DI Trust Fund

As shown in the following chart, at the beginning of 1993 DI assets represented only about 35 percent of annual DI expenditures. Under all three sets of assumptions, DI assets would decline steadily to the point of exhaustion within the next 2-4 years. In the absence of corrective legislation, the assets of the DI Trust Fund are expected to become insufficient to meet benefit payments on a timely basis in 1995. This result is projected under both the intermediate and pessimistic sets of assumptions (alternatives II and III). Based on the more favorable conditions assumed in alternative I, DI assets would decrease at a somewhat slower rate but the trust fund would still be exhausted late in 1997 without corrective legislation.

Overview



The unfavorable financial outlook for the DI program is primarily attributable to an increasing trend since 1982 in the proportion of workers who are awarded disability benefits and a decreasing trend since 1970 in the annual proportion of beneficiaries whose disability benefits terminate as a result of recovery, death, or attainment of age 65. In particular, the annual number of new disability awards has increased very rapidly in the last several years, from about 415,000 in 1988 to over 640,000 in 1992. During 1983 through 1988, the adverse financial consequences of these trends were largely offset by the favorable economic growth that was experienced during that period. The economy has slowed since then, however, with the result that growth in tax income has failed to keep pace with growth in benefits.

The DI estimates shown in this report represent a worsening of the program's financial outlook compared to the estimates shown in the 1992 Annual Report.¹ The change is primarily attributable to the very rapid increase in new benefit awards experienced in 1992. A range of 518,000 to 598,000 awards had been projected but the actual

¹ In the 1992 Trustees Report, the assets of the DI Trust Fund were projected under the intermediate assumptions to be depleted in 1997. The more pessimistic projections indicated depletion in 1995.

number proved to be significantly greater than even the pessimistic projection.

The unusually large increase in awards in 1992 is partly attributable to the continuing rapid increase in the number of workers applying for disability benefits and partly to a special administrative initiative adopted early in 1992. This initiative addressed the growing number of applications awaiting adjudication and authorized special expedited claims-processing procedures. These procedures, which had not been implemented at the time the 1992 Annual Report projections were prepared, have had the effect of accelerating disability determinations in cases where an allowance is expected, thereby causing a one-time increase in awards. This effect is expected to diminish as the backlogs are reduced and, in fact, benefit awards in the fourth quarter of 1992 and first quarter of 1993 have decreased significantly. Therefore, the disability incidence assumptions developed for this annual report have not been adjusted to reflect this administrative initiative.

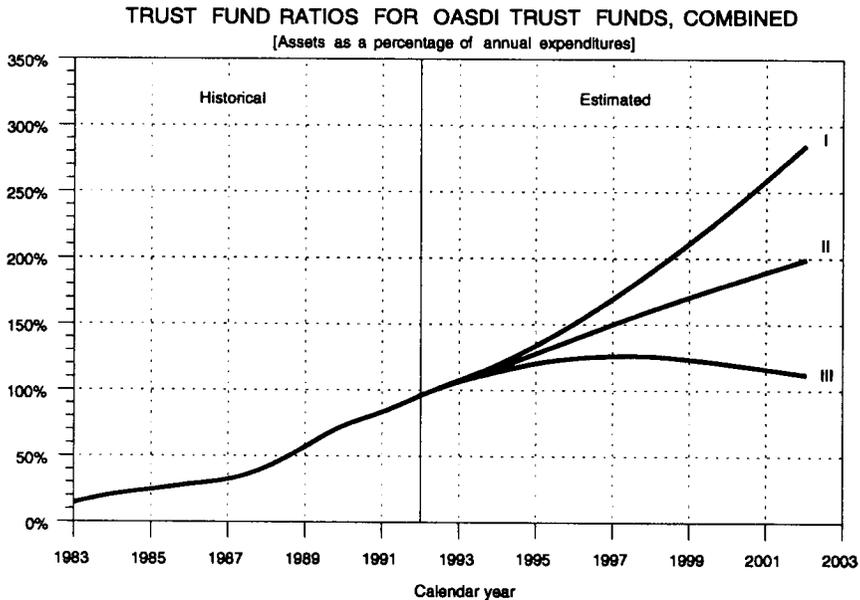
Because DI assets fail to reach the level of 100 percent of annual expenditures under the alternative II assumptions (and would, in fact, be depleted in the third year of the projection period), the DI Trust Fund does not satisfy the short-range test of financial adequacy. Because of the imminent depletion of the DI Trust Fund, it is imperative that corrective action be taken in the very near future to strengthen the financial position of the DI program. As noted in other sections of this report, the Board of Trustees has recommended such action to the Congress.

3. OASI and DI Trust Funds, Combined

The following chart summarizes the actual past and estimated future values of the trust fund ratio for the OASI and DI Trust Funds, combined. At the beginning of 1993, combined OASDI assets represented about 107 percent of combined expenditures for 1993. This ratio is projected to increase steadily during 1993-2002 under both the alternative I and II sets of assumptions, reaching projected levels of 284 percent and 199 percent, respectively, at the beginning of 2002. Based on the more pessimistic alternative III assumptions, the trust fund ratio for the combined funds would reach a maximum of

Overview

126 percent in 1997-98 and then decline gradually to 112 percent at the beginning of 2002.



Under the alternative II assumptions, the total assets of the OASI and DI Trust Funds at the beginning of 1993 exceed 100 percent of annual OASDI expenditures and would remain above that level throughout the short-range projection period. Therefore, the combined trust funds meet the requirements of the short-range test of financial adequacy. Under the less favorable conditions assumed in alternative III, the fund ratio for OASI and DI combined would still remain above the 100-percent level through 2002. Thus, the combined funds would pass the short-range test even under adverse conditions, although only by a narrow margin.

Short-Range Actuarial Estimates

These projections indicate that the overall financial position of the OASI and DI Trust Funds, on a combined basis, is satisfactory. Thus, the near-term depletion of the DI fund could be avoided through a reallocation of tax rates between OASI and DI without jeopardizing the short-range financial status of the OASI Trust Fund. Such a reallocation would, of course, worsen the long-range financial outlook for OASI. Because the OASI program is substantially larger than DI, however, the negative impact on OASI would be small whereas the improvement for DI would be considerable.

G. LONG-RANGE ACTUARIAL ESTIMATES

The long-range financial estimates provided in this section generally relate to the OASI and DI Trust Funds on a combined basis. However, as the OASI and DI programs are legally separate, a final assessment of the financial status of these funds must be provided on a separate basis, as is done later in this section. More detailed estimates for these trust funds, both separately and combined, can be found in section II.F.2 of this report.

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

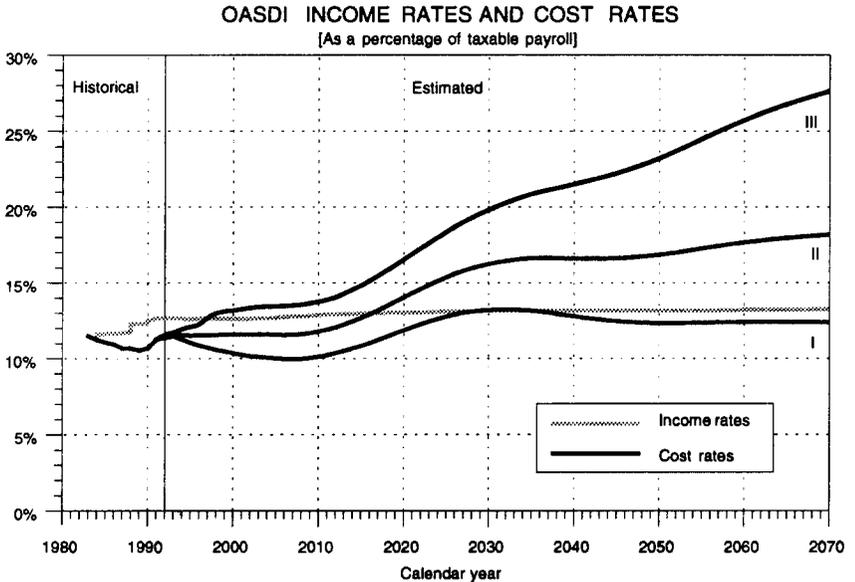
As mentioned previously, a number of different measures are useful in evaluating the financial status of the trust funds over the next 75 years. In addition to the actuarial balance and the trust fund ratio, emphasis is placed on the relationship between the levels of future tax income and future expenditures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

In addition to the presentation of long-range estimates, a specific test of the program’s long-range financial status is applied. This test is referred to as the test for long-range “close actuarial balance.”

1. Long-Range Income Rates, Cost Rates, and Annual Balances

The following chart compares past and estimated future OASDI income (from payroll taxes on covered earnings and income taxes on OASDI benefits) with OASDI expenditures (for benefits and administrative expenses). Included are historical data for the past 10 calendar years (1983-1992) and estimates for the 75-year long-range projection period (1993-2067) under the three alternative sets of assumptions. The chart includes values through 2070, as do many of the long-range tables in the Actuarial Analysis section, in which values are presented for every fifth year of the long-range period and

continue through 2070, thereby encompassing the full 75-year projection period which ends with 2067. These income and expenditure amounts are shown relative to the earnings in covered employment that are taxable under the OASDI program—referred to as “taxable payroll.” The ratio of tax income to taxable payroll is called the “income rate” and the ratio of expenditures to taxable payroll is the “cost rate.”



For calendar year 1993, the income rate for the OASDI program is estimated to be about 12.63 percent of taxable payroll. This rate is made up of the combined tax rate payable by employees and employers, 12.40 percent, plus the revenue from the income taxation of OASDI benefits, equivalent to 0.23 percent of taxable payroll. Since OASDI payroll tax rates are not scheduled to change in the future under present law, payroll tax income as a percentage of taxable payroll remains constant at about 12.40 percent. Income from the taxation of benefits will gradually increase, primarily because a greater proportion of beneficiaries will become subject to taxation. Thus, the income rate is projected to increase somewhat from its current level, reaching about 13.24 percent of taxable payroll by the year 2070. (The income rate projection shown in the chart is based on

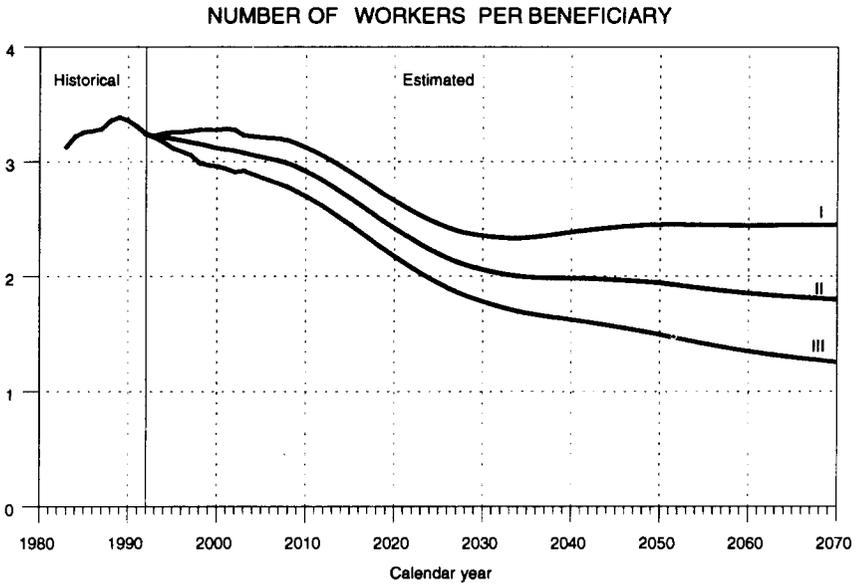
Overview

alternative II only; the projections under alternatives I and III are very similar.)

As the chart indicates, the pattern followed by the estimated cost rates is much different. Costs as a percentage of taxable payroll are estimated to be relatively stable for about 15 years and then to increase rapidly for about the next 25 years. Thereafter, cost rates are estimated to grow less rapidly (or to decline somewhat, in the case of alternative I). By the year 2070 the cost rate is estimated to have reached 12.39 percent, 18.18 percent, and 27.62 percent under alternatives I, II, and III, respectively.

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

The following chart shows the estimated number of covered workers per OASDI beneficiary. In 1992, there were about 3.2 workers for every beneficiary. As indicated, this ratio is expected to decline substantially in the future under all three sets of assumptions. Most of this decline will occur as the relatively large number of persons born during the "baby boom" (from the end of World War II through the mid-1960s) reaches retirement age and begins to receive benefits. At the same time, the relatively small number of persons born during the subsequent period of low fertility rates will comprise the labor force. Between 2030 and 2050, the number of workers per beneficiary is relatively stable as the "baby-boom" generation diminishes in size. After the year 2050, this ratio will continue to decline, but at a slower pace, reflecting the increasing numbers of beneficiaries due to assumed increases in life expectancy. By the end of the 75-year projection period, the number of workers per beneficiary is projected to decline to 2.4, 1.8, and 1.3 under alternatives I, II, and III, respectively.



The difference between the income rate and the cost rate in a given year is referred to as the “annual balance” for that year. The estimated pattern of the OASDI annual balance depends significantly on the economic and demographic conditions assumed to occur in the future. Income rates are estimated to exceed cost rates for the next 34, 24, and 4 years, under alternatives I, II, and III, respectively, resulting in positive annual balances. Thereafter, under the intermediate assumptions, the annual deficit would rise rapidly, reaching 2 percent of taxable payroll before 2025 and 4.94 percent in the year 2070. Under alternative I, a brief period of deficits (from 2027 through 2037) would be followed by a return to small positive balances lasting throughout the remainder of the projection period. Under adverse conditions, as assumed in alternative III, the deficit would grow very rapidly, to nearly 14 percent of taxable payroll by the year 2070.

2. Summarized Income Rates, Cost Rates, and Balances

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

Overview

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

	Income rate	Cost rate	Balance
Alternative I:			
1993-2017	12.68	10.53	2.15
2018-2042	12.97	12.76	.21
2043-2067	12.96	12.44	.52
Alternative II:			
1993-2017	12.72	11.87	.86
2018-2042	13.10	15.73	-2.63
2043-2067	13.18	17.28	-4.10
Alternative III:			
1993-2017	12.77	13.46	-.69
2018-2042	13.26	19.32	-6.07
2043-2067	13.50	24.39	-10.89

A significant surplus is shown under alternative II for the first subperiod only; thereafter, the program is projected to experience deficits, for the reasons outlined previously. Under the alternative I assumptions, summarized tax income would exceed summarized costs for each of the 25-year subperiods, but to a relatively smaller extent for the second subperiod. (The relatively less favorable outlook for the second subperiod occurs under alternative I because the “baby-boom” generation is retired essentially throughout this period, while the assumed higher ultimate fertility rates have not yet had their full effect on the estimated numbers of workers.) If the adverse conditions of alternative III are experienced, deficits would occur for all three subperiods.

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

Long-Range Actuarial Estimates

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

	Income rate	Cost rate	Balance
Alternative I: 1993-2067	13.07	11.91	1.16
Alternative II: 1993-2067	13.21	14.67	-1.46
Alternative III: 1993-2067	13.37	18.33	-4.96

The difference between the summarized income and cost rates is called the "actuarial balance" and ranges from a surplus of 1.16 percent of taxable payroll under the alternative I assumptions to a deficit of 4.96 percent under alternative III. Based on the intermediate assumptions, an actuarial deficit of 1.46 percent is projected, representing the difference between the summarized income rate of 13.21 percent and the corresponding cost rate of 14.67 percent.

The size of the actuarial balance for any period represents a measure of the program's financial adequacy for that period. The actuarial balance can be interpreted as the amount of change which, if made to the payroll tax rates scheduled under present law for each year in the period, would bring the program into exact actuarial balance. For example, if the 75-year actuarial deficit of 1.46 percent under alternative II were addressed by raising scheduled tax rates by 0.73 percent for employees and employers, each, and by 1.46 percent for the self employed, then OASDI assets at the beginning of 1993, together with income from payroll taxes, interest, and other sources, would be just sufficient to meet all expenditures for the period and leave a trust fund level at the end of the period equal to 100 percent of the following year's expenditures. Of course, there are numerous other changes to tax rates or benefit provisions which could also result in the elimination of the long-range actuarial deficit.

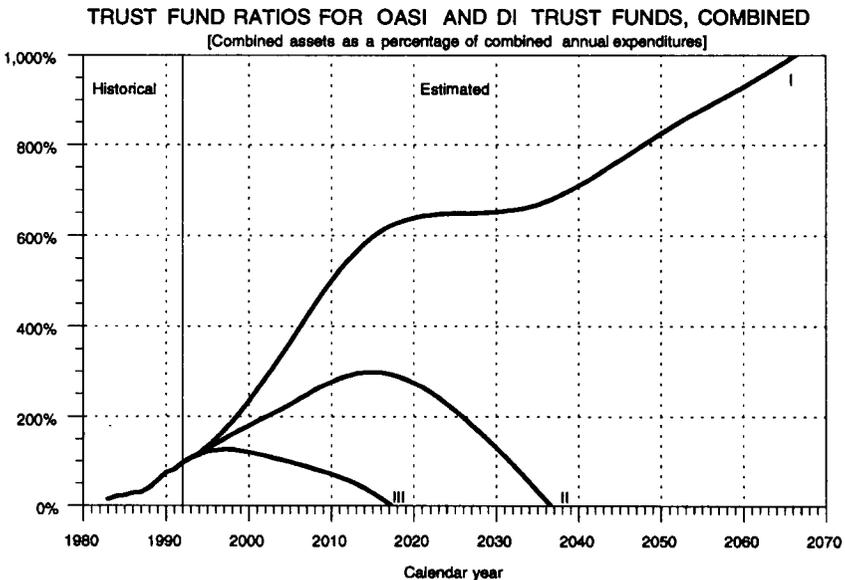
The 75-year actuarial balance is a convenient and widely used measure of the OASDI program's overall financial status. It is important to remember, however, that this summary measure reflects the combined effects of several very different periods, as previously described. Thus, while use of summary measures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

Overview

for a more complete understanding of the underlying year-by-year outlook.

3. Long-Range Projection of Trust Fund Assets

As noted previously, the total income of the OASDI program currently exceeds total expenditures by a substantial margin. As a result, the assets of the combined trust funds are increasing rapidly. Under the intermediate alternative II assumptions, this accumulation is expected to end about 16 years after the turn of the century, when the cost of the program increases with the retirement of the "baby-boom" generation. Thereafter, the tax rates scheduled in present law are expected to be insufficient to cover program expenditures and it will be necessary to use interest earnings and to redeem assets held by the combined OASI and DI Trust Funds to make up the shortfall. The resulting pattern of combined OASI and DI assets, expressed as a percentage of annual expenditures, is illustrated in the following chart under each of the three alternative sets of assumptions.



Long-Range Actuarial Estimates

At the beginning of 1993, the combined assets of the OASI and DI Trust Funds represented about 107 percent of combined annual expenditures estimated for the year. Under alternatives I and II, this ratio would increase rapidly for at least the next 20 years. Based on the intermediate assumptions, assets would accumulate to a peak of 298 percent of expenditures in 2015, and would then decline steadily until exhaustion in the year 2036. Based on the intermediate estimates in last year's report, the peak fund ratio for the combined funds was estimated to be 334 percent. Under alternative I, assets would level off temporarily at about 650 percent of annual expenditures before continuing to climb to the level of about 10 years' expenditures by the year 2070. The pattern under alternative III is similar to that under alternative II, except the maximum level is lower (126 percent) and is reached sooner (1997), and exhaustion occurs earlier (2017). For OASI and DI, separately, the peak fund ratios based on the intermediate assumptions are 432 and 35 percent, respectively, in this year's report and 434 percent and 41 percent, respectively, in last year's report. The following table summarizes these projections for OASI, DI, and the combined trust funds under the three sets of assumptions for the period 1993 through 2070.

	OASI	DI	Combined
Alternative I:			
Maximum trust fund ratio (percent)	1,218	35	1,044
Year attained	2070	1993	2070
Year of exhaustion	—	1997	—
Alternative II:			
Maximum trust fund ratio (percent)	432	35	298
Year attained	2016	1993	2015
Year of exhaustion	2044	1995	2036
Alternative III:			
Maximum trust fund ratio (percent)	194	34	126
Year attained	2011	1993	1997
Year of exhaustion	2025	1995	2017

As noted previously, trust fund assets are generally invested in special Treasury securities so that the excess of cash receipts over expenditures are borrowed from the trust funds by the general fund of the Treasury and used to help meet various Federal outlays. These securities are backed by the full faith and credit of the U. S. Government, as are all public-debt obligations of the U. S. Government. The assets of the trust funds can be redeemed for cash at any time if required to meet program expenditures. The redemption of a Treasury security held by a trust fund therefore requires that the Treasury transfer cash—obtained from another revenue source, such as

Overview

income taxes or borrowing from the public—to the trust fund. Thus, the investment operations of the trust funds result in various cash flows between the trust funds and the general fund of the Treasury.

The growth in OASDI assets, under alternative II, during the next 24 years will result in a substantial net cash flow from the trust funds of amounts borrowed by the general fund. Thereafter, this cash flow is expected to reverse; as trust fund securities are redeemed to meet benefit payments and other expenditures, revenue from the general fund of the Treasury will be drawn upon to provide the necessary cash. (It should be noted that DI Trust Fund assets are estimated to continue the decline that began in 1992 and to become exhausted in 1995, under alternative II. Thus, in the absence of corrective legislation, all the securities held by the DI Trust Fund would need to be redeemed during this period. However, this redemption would be more than offset by new securities issued to the OASI Trust Fund through this period.) The accumulation and subsequent redemption of substantial trust fund assets has important public policy and economic implications that go well beyond the operation of the OASDI program itself. Discussion of these broader issues is not within the scope of this report.

4. Test of Long-Range Close Actuarial Balance

In order to assess the actuarial status of the OASDI program, an explicit test is applied to the long-range financial estimates based on the intermediate (alternative II) projections. This test is referred to as the test of long-range “close actuarial balance.” The test of long-range close actuarial balance is characterized by the following:

- The test covers 66 periods of time. It is applied to successively longer valuation periods, beginning first with the 10-year period 1993-2002, then the 11-year period 1993-2003, the 12-year period 1993-2004, and so on, until reaching the overall 75-year period 1993-2067.
- For each of these periods, an actuarial balance is calculated, in the same way as described previously for the 75-year period (including the value of assets available at the beginning of the period, and requiring an ending fund level of 100 percent of annual expenditures).
- For each period, the actuarial balance is compared to the sum-

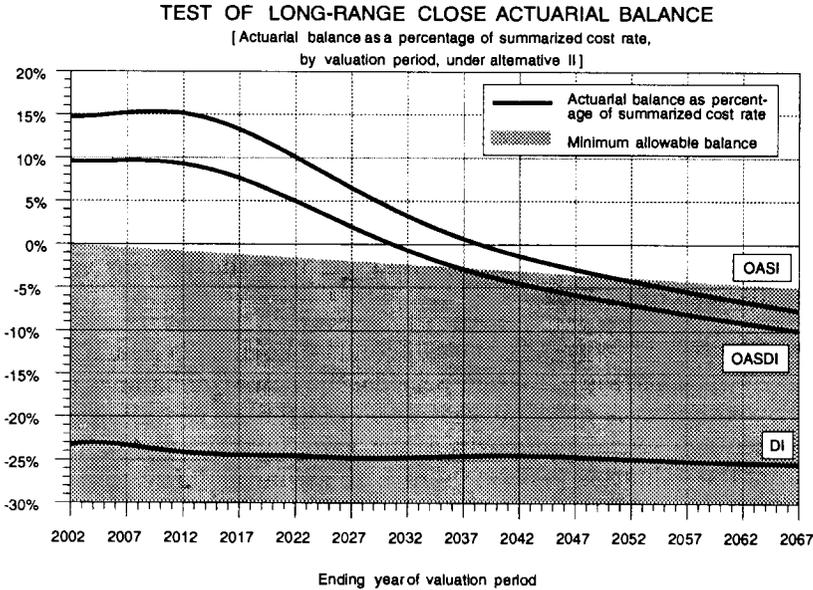
marized cost rate for that period. If the balance is a deficit, it must not exceed a specified percentage of the corresponding cost rate.

The allowable tolerance for deficits over various time periods is designed to reflect the increasing uncertainty associated with longer projections. For the entire 75-year valuation period (1993-2067), the allowable tolerance is 5 percent. For the earlier, shorter valuation periods, the allowable margin is reduced uniformly from 5 percent, reaching zero for the 10-year valuation period (1993-2002).

- The test of long-range close actuarial balance is met if for each of the separate valuation periods, the actuarial balance is either positive or is a deficit that is no more than the allowable percentage of the summarized cost rate. In other words, if in any of the valuation periods there is an actuarial deficit that exceeds the allowable margin, then the test is not met.

The following chart illustrates the test of long-range close actuarial balance for the OASDI program, and for OASI and DI separately. For each valuation period, the actuarial balance is shown as a percentage of the corresponding cost rate for that period. The shaded area of the chart represents the unacceptable range for actuarial deficits. The test is not met if any part of the line representing the actuarial balance for the various valuation periods lies in the shaded area.

Overview



As can be seen, the actuarial deficits for the OASDI program (as a percentage of the summarized cost rates) exceed the allowable margins for all valuation periods ending in 2037 and later. Over the entire 75-year period, the deficit represents 9.96 percent of the 75-year cost rate, as compared to the allowable margin of 5 percent. Thus, although the OASDI program satisfies the short-range test of financial adequacy (as discussed earlier in this section), it fails to meet the test of long-range close actuarial balance.

The situation is similar for the OASI program considered separately. The OASI balances are slightly higher than for OASDI but fail to remain within the permitted tolerance for all periods ending in 2051 and later. Therefore, as was the case for OASDI, the OASI program meets the short-range test but is not in long-range close actuarial balance.

For the DI program, the balances are deficits that substantially exceed the allowable margins in every valuation period. Thus, the DI program does not meet the test of long-range close actuarial balance, in addition to the fact that it does not satisfy the short-range test of financial adequacy (as described earlier in this section).

H. CONCLUSION

Over the next 10 years, the OASI Trust Fund is expected to grow rapidly from a current level in excess of 100 percent of annual outgo to more than 2.5 times annual outgo by the year 2002. As a result, the OASI Trust Fund passes the short-range test of financial adequacy by a wide margin. However, the DI Trust Fund is not adequately financed. Outgo from the DI Trust Fund exceeded income in 1992, and outgo is expected to continue to surpass income until the fund is exhausted in 1995, 2 years earlier than the year of exhaustion that was projected in the 1992 Annual Report.

The OASI and DI Trust Funds, if combined, would be adequately financed over the next 10 years, and for many years thereafter. At the beginning of 1993, the combined assets of the trust funds represented about 107 percent of combined expenditures for 1993. The combined funds are projected to continue to grow during the next 10 years, and for many years thereafter, under alternatives I and II. However, while the assets of the combined funds, in nominal dollars, continue to grow under alternative III for the next 15 years, 1993 through 2007, the trust fund ratio of assets to annual expenditures begins to decline in 1998.

Although the combined trust funds are well financed over the next 10 years and are expected to continue growing, in nominal dollars, for about the next 3 decades under the intermediate assumptions, the OASDI program is not in close actuarial balance over the next 75 years, based on these assumptions. The estimates indicate that the combined trust funds would be sufficient to enable the timely payment of benefits for about the next 43 years. Relative to annual expenditures, the combined trust funds would continue to grow during the next 2 decades, reaching a peak of about 3 times annual expenditures. Considering each fund separately, the OASI Trust Fund would have sufficient funds for the next 51 years, but, as noted above, the DI Trust Fund would be exhausted in 1995, underscoring the need for corrective legislation. On the basis of the more pessimistic assumptions in alternative III, the combined funds would be sufficient to enable timely payment of benefits for about the next 24 years. The DI fund by itself, however, would be exhausted early in 1995. Based on the more optimistic assumptions of alternative I, the combined funds would continue to grow throughout the next 75 years, and they would be sufficient to enable timely payment of benefits

Overview

during all of the long-range period. However, even under the optimistic assumptions, the DI fund would be exhausted as early as 1997 without corrective legislation.

For each of the next 24 years, OASDI income from payroll taxes and income taxes on benefits is expected to exceed total expenditures based on the intermediate assumptions. Starting about 15 to 20 years from now, however, OASDI costs as a percentage of taxable payroll are projected to begin increasing rapidly as the “baby-boom” generation reaches retirement age. In contrast, the program’s income from payroll taxes and income taxes on benefits will represent a relatively level percentage of taxable payroll.

Therefore, under the intermediate assumptions, the OASDI cost rate is projected to exceed the income rate from 2017 through the end of the projection period, with the shortfall reaching 4.81 percent of taxable payroll by 2067, the end of the 75-year projection period. Based on the less favorable conditions assumed in alternative III, the crossover point would be reached in about 1997, and the shortfall would grow eventually to 13.46 percent of payroll by 2067. With more favorable conditions, such as the alternative I assumptions, the cost rate would exceed the income rate only briefly (2027 through 2037); after 2037, the income rate would exceed the cost rate, reaching a positive balance of 0.57 percent of payroll by the end of the 75-year period.

Although, under the intermediate assumptions, the OASDI annual balances become negative after the first 24 years, the availability of interest earnings, in addition to tax revenues, results in projected trust fund growth (in dollars) that would continue for another 8 years. Because expenditures are estimated to increase at a faster rate than assets, however, OASDI assets would decline relative to annual disbursements, from about 3.0 times to about 2.3 times annual expenditures, during the same time period.

The actuarial balance of the OASDI program as a whole over the next 75 years is a deficit of 1.46 percent of taxable payroll, based on the intermediate assumptions. Because of a number of offsetting changes, this deficit is the same as the deficit shown in the 1992 Annual Report. The deficit represents about 10 percent of the estimated cost rate over the next 75 years, and is therefore larger than the maximum 5-percent level allowed over that period by the test

for close actuarial balance. Furthermore, beginning with the 1993-2037 period, and for all successively longer periods through the full 75-year period, the actuarial balances are deficits that are larger than the maximum levels allowed for close actuarial balance. Thus, the OASDI program is not in close actuarial balance.

Each trust fund, separately, is also out of close actuarial balance. On the basis of the intermediate assumptions, the OASI Trust Fund has an actuarial deficit of 0.97 percent of taxable payroll for the full 75-year valuation period, representing 7.6 percent of the OASI long-range cost rate. The DI Trust Fund's actuarial deficit of 0.49 percent of taxable payroll is much larger relative to the DI long-range cost rate—representing 25 percent of the cost rate.

When the 1992 Annual Report was released in early April of last year, the Board of Trustees made a separate report to the Congress on the unfavorable financial status of the DI Trust Fund, as required under section 709 of the Social Security Act. In December 1992, following a careful analysis of the DI program, the Board sent a letter to the Congress recommending a reallocation of tax rates between the OASI and DI Trust Funds to remedy the estimated financial shortfall in the DI fund in the next few years. Based on the estimates in this Annual Report, the Board is sending a separate letter to the Congress recommending a specific reallocation of the tax rates. Because of the imminent depletion of the DI Trust Fund, the Board recommends prompt enactment of the tax-rate reallocation.

In view of the lack of close actuarial balance in the OASDI program over the next 75 years, extensive study should continue on possible ways of addressing the long-range deficits of the program.

II. ACTUARIAL ANALYSIS

**A. SOCIAL SECURITY AMENDMENTS SINCE
THE 1992 REPORT**

Since the 1992 Annual Report was transmitted to the Congress on April 2, 1992, there have been no legislative changes enacted that would have a significant effect on the the financial status of the OASDI program.

B. DESCRIPTION OF THE TRUST FUNDS

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

The primary receipts of these two funds are amounts appropriated to each of them under permanent authority on the basis of contributions payable by workers, their employers, and individuals with self-employment income, in work covered by the OASDI program. All employees, and their employers, in covered employment are required to pay contributions with respect to their wages. Employees, and their employers, are also required to pay contributions with respect to cash tips if their 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 making the required employer contributions on the wages of covered Federal employees, the Federal Government also pays amounts equivalent to the employer and employee contributions that would be paid on deemed wage credits attributable to military service performed after 1956 if such wage credits were covered wages.

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

The monthly benefit amount to which an individual (or his or her spouse and children) may become entitled under the OASDI program is based on the individual's taxable earnings during his or her lifetime. In computing benefits for almost all persons who first become

Actuarial Analysis

eligible to receive benefits in 1979 or later, the earnings in each year are indexed to take account of increases in average wage levels.

The contribution, or tax, rates applicable in each calendar year and the allocation of the rates between the OASI and DI Trust Funds are shown in table II.B.1.

TABLE II.B.1.—CONTRIBUTION AND BENEFIT BASE AND CONTRIBUTION RATES

Calendar years	Contribution and benefit base	Contribution rates (percent)					
		Employees and employers, each			Self-employed		
		OASDI	OASI	DI	OASDI	OASI	DI
1937-49	\$3,000	1.000	1.000	—	—	—	—
1950	3,000	1.500	1.500	—	—	—	—
1951-53	3,600	1.500	1.500	—	2.2500	2.2500	—
1954	3,600	2.000	2.000	—	3.0000	3.0000	—
1955-56	4,200	2.000	2.000	—	3.0000	3.0000	—
1957-58	4,200	2.250	2.000	0.250	3.3750	3.0000	0.3750
1959	4,800	2.500	2.250	.250	3.7500	3.3750	.3750
1960-61	4,800	3.000	2.750	.250	4.5000	4.1250	.3750
1962	4,800	3.125	2.875	.250	4.7000	4.3250	.3750
1963-65	4,800	3.625	3.375	.250	5.4000	5.0250	.3750
1966	6,600	3.850	3.500	.350	5.8000	5.2750	.5250
1967	6,600	3.900	3.550	.350	5.9000	5.3750	.5250
1968	7,800	3.800	3.325	.475	5.8000	5.0875	.7125
1969	7,800	4.200	3.725	.475	6.3000	5.5875	.7125
1970	7,800	4.200	3.650	.550	6.3000	5.4750	.8250
1971	7,800	4.600	4.050	.550	6.9000	6.0750	.8250
1972	9,000	4.600	4.050	.550	6.9000	6.0750	.8250
1973	10,800	4.850	4.300	.550	7.0000	6.2050	.7950
1974	13,200	4.950	4.375	.575	7.0000	6.1850	.8150
1975	14,100	4.950	4.375	.575	7.0000	6.1850	.8150
1976	15,300	4.950	4.375	.575	7.0000	6.1850	.8150
1977	16,500	4.950	4.375	.575	7.0000	6.1850	.8150
1978	17,700	5.050	4.275	.775	7.1000	6.0100	1.0900
1979	22,900	5.080	4.330	.750	7.0500	6.0100	1.0400
1980	25,900	5.080	4.520	.560	7.0500	6.2725	.7775
1981	29,700	5.350	4.700	.650	8.0000	7.0250	.9750
1982	32,400	5.400	4.575	.825	8.0500	6.8125	1.2375
1983	35,700	5.400	4.775	.625	8.0500	7.1125	.9375
1984 ¹	37,800	5.700	5.200	.500	11.4000	10.4000	1.0000
1985 ¹	39,600	5.700	5.200	.500	11.4000	10.4000	1.0000
1986 ¹	42,000	5.700	5.200	.500	11.4000	10.4000	1.0000
1987 ¹	43,800	5.700	5.200	.500	11.4000	10.4000	1.0000
1988 ¹	45,000	6.060	5.530	.530	12.1200	11.0600	1.0600
1989 ¹	48,000	6.060	5.530	.530	12.1200	11.0600	1.0600
1990	51,300	6.200	5.600	.600	12.4000	11.2000	1.2000
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
Rates scheduled in present law:							
1994-99	(2)	6.200	5.600	.600	12.4000	11.2000	1.2000
2000 and later	(2)	6.200	5.490	.710	12.4000	10.9800	1.4200

¹In 1984 only, an immediate credit of 0.3 percent of taxable wages was allowed against the OASDI contributions paid by employees, resulting 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 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 contribution rate is then applied to net earnings after this deduction, but subject to the base.

²Subject to automatic adjustment.

Description of the Trust Funds

For 1994 and later, the rates shown in table II.B.1 are those scheduled in present law. 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 bases are also shown in table II.B.1. (The total contribution rates for the OASDI and Hospital Insurance (HI) programs combined, and for each program separately, are shown in appendix A, table III.A.1. The maximum annual amount taxable under the HI program, as well as the contribution and benefit bases for OASDI, are shown in table II.E.2.)

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.

From May 1983 through November 1990, amounts representing the estimated total collections of OASDI contributions for each month were credited to the trust funds on the first day of the month. Payments from the trust funds were made periodically to the general fund as reimbursement for the interest costs attributable to these advance transfers. Since December 1990, advance tax transfers have not been made. The "Omnibus Budget Reconciliation Act of 1990" amended the law in effect since 1983 to provide that such advance transfers would be used only if the trust funds drop to such a low level that advance transfers are needed in order to pay benefits.

Beginning in 1984, a portion (not more than one-half for any individual) of OASDI benefits is subject to Federal income taxation under certain circumstances. The proceeds from this taxation of benefits are credited to the trust funds in advance, on an estimated basis, at the beginning of each calendar quarter, with no reimburse-

Actuarial Analysis

ment to the general fund for interest costs attributable to the advance transfers. 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. (A special provision applies to benefits paid to non-resident aliens. A flat-rate tax, usually 15 percent, is withheld from the benefits before they are paid and, therefore, remains in the trust funds.)

Another source of income to the trust funds is interest received on investments held by the trust funds. That portion of each trust fund which, in the judgment of the Managing Trustee, is not required to meet current expenditures for benefits and administration is invested, on a daily basis, primarily in interest-bearing obligations of the U.S. Government (including special public-debt obligations described below). Investments may also be made in obligations guaranteed as to both principal and interest by the United States, or in 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. Thus, all of the investments held by the trust funds are backed by the full faith and credit of the U.S. Government.

The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the trust funds. The Act provides that these obligations shall bear interest at a rate equal to the average market yield (computed on the basis of market quotations as of the end of the calendar month next preceding the date of such issue) on all marketable interest-bearing obligations of the United States then forming a part of the public debt which are not due or callable until after the expiration of 4 years from the end of such calendar month. These special issues are redeemable at all times at par value and thus bear no risk with respect to changes in interest rates (i.e., principal price fluctuations).

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 made by the Secretary of Health and Human Services; (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 major 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 Department of Health and Human Services and by the Department of the Treasury in administering the OASDI program and the provisions of the Internal Revenue Code relating to the collection of contributions. Such administrative expenses include expenditures for construction, rental and lease, or purchase of office buildings and related facilities for the Social Security Administration. The Social Security Act does not permit expenditures from the OASI and DI Trust Funds for any purpose not related to the payment of benefits or administrative costs for the OASDI program.

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

The net worth of facilities and other fixed capital assets is not carried in the statements of the operations of the trust funds presented in this report. This is because the value of fixed capital assets does not represent funds available for the payment of benefits or administrative expenditures, and therefore is not considered in assessing the

Actuarial Analysis

actuarial status of the trust funds.

C. SUMMARY OF THE OPERATIONS OF THE OLD-AGE AND SURVIVORS INSURANCE AND DISABILITY INSURANCE TRUST FUNDS, FISCAL YEAR 1992

1. Old-Age and Survivors Insurance Trust Fund

A statement of the income and disbursements of the Federal Old-Age and Survivors Insurance Trust Fund in fiscal year 1992, and of the assets of the fund at the beginning and end of the fiscal year, is presented in table II.C.1.

During fiscal year 1992, total receipts amounted to \$307,102 million, and total disbursements were \$256,239 million. The assets of the OASI Trust Fund thus increased by \$50,862 million during the year, to a total of \$306,280 million on September 30, 1992.

Included in total receipts during fiscal year 1992 were \$278,856 million representing payroll tax contributions appropriated to the fund. Another \$327 million was received from the general fund of the Treasury representing payment for the taxes that would have been paid on estimated deemed wage credits for military service in 1992 if such credits had been considered to be covered wages. (Included in this payment are adjustments for revised estimates of deemed wage credits in prior years.) As an offset to gross contributions, \$678 million was transferred from the trust fund 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 wages in excess of the contribution and benefit base.

Net payroll tax contributions thus amounted to \$278,506 million, an increase of 2.8 percent over the amount in the preceding fiscal year. This level of growth in contribution income resulted primarily from the effects of increased earnings and the increases in the contribution and benefit base that became effective on January 1 of each year 1991 and 1992. (Table II.B.1 in the preceding section shows the tax rates and contribution and benefit bases in effect for these years.)

Income from the taxation of benefits amounted to \$6,019 million, of which nearly 99 percent represented amounts credited to the trust fund in advance, on an estimated basis, together with adjustments to 1990 transfers to account for actual experience. The remaining 1 percent of the total income from taxation of benefits represented

Actuarial Analysis

amounts withheld from the benefits paid to non-resident aliens.

Special payments are made to uninsured persons who either attained age 72 before 1968, or who attained age 72 after 1967 and had 3 quarters of coverage for each year after 1966 and before the year of attainment of age 72. The costs associated with providing such payments to persons having fewer than 3 quarters of coverage are reimbursable from the general fund of the Treasury. Accordingly, a reimbursement of \$19 million was transferred to the OASI Trust Fund in fiscal year 1992, as required by section 228 of the Social Security Act. The reimbursement reflected the costs of payments made in fiscal year 1990.

The OASI Trust Fund was credited with net interest totaling \$22,557 million which consisted of (1) interest earned on the investments of the trust fund, plus (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, less (3) interest arising from the revised allocation of administrative expenses among the trust funds.

The remaining \$111,791 of receipts consisted of gifts received under the provisions authorizing the deposit of money gifts or bequests in the trust funds.

Of the \$256,239 million in total disbursements, \$251,268 million was for net benefit payments, excluding collected overpayments of \$751 million and the reimbursement of \$57 million for unnegotiated benefit checks. The amount of net benefit payments in fiscal year 1992 represents an increase of 6.4 percent over the corresponding amount in fiscal year 1991. This increase was due primarily to (1) the automatic cost-of-living benefit increases of 5.4 percent and 3.7 percent which became effective for December 1990 and December 1991 respectively, under the automatic-adjustment provisions in section 215(i) of the Social Security Act, (2) an increase in the total number of beneficiaries, and (3) an increase in the average benefit amount resulting from the rising level of earnings.

**TABLE II.C.1.—STATEMENT OF OPERATIONS OF THE OASI TRUST FUND
DURING FISCAL YEAR 1992**

[In thousands]

Total assets, September 30, 1991		\$255,417,459
Receipts:		
Contributions:		
Employment taxes	\$278,856,290	
Payments from general fund of the Treasury representing employee-employer contributions on deemed wage cred- its for military service.....	327,402	
Gross contributions.....	279,183,692	
Less payment to the general fund of the Treasury for con- tributions subject to refund	677,600	
Net contributions.....		278,506,092
Income from taxation of benefit payments:		
Withheld from benefit payments to non-resident aliens ...	78,401	
All other, not subject to withholding.....	5,941,000	
Total income from taxation of benefits		6,019,401
Reimbursement from general fund of the Treasury for costs of payments to uninsured persons who attained age 72 before 1968.....		18,868
Investment income and interest adjustments:		
Interest on investments	22,559,398	
Interest on transfers to the general fund account for the Supplemental Security Income program due to adjustment in allocation of administrative expenses	1,230	
Gross investment income and interest adjustments.....	22,560,628	
Less interest on interfund transfers due to adjustment in allocation of administrative expenses	3,416	
Net investment income and interest adjustments.....		22,557,212
Gifts		112
Total receipts		307,101,685
Disbursements:		
Benefit payments:		
Aggregate benefit payments	252,076,141	
Less collected overpayments	751,171	
Less reimbursement from general fund for unnegotiated checks	56,808	
Net benefit payments.....		251,268,163
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account".....		3,148,381
Administrative expenses:		
Department of Health and Human Services	1,638,356	
Department of the Treasury	185,725	
Gross administrative expenses.....	1,824,081	
Less reimbursements from general fund of the Treasury for costs of furnishing information on deferred vested pension benefits	885	
Less receipts from sales of supplies, materials, etc.....	354	
Net administrative expenses.....		1,822,842
Total disbursements		256,239,386
Net increase in assets		50,862,299
Total assets, September 30, 1992		306,279,759

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

As described in the preceding section, certain provisions of the Railroad Retirement Act coordinate the Railroad Retirement and OASDI programs and govern the financial interchanges arising from the

Actuarial Analysis

allocation of costs between the two programs. Under those provisions, the Railroad Retirement Board and the Secretary of Health and Human Services determined that a transfer of \$3,148 million to the Social Security Equivalent Benefit Account from the OASI Trust Fund was required in June 1992.

The remaining \$1,823 million of disbursements from the OASI Trust Fund represented net administrative expenses. The expenses of administering the OASDI and Medicare programs are allocated and charged directly to each of the various trust funds, through which those programs are financed, on the basis of provisional estimates. Similarly, the expenses of administering the Supplemental Security Income program are also allocated and charged directly to the general fund of the Treasury on a provisional basis. Periodically, as actual experience develops and is analyzed, adjustments to the allocations of administrative expenses for prior periods are effected by interfund transfers and transfers between the OASI Trust Fund and the general fund account for the Supplemental Security Income program, with appropriate interest adjustments.

Section 1131 of the Social Security Act authorizes annual reimbursements from the general fund of the Treasury to the OASI Trust Fund for additional administrative expenses incurred as a result of furnishing information on deferred vested benefits to pension plan participants, as required by the Employee Retirement Income Security Act of 1974 (Public Law 93-406). The reimbursement in fiscal year 1992 amounted to \$885,208.

The assets of the OASI Trust Fund at the end of fiscal year 1992 totaled \$306,280 million, consisting of \$306,524 million in U.S. Government obligations and, as an offset, an extension of credit amounting to \$244 million against securities to be redeemed within the following few days. Table II.C.2 shows the total assets of the fund and their distribution at the end of each fiscal year 1991 and 1992.

Fiscal Year 1992 Operations

TABLE II.C.2.—ASSETS OF THE OASI TRUST FUND, BY TYPE, INTEREST RATE, AND YEAR OF MATURITY, AT END OF FISCAL YEAR, 1991 AND 1992

	September 30, 1991	September 30, 1992
Obligations sold only to the trust funds (special issues):		
Certificates of indebtedness:		
6.625 percent, 1993	—	\$15,355,491,000.00
6.750 percent, 1993	—	2,562,614,000.00
7.875 percent, 1992	\$18,955,442,000.00	—
Bonds:		
7.375 percent, 1994-2000	—	25,028,311,000.00
7.375 percent, 2001-06	—	21,452,844,000.00
7.375 percent, 2007	—	20,199,060,000.00
8.125 percent, 1993	3,611,348,000.00	—
8.125 percent, 1994	3,611,348,000.00	3,611,348,000.00
8.125 percent, 1995-2000	21,668,094,000.00	21,668,094,000.00
8.125 percent, 2001-05	18,056,740,000.00	18,056,740,000.00
8.125 percent, 2006	16,623,586,000.00	16,623,586,000.00
8.375 percent, 1993	313,295,000.00	—
8.375 percent, 1994-2000	2,193,065,000.00	2,193,065,000.00
8.375 percent, 2001	2,370,396,000.00	2,370,396,000.00
8.625 percent, 1993	1,301,731,000.00	—
8.625 percent, 1994-2001	10,413,848,000.00	10,413,848,000.00
8.625 percent, 2002	3,672,127,000.00	3,672,127,000.00
8.75 percent, 1993	7,099,803,000.00	1,521,662,000.00
8.75 percent, 1994	7,099,803,000.00	7,099,803,000.00
8.75 percent, 1995-2000	42,598,812,000.00	42,598,812,000.00
8.75 percent, 2001-03	21,299,409,000.00	21,299,409,000.00
8.75 percent, 2004-05	26,024,476,000.00	26,024,476,000.00
9.25 percent, 1992	1,814,353,000.00	—
9.25 percent, 1993-2000	17,922,472,000.00	17,922,472,000.00
9.25 percent, 2001-02	4,480,616,000.00	4,480,616,000.00
9.25 percent, 2003	5,912,435,000.00	5,912,435,000.00
10.375 percent, 1992	565,186,000.00	—
10.375 percent, 1993-99	3,956,302,000.00	3,956,302,000.00
10.375 percent, 2000	2,057,101,000.00	2,057,101,000.00
10.750 percent, 1992	1,022,231,000.00	—
10.750 percent, 1993-96	4,088,924,000.00	4,088,924,000.00
10.750 percent, 1997-98	2,044,460,000.00	2,044,460,000.00
13.750 percent, 1992	469,684,000.00	—
13.750 percent, 1993-96	1,878,736,000.00	1,878,736,000.00
13.750 percent, 1997-98	939,370,000.00	939,370,000.00
13.750 percent, 1999	1,491,915,000.00	1,491,915,000.00
Total investments	255,557,108,000.00	306,524,017,000.00
Undisbursed balances ¹	-139,648,942.88	-244,258,486.83
Total assets	255,417,459,057.12	306,279,758,513.17

¹ Negative figures represented extensions of credit against securities to be redeemed within the following few days.

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

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

Actuarial Analysis

acquired only when special issues of either type mature on June 30. The amount of bonds acquired on June 30 is equal to the amount of special issues maturing, less amounts required to meet expenditures on that day.

The effective annual rate of interest earned by the assets of the OASI Trust Fund during calendar year 1992 was 8.7 percent, as compared to 9.1 percent earned during calendar year 1991. The interest rate on special issues purchased by the trust fund in June 1992 was 7.375 percent, payable semiannually. Special-issue bonds with a total par value of \$70,256 million were purchased in June 1992.

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. Accordingly, the amounts and maturity dates of the special-issue bonds purchased on June 30, 1992, were selected in such a way that the maturity dates of the total portfolio of special issues were spread evenly over the 15-year period 1993-2007.

2. Disability Insurance Trust Fund

A statement of the income and disbursements of the Federal Disability Insurance Trust Fund during fiscal year 1992, and of the assets of the fund at the beginning and end of the fiscal year, is presented in table II.C.3.

During fiscal year 1992, total receipts amounted to \$31,168 million, and total disbursements were \$31,285 million. The assets of the trust fund thus decreased by \$116 million during the year, to a total of \$12,881 million on September 30, 1992.

Included in total receipts were \$29,909 million representing payroll tax contributions appropriated to the fund and \$35 million in payments from the general fund of the Treasury representing taxes that would have been paid on estimated deemed wage credits for military service in 1992 if such credits had been considered to be covered wages. As an offset, \$73 million was transferred from the trust fund 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 wages in excess of the contribution and benefit base.

Net contributions amounted to \$29,871 million, an increase of 3.2 percent from the amount in the preceding fiscal year. This increase is primarily 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. Income from the taxation of benefit payments amounted to \$218 million in fiscal year 1992.

Net interest totaling \$1,080 million consisted of interest on the investments of the fund and interest on amounts of interfund transfers.

Of the \$31,285 million in total disbursements, \$30,350 million was for net benefit payments, excluding collected overpayments of \$132 million and a reimbursement of \$12 million for unnegotiated benefit checks. This represents an increase of 12.9 percent over the corresponding amount of benefit payments in fiscal year 1991. This increase is due primarily to the same factors that resulted in the net increase in benefit payments from the OASI Trust Fund. In the case of DI, however, the number of persons qualifying for disabled worker benefits continued to increase at a rapid rate in fiscal year 1992. See section II.F.1. for a detailed discussion of this rapid growth.

Actuarial Analysis

**TABLE II.C.3.—STATEMENT OF OPERATIONS OF THE DI TRUST FUND
DURING FISCAL YEAR 1992**

[In thousands]

Total assets, September 30, 1991		<u><u>\$12,997,362</u></u>
Receipts:		
Contributions:		
Employment taxes	\$29,909,007	
Payments from general fund of the Treasury representing employee-employer contributions on deemed wage credits for military service	<u>35,062</u>	
Gross contributions	29,944,069	
Less payment to the general fund of the Treasury for contributions subject to refund	<u>73,400</u>	
Net contributions		29,870,669
Income from taxation of benefit payments:		
Withheld from benefit payments to non-resident aliens	3,833	
All other, not subject to withholding	<u>214,000</u>	
Total income from taxation of benefits		217,833
Investment income and interest adjustments:		
Interest on investments	1,079,135	
Interest on interfund transfers due to adjustment in allocation of administrative expenses	<u>818</u>	
Total investment income and interest adjustments		1,079,953
Gifts		<u>2</u>
Total receipts		<u><u>31,168,457</u></u>
Disbursements:		
Benefit payments:		
Gross benefit payments	30,493,730	
Less collected overpayments	131,842	
Less net reimbursement from general fund for unnegotiated checks	<u>12,093</u>	
Net benefit payments		30,349,795
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		57,990
Payment for costs of vocational rehabilitation services for disabled beneficiaries		32,241
Administrative expenses:		
Department of Health and Human Services	817,637	
Department of the Treasury	25,576	
Demonstration projects and experiments	<u>1,612</u>	
Gross administrative expenses	844,826	
Less receipts from sales of supplies, materials, etc.	<u>144</u>	
Net administrative expenses		844,682
Total disbursements		<u><u>31,284,708</u></u>
Net increase in assets		<u><u>-116,251</u></u>
Total assets, September 30, 1992		<u><u>12,881,111</u></u>

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

Provisions governing the financial interchanges between the Railroad Retirement and OASDI programs are described in the preceding section. Under those provisions, \$58 million was transferred to the Social Security Equivalent Benefit Account from the DI Trust Fund in June 1992.

The remaining disbursements amounted to \$845 million for net ad-

Fiscal Year 1992 Operations

ministrative expenses (including \$2 million for demonstration projects and experiments to test the effect of alternative methods for assisting disabled beneficiaries' attempts to work), and \$32 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 such services is made only in those cases where the services contributed to the successful rehabilitation of the beneficiaries.

The assets of the DI Trust Fund at the end of fiscal year 1992 totaled \$12,881 million, consisting of \$12,918 million in U.S. Government obligations and, as an offset, an extension of credit amounting to \$36 million against securities to be redeemed within the following few days. Table II.C.4 shows the total assets of the fund and their distribution at the end of each fiscal year 1991 and 1992.

The effective annual rate of interest earned by the assets of the DI Trust Fund during calendar year 1992 was 8.9 percent, as compared to 9.2 percent earned during calendar 1991. The interest rate on public-debt obligations issued for purchase by the trust fund in June 1992 was 7.375 percent, payable semiannually. Special-issue bonds with a total par value of \$3,067 million were purchased in June 1992.

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

Actuarial Analysis

TABLE II.C.4.—ASSETS OF THE DI TRUST FUND, BY TYPE, INTEREST RATE, AND YEAR OF MATURITY, AT END OF FISCAL YEAR, 1991 AND 1992

	September 30, 1991	September 30, 1992
Investments in public-debt obligations:		
Public issues:		
Treasury bonds:		
3.5 percent 1998	\$5,000,000.00	\$5,000,000.00
4.125 percent, 1989-94	68,400,000.00	68,400,000.00
4.25 percent, 1987-92	80,800,000.00	—
7.5 percent, 1988-93	26,500,000.00	—
7.625 percent, 2002-07	10,000,000.00	10,000,000.00
8 percent, 1996-2001	26,000,000.00	26,000,000.00
8.25 percent, 2000-05	3,750,000.00	3,750,000.00
11.75 percent, 2010	30,250,000.00	30,250,000.00
Total investments in public issues at par value, as shown above	250,700,000.00	143,400,000.00
Unamortized premium or discount, net	-430,321.84	-371,924.42
Total investments in public issues at book value	250,269,678.16	143,028,075.58
Obligations sold only to the trust funds (special issues):		
Certificates of indebtedness:		
6.625 percent, 1993	—	1,500,689,000.00
7.875 percent, 1992	1,730,216,000.00	—
Bonds:		
7.375 percent, 1996-98	—	142,800,000.00
7.375 percent, 1999-2006	—	380,808,000.00
7.375 percent, 2007	—	916,460,000.00
8.125 percent, 1995	150,161,000.00	—
8.125 percent, 1996-98	450,483,000.00	450,483,000.00
8.125 percent, 1999-2000	300,320,000.00	300,320,000.00
8.125 percent, 2001-05	750,805,000.00	750,805,000.00
8.125 percent, 2006	868,859,000.00	868,859,000.00
8.375 percent, 1994	88,711,000.00	—
8.375 percent, 1995	109,613,000.00	—
8.375 percent, 1996-2000	1,008,835,000.00	1,008,835,000.00
8.375 percent, 2001	591,226,000.00	591,226,000.00
8.75 percent, 1994	466,750,000.00	—
8.75 percent, 1995	127,473,000.00	—
8.75 percent, 1996-2000	637,365,000.00	637,365,000.00
8.75 percent, 2001	127,472,000.00	127,472,000.00
8.75 percent, 2002-05	2,874,792,000.00	2,874,792,000.00
9.75 percent, 1994	142,336,000.00	—
9.75 percent, 1995	481,613,000.00	276,263,000.00
10.375 percent, 1996-98	304,512,000.00	304,512,000.00
10.375 percent, 1999	152,904,000.00	152,904,000.00
10.375 percent, 2000	389,459,000.00	389,459,000.00
10.75 percent 1996-98	863,865,000.00	863,865,000.00
13.75 percent, 1999	236,555,000.00	236,555,000.00
Total obligations sold only to the trust funds (special issues)	12,854,325,000.00	12,774,472,000.00
Total investments in public-debt obligations (book value ¹)	13,104,594,678.16	12,917,500,075.58
Undisbursed balances ²	-107,232,892.31	-36,389,147.24
Total assets (book value¹)	12,997,361,785.85	12,881,110,928.34

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

²Negative figures represented extensions of credit against securities to be redeemed within the following few days.

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

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

A statement of the operations of the income and disbursements of the OASI and DI Trust Funds, on a combined basis, is presented in table II.C.5. The entries in this table represent the sums of the corresponding values from tables II.C.1 and II.C.3. For a discussion of the nature of these income and expenditure transactions, reference should be made to the preceding two subsections covering OASI and DI separately.

TABLE II.C.5.—STATEMENT OF OPERATIONS OF THE OASI AND DI TRUST FUNDS, COMBINED, DURING FISCAL YEAR 1992

[In thousands]

Total assets, September 30, 1991		<u><u>\$268,414,821</u></u>
Receipts:		
Contributions:		
Employment taxes	\$308,765,297	
Payments from general fund of the Treasury representing employee-employer contributions on deemed wage credits for military service	362,464	
Gross contributions	<u>309,127,761</u>	
Less payment to the general fund of the Treasury for contributions subject to refund	751,000	
Net contributions		308,376,761
Income from taxation of benefit payments:		
Withheld from benefit payments to non-resident aliens ...	82,234	
All other, not subject to withholding	<u>6,155,000</u>	
Total income from taxation of benefits		6,237,234
Reimbursement from general fund of the Treasury for costs of payments to uninsured persons who attained age 72 before 1968		18,868
Investment income and interest adjustments:		
Interest on investments	23,638,534	
Interest on transfers to the general fund account for the Supplemental Security Income program due to adjustment in allocation of administrative expenses	1,230	
Gross investment income and interest adjustments	<u>23,639,763</u>	
Less interest on interfund transfers due to adjustment in allocation of administrative expenses	2,598	
Net investment income and interest adjustments		23,637,165
Gifts		<u>114</u>
Total receipts		<u><u>338,270,143</u></u>

Actuarial Analysis

TABLE II.C.5.—STATEMENT OF OPERATIONS OF THE OASI AND DI TRUST FUNDS, COMBINED, DURING FISCAL YEAR 1992 (Cont'd)

[In thousands]

Disbursements:		
Benefit payments:		
Aggregate benefit payments	\$282,569,872	
Less collected overpayments	883,013	
Less reimbursement from general fund for unnegotiated checks	68,900	
Net benefit payments		\$281,617,959
Transfer to the Railroad Retirement "Social Security Equivalent Benefit Account"		3,206,371
Payment for costs of vocational rehabilitation services for disabled beneficiaries		32,241
Administrative expenses:		
Department of Health and Human Services	2,455,993	
Department of the Treasury	211,301	
Disability demonstration projects and experiments	1,612	
Gross administrative expenses	2,668,907	
Less reimbursements from general fund of the Treasury for costs of furnishing information on deferred vested pension benefits	885	
Less receipts from sales of supplies, materials, etc.	498	
Net administrative expenses		2,667,524
Total disbursements		287,524,094
Net increase in assets		50,746,049
Total assets, September 30, 1992		319,160,869

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

Table II.C.6 compares past estimates of contributions and benefit payments for fiscal year 1992, as shown in the 1988-92 Annual Reports, with the corresponding actual amounts in 1992. The estimates shown are the ones based on the alternative II-B set of assumptions from the 1988-90 reports and the alternative II assumptions for the 1991-92 reports.

A number of factors can contribute to differences between estimates and subsequent actual amounts, including actual values for key economic, demographic, and other variables that differ from assumed levels. In addition, amendments to the Social Security Act can cause actual taxes or benefits to vary from earlier estimates. The comparisons in table II.C.6 indicate that actual OASI and DI tax contributions in fiscal year 1992 were lower, generally, than prior estimates (due primarily to the recession that began late in 1990). Estimates of OASI benefit payments were generally close to actual payments in 1992. The actual amount of DI benefit payments in 1992, however, was significantly above prior estimates, due to faster-than-expected growth in the number of disabled workers, part of which was the result of a one-time acceleration of disability benefit

Fiscal Year 1992 Operations

awards caused by special administrative actions that were taken to process probable disability awards on an expedited basis.

TABLE II.C.6.—COMPARISON OF ACTUAL AND ESTIMATED OPERATIONS OF THE OASI AND DI TRUST FUNDS, FISCAL YEAR 1992

[Amounts in millions]

	Net contributions ¹		Benefit payments ²	
	Amount	Variance from actual (percent)	Amount	Variance from actual (percent)
OASI Trust Fund:				
Estimate in 1988 report	\$290,463	4.3	\$247,936	-1.3
Estimate in 1989 report	298,604	7.2	250,276	-4
Estimate in 1990 report	296,345	6.4	250,413	-3
Estimate in 1991 report	286,979	3.0	252,699	.6
Estimate in 1992 report	274,826	-1.3	251,104	-1
Actual amount	278,506	—	251,268	—
DI Trust Fund:				
Estimate in 1988 report	31,113	4.2	26,738	-12.0
Estimate in 1989 report	31,986	7.1	27,147	-10.6
Estimate in 1990 report	31,746	6.3	27,583	-9.2
Estimate in 1991 report	30,622	2.5	28,789	-5.2
Estimate in 1992 report	29,473	-1.3	29,694	-2.3
Actual amount	29,871	—	30,382	—
OASI and DI Trust Funds, combined:				
Estimate in 1988 report	321,576	4.3	274,674	-2.5
Estimate in 1989 report	330,590	7.2	277,423	-1.5
Estimate in 1990 report	328,091	6.4	277,996	-1.3
Estimate in 1991 report	317,601	3.0	281,488	-1
Estimate in 1992 report	304,299	-1.3	280,798	-3
Actual amount	308,377	—	281,650	—

¹"Actual" contributions for 1992 reflect adjustments for prior fiscal years (see preceding section for description of these adjustments). "Estimated" contributions also include such adjustments, but on an estimated basis.

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

At the end of fiscal year 1992, about 41.3 million persons were receiving monthly benefits under the OASDI program. Of these persons, about 36.5 million and 4.8 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 1.5 percent and 8.2 percent, respectively, during the fiscal year. The estimated distribution of benefit payments in fiscal years 1991 and 1992, by type of beneficiary, is shown in table II.C.7 for each trust fund separately.

Actuarial Analysis

TABLE II.C.7.—ESTIMATED DISTRIBUTION OF BENEFIT PAYMENTS FROM THE OASI AND DI TRUST FUNDS, BY TYPE OF BENEFICIARY OR PAYMENT, FISCAL YEARS 1991 AND 1992

[Amounts in millions]

	Fiscal year 1991		Fiscal year 1992	
	Amount	Percentage of total	Amount	Percentage of total
Total OASDI benefit payments	\$263,073	100.0	\$281,618	100.0
OASI benefit payments	236,195	89.8	251,268	89.2
DI benefit payments	26,878	10.2	30,350	10.8
OASI benefit payments, total	236,195	100.0	251,268	100.0
Monthly benefits:				
Retired workers and auxiliaries	182,270	77.2	193,854	77.2
Retired workers	166,147	70.3	176,782	70.4
Wives and husbands	14,740	6.2	15,602	6.2
Children	1,383	.6	1,470	.6
Survivors of deceased workers	53,710	22.7	57,199	22.8
Aged widows and widowers	42,749	18.1	45,669	18.2
Disabled widows and widowers ..	540	.2	657	.3
Parents	38	(1)	37	(1)
Children	8,906	3.8	9,320	3.7
Widowed mothers and fathers caring for child beneficiaries	1,476	.6	1,515	.6
Uninsured persons generally aged 72 before 1968	13	(1)	9	(1)
Lump-sum death payments	202	.1	206	.1
DI benefit payments, total	26,878	100.0	30,350	100.0
Disabled workers	24,021	89.4	27,186	89.6
Wives and husbands	544	2.0	569	1.9
Children	2,314	8.6	2,594	8.5

¹ Less than 0.05 percent.

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

Net administrative expenses charged to the OASI and DI Trust Funds in fiscal year 1992 totaled \$2,668 million. This amount represented 0.9 percent of contribution income and 0.9 percent of expenditures for benefit payments. Corresponding percentages for each trust fund separately and for the OASDI program as a whole are shown in table II.C.8 for each of the last 5 years.

Fiscal Year 1992 Operations

TABLE II.C.8.—NET ADMINISTRATIVE EXPENSES AS A PERCENTAGE OF CONTRIBUTION INCOME AND OF BENEFIT PAYMENTS, BY TRUST FUND, FISCAL YEARS 1988-92

Fiscal year	OASI Trust Fund		DI Trust Fund		OASI and DI Trust Funds, combined	
	Contribution income	Benefit payments	Contribution income	Benefit payments	Contribution income	Benefit payments
1988.....	0.8	0.9	3.7	3.8	1.0	1.2
1989.....	.7	.8	3.2	3.3	.9	1.1
1990.....	.6	.7	2.6	3.0	.8	.9
1991.....	.6	.7	2.7	2.9	.8	1.0
1992.....	.7	.7	2.8	2.8	.9	.9

Tables II.C.2 and II.C.4, presented in the two preceding subsections, showed the assets of the OASI and DI Trust Funds at the end of fiscal years 1991 and 1992. The changes in the invested assets of the funds between those two dates are a result of the acquisition and disposition of securities during fiscal year 1992. Table II.C.9 presents these investment transactions for each trust fund separately and combined. All amounts shown in the table are at par value.

TABLE II.C.9.—INVESTMENT TRANSACTIONS OF THE OASI AND DI TRUST FUNDS IN FISCAL YEAR 1992

[In thousands]

	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Invested assets, September 30, 1991	\$255,557,108	\$13,105,025	\$268,662,133
Acquisitions:			
Special issues:			
Certificates of indebtedness	296,747,936	30,774,783	327,522,719
Bonds	70,255,688	3,066,935	73,322,623
Public issues:			
Treasury bonds	—	—	—
Total acquisitions	367,003,624	33,841,718	400,845,342
Dispositions:			
Special issues:			
Certificates of indebtedness	297,785,273	31,004,310	328,789,583
Bonds	18,251,442	2,917,261	21,168,703
Public issues:			
Treasury bonds	—	107,300	107,300
Total dispositions	316,036,715	34,028,871	350,065,586
Net increase in invested assets	50,966,909	-187,153	50,779,756
Invested assets, September 30, 1992	306,524,017	12,917,872	319,441,889

Note: All investments are shown at par value.

D. PRINCIPAL ECONOMIC AND DEMOGRAPHIC ASSUMPTIONS

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

Because precise prediction of these various factors is impossible, estimates are shown in this report on the basis of three sets of assumptions, designated as alternatives I, II, and III. The intermediate set, alternative II, represents the Board's best estimate of the future course of the population and the economy. In terms of the net effect on the status of the OASDI program, alternative I is the more optimistic, and alternative III is the more pessimistic of the plausible economic and demographic conditions.

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

Economic & Demographic Assumptions

1. Economic Assumptions

The principal economic assumptions for the three alternatives are summarized in table II.D.1.

**TABLE II.D.1.—SELECTED ECONOMIC ASSUMPTIONS BY ALTERNATIVE,
CALENDAR YEARS 1960-2070**

Calendar year	Average annual percentage change in—						Average annual percentage increase in labor force ⁶
	Real GDP ¹	Average annual wage in covered employment	Consumer Price Index ²	Real-wage differential ³ (percent)	Average annual interest rate ⁴ (percent)	Average annual unemployment rate ⁵ (percent)	
Historical data:							
1960-64	3.9	3.4	1.3	2.1	3.7	5.7	1.3
1965-69	4.4	5.4	3.4	2.0	5.2	3.8	2.1
1970-74	2.4	6.3	6.1	.2	6.7	5.4	2.3
1975	-8	6.7	9.1	-2.4	7.4	8.5	1.9
1976	4.9	8.7	5.7	3.0	7.1	7.7	2.4
1977	4.5	7.3	6.5	.8	7.1	7.1	2.9
1978	4.8	9.7	7.7	2.0	8.2	6.1	3.2
1979	2.5	9.8	11.4	-1.6	9.1	5.8	2.6
1980	-5	9.0	13.4	-4.4	11.0	7.1	1.9
1981	1.8	9.8	10.3	-5	13.3	7.6	1.6
1982	-2.2	6.5	6.0	.5	12.8	9.7	1.4
1983	3.9	5.1	3.0	2.1	11.0	9.6	1.2
1984	6.2	7.3	3.5	3.8	12.4	7.5	1.8
1985	3.2	4.3	3.5	.8	10.8	7.2	1.7
1986	2.9	5.1	1.6	3.5	8.0	7.0	2.0
1987	3.1	4.7	3.6	1.1	8.4	6.2	1.7
1988	3.9	4.7	4.0	.7	8.8	5.5	1.4
1989	2.5	7 4.3	4.8	-5	8.7	5.3	1.8
19908	7 4.8	5.2	-4	8.6	5.5	.7
1991	-1.2	7 3.0	4.0	-1.0	8.0	6.7	.4
Alternative I:							
1992	2.1	4.0	2.9	1.0	7.1	7.4	1.2
1993	3.8	4.2	2.8	1.5	6.3	6.8	.8
1994	3.9	4.8	2.8	2.0	5.8	6.2	1.6
1995	3.8	5.2	3.0	2.2	5.9	5.7	1.3
1996	3.5	4.9	3.0	1.9	6.0	5.4	1.2
1997	3.3	4.9	3.0	1.9	6.0	5.2	1.2
1998	3.1	4.8	3.0	1.8	6.0	5.0	1.2
1999	2.9	4.8	3.0	1.8	6.0	5.0	1.2
2000	2.9	4.9	3.0	1.9	6.0	4.9	1.1
2001	2.9	4.9	3.0	1.9	6.1	4.9	1.1
2002	2.9	5.0	3.0	2.0	6.1	4.9	1.0
2010	2.5	4.8	3.0	1.8	6.0	5.0	.7
2020&later	2.1	4.7	3.0	1.7	6.0	5.0	.4
Alternative II:							
1992	2.1	4.0	2.9	1.1	7.1	7.4	1.2
1993	3.1	3.7	3.0	.7	6.3	6.9	.7
1994	3.3	4.5	3.1	1.4	5.9	6.4	1.4
1995	2.9	4.6	3.2	1.4	5.9	6.1	1.1
1996	2.6	4.4	3.3	1.0	6.0	6.0	1.0
1997	2.4	4.5	3.5	1.0	6.0	5.9	1.0
1998	2.2	4.6	3.7	1.0	6.1	5.9	1.0
1999	2.2	5.0	3.9	1.1	6.3	6.0	1.0
2000	2.2	5.1	4.0	1.1	6.4	6.0	.9
2001	2.3	5.2	4.0	1.2	6.5	5.9	.9
2002	2.3	5.3	4.0	1.3	6.4	5.9	.9
2010	1.9	5.1	4.0	1.1	6.3	6.0	.6
2020&later	1.4	5.1	4.0	1.1	6.3	6.0	.1

TABLE II.D.1.—SELECTED ECONOMIC ASSUMPTIONS BY ALTERNATIVE, CALENDAR YEARS 1960-2070 (Cont.)

Calendar year	Average annual percentage change in—						Average annual percentage increase in labor force ⁶
	Real GDP ¹	Average annual wage in covered employment	Consumer Price Index ²	Real-wage differential ³ (percent)	Average annual interest rate ⁴ (percent)	Average annual unemployment rate ⁵ (percent)	
Alternative III:							
1992.....	2.0	4.0	2.9	1.1	7.1	7.4	1.2
1993.....	2.6	3.8	3.7	.0	6.4	7.0	.7
1994.....	.5	4.0	4.0	.1	6.3	7.0	1.3
1995.....	1.0	5.1	5.4	-.3	7.0	7.4	.7
1996.....	2.8	7.1	6.4	.7	7.7	6.9	.9
1997.....	-1.2	3.8	4.9	-1.2	7.9	7.4	.9
1998.....	1.0	4.9	5.0	.0	7.7	8.1	.6
1999.....	3.1	5.7	5.0	.7	7.0	7.5	.9
2000.....	2.6	5.5	5.0	.5	6.9	7.1	1.0
2001.....	2.0	5.6	5.0	.6	6.8	6.9	.9
2002.....	1.7	5.7	5.0	.7	6.7	6.9	.7
2010.....	1.4	5.6	5.0	.6	6.5	7.0	.5
2020&later...	8.8	5.6	5.0	.6	6.5	7.0	8.1

¹The real GDP (gross domestic product) is the value of total output of goods and services, expressed in 1987 dollars.

²The 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).

³The real-wage differential is the difference between the percentage increases, before rounding, in (1) the average annual wage in covered employment, and (2) the average annual Consumer Price Index.

⁴The 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.

⁵Through 2002, the rates shown are unadjusted civilian unemployment rates. After 2002, the rates are total rates (including military personnel), adjusted by age and sex based on the estimated total labor force on July 1, 1991.

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

⁷Preliminary.

⁸This value is for 2020. The annual percentage increase in labor force and real GDP is assumed to continue to change after 2020 for each alternative to reflect the dependence of labor force growth on the size and age-sex distribution of the population. The increases in real GDP for 2070 are 2.3, 1.3, and 0.3 percent for alternatives I, II, and III, respectively. The changes in total labor force for 2070 are 0.6, 0.0, and -0.5 percent for alternatives I, II, and III, respectively.

Alternatives I, II, and III present a range of generally consistent sets of economic assumptions which have been designed to encompass most of the possibilities that might be encountered. The intermediate set of assumptions—alternative II—represents the Trustees’ consensus expectation of continued moderate to relatively strong economic growth through 1995 and a return to moderate growth thereafter. Alternative I presents a more optimistic outlook, with a return to more robust economic growth beginning with the fourth quarter of 1992.

Alternative III is a relatively pessimistic forecast in which the economy experiences more modest growth during 1993 and then enters

Economic & Demographic Assumptions

a recession in the second quarter of 1994, which lasts through the remainder of that year. After a period of recovery lasting through the end of 1996, a second recession is assumed to occur beginning with the first quarter of 1997 and spanning 4 quarters. The total declines in real GDP for the two projected recessions in alternative III are slightly less than those of recent recessions; however, the ensuing recoveries are assumed to be substantially weaker than those experienced in the recent past. This scenario presents an assessment of the combined effects on the OASDI program of business cycles and generally weak economic growth. Economic cycles are not included in assumptions beyond the first 5 to 10 years of the projection period because inclusion of such cycles has little effect on the long-range estimates of financial status.

The period of sustained real economic growth, which began in 1982, ended with the recession that started with the third quarter of 1990. After a total decline in real GDP of 2.2 percent through the first quarter of 1991, and a three-quarter period of slow, but positive, growth following the recession, the return to steady economic growth which began in 1992 is assumed to continue through the end of the decade for alternatives I and II. Real growth is assumed to be stronger for alternative I than for alternative II. For alternative III, moderate growth and an increasing rate of price inflation are assumed through the first quarter of 1994. The first projected recession begins in the second quarter of 1994, lasts 3 quarters, and results in a total decline in real GDP of 1.7 percent. After 8 quarters of recovery, a second recession, with a total decline in real GDP of 3.0 percent, is assumed to begin in the first quarter of 1997, lasting through the end of that year. A three-year period of moderate economic recovery and stable rates of inflation is assumed through the year 2000. Thereafter, steady, but relatively slow, growth is assumed for alternative III.

After the year 2002, the projected rates of growth in real GDP, for all three alternatives, are determined by the assumed rates of growth in employment, average hours worked, and labor productivity.

Assumed values for the unemployment rates reflect the pattern of real GDP growth for each alternative. For alternatives I and II, the unemployment rate is assumed to move gradually toward its ultimate average level after 1992. For alternative III, the unemployment rate

Actuarial Analysis

is assumed to reach its ultimate average level after the recovery that is assumed to follow the second recession.

Unemployment rates through 2002 are in the most commonly cited form, the civilian rate, which describes the differences between aggregate civilian labor force and aggregate civilian employment. For years after 2002, however, total rates are presented. These include the military (which reduces the rate by about 0.1 percent relative to the civilian rate) and are age-sex adjusted to the 1991 labor force. Such total rates better represent the total population covered by the OASDI program and adjust for the changing age-sex distribution of the labor force, which can obscure the comparison of unemployment rates over different time periods.

For the intermediate alternative II projection, each of the other economic parameters is selected reflecting what the Trustees believe to be the most likely future course of the economy at the time of preparation of this report, consistent with the assumed pattern of real GDP growth. The average annual unemployment rate increased from 6.7 percent in 1991 to 7.4 percent in 1992, as a result of the recession and the ensuing period of slow growth. After 1992 the unemployment rate is assumed to decline gradually, based on alternative II, reaching 5.9 percent in 2002, which is equivalent to the assumed ultimate total unemployment rate (age-sex adjusted to the 1991 labor force) of 6.0 percent. Thereafter, the adjusted total unemployment rate remains at about 6.0 percent while the non-age-sex-adjusted rate declines slightly, reflecting the changing age-sex distribution of the labor force.

The annual rate of increase in the average wage in covered employment is assumed to decline from the estimated 4.8-percent increase for 1990 to 3.0 percent for 1991, reflecting the economic recession. After 1991, the average wage grows at about 4 percent for 2 years, by about 4.5 percent for another 5 years, and then by 5.0 to 5.3 percent per year through 2002. After 2002, the average covered wage growth rate remains at the ultimate assumed rate of 5.1 percent. The annual rate of increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) declined from 4.0 percent in 1991 to 2.9 percent in 1992. Thereafter, it is assumed to increase steadily to the ultimate rate of 4.0 percent by the year 2000. The CPI-W (hereinafter denoted as "CPI") is used to determine automatic cost-of-living benefit increases under the OASDI program.

The real-wage differential (i.e., the difference between the annual rates of change in the average wage in covered employment and in the CPI) is assumed to be 1.0 percent in 1992, following differentials of -0.4 percent and -1.0 percent in 1990 and 1991, respectively. After 1992, the real-wage differential is projected to be generally between 1.0 and 1.4 percent through the year 2002, thereafter remaining at the ultimate assumed differential of 1.1 percent.

The average annual interest rate is assumed to decline from 7.1 percent in 1992, reaching its ultimate value of 6.3 percent by 2003. The annual rate of growth in total labor force increased from 0.4 percent in 1991 to 1.2 percent in 1992. After 1992 the labor force is projected to increase at about 1.0 percent per year, on the average, through 2002 reflecting the slower growth in the working-age population than was experienced through the 1980s and early 1990s.

For alternatives I and III, respectively, values for each of the economic parameters are selected which, in general, result in a more optimistic and a more pessimistic future financial status of the program.

2. Demographic Assumptions

The principal demographic assumptions for the three alternatives are shown in table II.D.2.

For the intermediate alternative II projection, the assumed ultimate total fertility rate of 1.9 children per woman is attained in 2017 after a gradual decline from the estimated 1991 level of 2.06 children per woman. The age-sex-adjusted death rate is assumed to decrease gradually during the entire projection period, with a total reduction of 35 percent from the 1992 level by 2067. Life expectancies at birth in 2070 are 77.5 years for men and 84.0 years for women, compared to 71.8 and 79.0 years, respectively, in 1991. Life expectancies at age 65 in 2070 are projected to be 18.3 years for men and 22.4 years for women, compared to 15.0 and 19.1 years, respectively, in 1991. The projected death rates reflect the effects of assumed cases of Acquired Immunodeficiency Syndrome (AIDS), using projections through 1992 prepared by the Centers for Disease Control and Prevention (CDC) as a starting point. Total net immigration is assumed to rise over the next several years reaching an ultimate level of 850,000 persons per year by the year 2000. The ultimate assumed level of net annual

Actuarial Analysis

immigration is the combination of 650,000 net legal immigrants per year and 200,000 net other-than-legal immigrants per year.

For alternative I, the total fertility rate is assumed to rise to an ultimate level of 2.2 children per woman by 2017. The age-sex-adjusted death rate is assumed to decrease more slowly than for alternative II, with the total reduction from the 1992 level being 16 percent by 2067. Life expectancies at birth in 2070 are 74.8 years for men and 80.9 years for women, while at age 65 they are 15.9 and 19.7 years, respectively. Total net immigration is ultimately assumed to be 1,100,000 persons per year. The assumed level of net annual immigration is the combination of 750,000 net legal immigrants per year and 350,000 net other-than-legal immigrants per year.

For alternative III, the total fertility rate is assumed to decrease to an ultimate level of 1.6 by 2017. The age-sex-adjusted death rate is assumed to decrease more rapidly than for alternative II, with the total reduction from the 1992 level being 53 percent by 2067. Life expectancies at birth in 2070 are 80.9 years for men and 88.0 years for women, while at age 65 they are 21.4 and 25.6 years, respectively. Total net immigration is ultimately assumed to be 700,000 persons per year, the combination of 600,000 net legal immigrants per year and 100,000 net other-than-legal immigrants per year.

The ultimate fertility rates used in this report are the same as those used in the 1992 Annual Report. Assumed improvements in mortality rates over the next 75 years are very similar to those used in the 1992 report. The Bureau of the Census revised its long-range assumptions on fertility and mortality rates before the assumptions for this report were adopted. The Bureau revised its assumed fertility rate from 1.8 children per woman to 2.1 children per woman, which is significantly higher than the intermediate assumption used in this report. Revised rates of improvement in mortality rates, made by the Bureau of the Census, are also significantly higher than the rates of improvement assumed in this report under the intermediate assumptions. After considering these changes, it was decided to retain the 1992 Annual Report's ultimate assumptions of fertility and improvement in mortality for this year's report. Nevertheless, these assumptions will continue to be reviewed in preparation for the future annual reports, beginning with next year's report.

Economic & Demographic Assumptions

**TABLE II.D.2.—SELECTED DEMOGRAPHIC ASSUMPTIONS BY
ALTERNATIVE, CALENDAR YEARS 1940-2070**

Calendar year	Total fertility rate ¹	Age-sex-adjusted death rate ² (per 100,000)	Life expectancy ³			
			At birth		At age 65	
			Male	Female	Male	Female
Historical data:						
1940	2.23	1,532.8	61.4	65.7	11.9	13.4
1945	2.42	1,366.4	62.9	68.4	12.6	14.4
1950	3.03	1,225.3	65.6	71.1	12.8	15.1
1955	3.50	1,134.2	66.7	72.8	13.1	15.6
1960	3.61	1,128.6	66.7	73.2	12.9	15.9
1965	2.88	1,103.6	66.8	73.8	12.9	16.3
1970	2.43	1,041.8	67.1	74.9	13.1	17.1
1975	1.77	934.0	68.7	76.6	13.7	18.0
1976	1.74	923.2	69.1	76.8	13.7	18.1
1977	1.79	898.0	69.4	77.2	13.9	18.3
1978	1.76	892.4	69.6	77.2	13.9	18.3
1979	1.82	864.2	70.0	77.7	14.2	18.6
1980	1.85	878.1	69.9	77.5	14.0	18.4
1981	1.83	853.8	70.4	77.8	14.2	18.6
1982	1.83	828.5	70.8	78.2	14.5	18.8
1983	1.81	836.1	70.9	78.1	14.3	18.6
1984	1.80	829.6	71.1	78.2	14.4	18.7
1985	1.84	831.8	71.1	78.2	14.4	18.6
1986	1.84	824.8	71.1	78.3	14.5	18.7
1987	1.87	816.1	71.3	78.4	14.6	18.7
1988	1.93	824.5	71.2	78.3	14.6	18.7
1989	2.01	804.1	71.5	78.6	14.8	18.9
1990 ⁴	2.08	806.9	71.1	78.8	14.9	18.9
1991 ⁴	2.06	783.4	71.8	79.0	15.0	19.1

TABLE II.D.2.—SELECTED DEMOGRAPHIC ASSUMPTIONS BY ALTERNATIVE, CALENDAR YEARS 1940-2070 (Cont.)

Calendar year	Total fertility rate ¹	Age-sex-adjusted death rate ² (per 100,000)	Life expectancy ³			
			At birth		At age 65	
			Male	Female	Male	Female
Alternative I:						
1995	2.09	781.9	72.2	78.9	14.9	18.9
2000	2.12	773.5	72.5	79.0	15.0	18.8
2005	2.15	766.9	72.8	79.1	15.0	18.7
2010	2.17	758.0	73.0	79.3	15.0	18.7
2015	2.19	748.4	73.2	79.4	15.1	18.8
2020	2.20	739.1	73.3	79.6	15.2	18.9
2025	2.20	730.0	73.5	79.7	15.3	19.0
2030	2.20	721.3	73.7	79.9	15.3	19.1
2035	2.20	712.8	73.8	80.0	15.4	19.2
2040	2.20	704.6	74.0	80.1	15.5	19.2
2045	2.20	696.6	74.1	80.3	15.6	19.3
2050	2.20	688.9	74.2	80.4	15.6	19.4
2055	2.20	681.3	74.4	80.5	15.7	19.5
2060	2.20	674.0	74.5	80.6	15.8	19.6
2065	2.20	666.9	74.7	80.7	15.9	19.7
2070	2.20	660.0	74.8	80.9	15.9	19.7
Alternative II:						
1995	2.05	771.5	72.0	79.2	15.1	19.1
2000	2.02	740.2	72.6	79.7	15.4	19.4
2005	1.98	709.6	73.5	80.2	15.6	19.5
2010	1.95	686.2	74.0	80.5	15.8	19.7
2015	1.91	666.6	74.3	80.8	16.0	19.9
2020	1.90	648.2	74.7	81.2	16.3	20.2
2025	1.90	630.7	75.0	81.5	16.5	20.4
2030	1.90	614.1	75.3	81.8	16.7	20.6
2035	1.90	598.2	75.6	82.1	16.9	20.9
2040	1.90	583.1	75.9	82.4	17.1	21.1
2045	1.90	568.6	76.2	82.6	17.3	21.3
2050	1.90	554.8	76.5	82.9	17.5	21.5
2055	1.90	541.6	76.7	83.2	17.7	21.7
2060	1.90	529.0	77.0	83.5	17.9	22.0
2065	1.90	517.0	77.3	83.7	18.1	22.2
2070	1.90	505.4	77.5	84.0	18.3	22.4
Alternative III:						
1995	1.99	756.3	72.0	79.5	15.4	19.4
2000	1.91	720.6	72.3	80.2	15.8	19.9
2005	1.81	673.1	73.4	81.0	16.2	20.3
2010	1.72	622.8	74.9	81.7	16.6	20.7
2015	1.63	587.4	75.7	82.4	17.0	21.1
2020	1.60	559.2	76.2	82.9	17.4	21.5
2025	1.60	534.3	76.6	83.4	17.8	22.0
2030	1.60	510.9	77.1	84.0	18.2	22.4
2035	1.60	488.8	77.5	84.5	18.6	22.8
2040	1.60	467.6	78.0	85.0	19.0	23.2
2045	1.60	447.5	78.5	85.5	19.4	23.6
2050	1.60	428.3	79.0	86.0	19.8	24.0
2055	1.60	410.1	79.5	86.5	20.2	24.4
2060	1.60	392.9	79.9	87.0	20.6	24.8
2065	1.60	376.6	80.4	87.5	21.0	25.2
2070	1.60	361.1	80.9	88.0	21.4	25.6

¹The 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 child-bearing period. The ultimate total fertility rate is assumed to be reached in 2017.

²The age-sex-adjusted death rate is the crude rate that would occur in the enumerated total population as of April 1, 1980, if that population were to experience the death rates by age and sex observed in, or assumed for, the selected year.

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

⁴Estimated.

Economic & Demographic Assumptions

The values assumed after the early years for both the economic and the demographic factors are intended to represent the average experience and are not intended to be exact predictions of year-by-year values. Actual future values will likely exhibit fluctuations or cyclical patterns, as in the past.

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

The ultimate values presented in tables II.D.1 and II.D.2 reflect little change from the ultimate values used for the 1992 Annual Report. Different levels, as opposed to rates of change, in several factors reflect, primarily, different starting levels based on additional data collected since the last report. The ultimate annual rate of net legal immigration is increased by 100,000 over the level used in last year's report, based on a reassessment of the impact of recent legislation by the Immigration and Naturalization Service. The effect on the financing of the OASDI program of this and other changes is discussed in section II.F.2.

E. AUTOMATIC ADJUSTMENTS

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

In this section, values are shown for the program amounts that are subject to automatic adjustment, from the time that such adjustments became effective through 2002. Projected values for future years are based on the economic assumptions described in the preceding section of this report. Appendix F, in addition to providing the most recent determinations of program amounts under the automatic adjustment provisions, also provides a more complete description of such amounts.

Under the automatic-adjustment provisions affecting cost-of-living increases, benefits generally are increased once a year. These provisions were originally enacted in 1972 and first became effective with the benefit increase effective for June 1975. The 1983 amendments changed the effective month to December for years after 1982. For persons becoming eligible for benefits in 1979 and later, the increases generally begin with the year in which the worker reaches age 62, or becomes disabled or dies, if earlier. An automatic cost-of-living benefit increase of 3.0 percent, effective for December 1992, was announced in October 1992, as described in Appendix F. The automatic cost-of-living benefit increase for any year is normally based on the change in the CPI from the third quarter of the previous year to the third quarter of the current year.¹

Under section 215(b)(3) of the Social Security Act, the average amount of total wages for each year after 1950 is used to index the earnings of most workers first becoming eligible for benefits in 1979 or later. This procedure converts a worker's past earnings to approximately their equivalent values near the time of the worker's retirement or other eligibility, and these indexed values are used to calculate the worker's benefit. The average amount of total wages for each year,

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

generally referred to as the “average wage index,” is also used to adjust most of the program amounts that are subject to the automatic-adjustment provisions. Table II.E.1 shows the average wage index as determined for each year 1951 through 1991.

TABLE II.E.1.—AVERAGE WAGE INDEX, CALENDAR YEARS 1951-91

Year	Amount	Year	Amount	Year	Amount
1951	\$2,799.16	1966	\$4,938.36	1981	\$13,773.10
1952	2,973.32	1967	5,213.44	1982	14,531.34
1953	3,139.44	1968	5,571.76	1983	15,239.24
1954	3,155.64	1969	5,893.76	1984	16,135.07
1955	3,301.44	1970	6,186.24	1985	16,822.51
1956	3,532.36	1971	6,497.08	1986	17,321.82
1957	3,641.72	1972	7,133.80	1987	18,426.51
1958	3,673.80	1973	7,580.16	1988	19,334.04
1959	3,855.80	1974	8,030.76	1989	20,099.55
1960	4,007.12	1975	8,630.92	1990	21,027.98
1961	4,086.76	1976	9,226.48	1991	21,811.60
1962	4,291.40	1977	9,779.44		
1963	4,396.64	1978	10,556.03		
1964	4,576.32	1979	11,479.46		
1965	4,658.72	1980	12,513.46		

The law provides for an automatic increase in the OASDI program’s contribution and benefit base and the Hospital Insurance program’s contribution base, based on the increase in the average wage index, for the year following a year in which an automatic benefit increase became effective. As described in Appendix F, the contribution and benefit base and the Hospital Insurance contribution base for 1993 were determined to be \$57,600 and \$135,000, respectively.

Table II.E.2 shows historical automatic cost-of-living benefit increases for the years 1975-92 and assumed increases through 2002. The table also shows historical year-to-year percentage increases in the average wage index for 1975-91 and assumed increases through 2002. As noted above, the OASDI contribution and benefit base and the Hospital Insurance contribution base are adjusted on the basis of such wage increases. The historical and projected amounts for these two bases are also shown in table II.E.2. The projections are shown under the three alternative sets of economic assumptions described in the previous section.

Actuarial Analysis

TABLE II.E.2.—COST-OF-LIVING BENEFIT INCREASES, AVERAGE WAGE INDEX INCREASES, OASDI CONTRIBUTION AND BENEFIT BASES, AND HOSPITAL INSURANCE CONTRIBUTION BASES, 1975-2002

Calendar year	OASDI benefit increases ¹ (percent)	Increase in average wage index ² (percent)	OASDI contribution and benefit base ³	Hospital Insurance contribution base ⁴
Historical data:				
1975	8.0	7.5	\$14,100	\$14,100
1976	6.4	6.9	15,300	15,300
1977	5.9	6.0	16,500	16,500
1978	6.5	7.9	17,700	17,700
1979	9.9	8.7	⁵ 22,900	⁵ 22,900
1980	14.3	9.0	⁵ 25,900	⁵ 25,900
1981	11.2	10.1	⁵ 29,700	⁵ 29,700
1982	7.4	5.5	32,400	32,400
1983	3.5	4.9	35,700	35,700
1984	3.5	5.9	37,800	37,800
1985	3.1	4.3	39,600	39,600
1986	1.3	3.0	42,000	42,000
1987	4.2	6.4	43,800	43,800
1988	4.0	4.9	45,000	45,000
1989	4.7	4.0	48,000	48,000
1990	5.4	4.6	51,300	51,300
1991	3.7	3.7	53,400	125,000
1992	3.0	⁶ 3.8	55,500	130,200
Alternative I:				
1993	2.7	4.1	⁷ 57,600	⁷ 135,000
1994	2.8	4.6	60,000	140,400
1995	3.0	5.0	62,400	146,100
1996	3.0	4.8	65,400	152,700
1997	3.0	4.8	68,700	160,200
1998	3.0	4.7	72,000	167,700
1999	3.0	4.6	75,300	175,800
2000	3.0	4.7	78,900	183,900
2001	3.0	4.8	82,500	192,300
2002	3.0	4.9	86,400	201,300
Alternative II:				
1993	3.0	3.5	⁷ 57,600	⁷ 135,000
1994	3.1	4.3	59,700	140,100
1995	3.3	4.4	61,800	145,200
1996	3.4	4.2	64,500	151,500
1997	3.5	4.4	67,500	158,100
1998	3.7	4.5	70,200	164,700
1999	3.9	4.8	73,200	171,900
2000	4.0	5.0	76,500	179,700
2001	4.0	5.0	80,100	188,400
2002	4.0	5.2	84,000	197,700

TABLE II.E.2.—COST-OF-LIVING BENEFIT INCREASES, AVERAGE WAGE INDEX INCREASES, OASDI CONTRIBUTION AND BENEFIT BASES, AND HOSPITAL INSURANCE CONTRIBUTION BASES, 1975-2002 (Cont.)

Calendar year	OASDI benefit increases ¹ (percent)	Increase in average wage index ² (percent)	OASDI contribution and benefit base ³	Hospital insurance contribution base ⁴
Alternative III:				
1993	3.9	3.6	⁷ \$57,600	⁷ \$135,000
1994	3.8	3.9	59,400	139,500
1995	5.7	5.0	61,500	144,600
1996	6.4	6.9	63,900	150,300
1997	4.7	3.7	67,200	157,800
1998	5.0	4.9	71,700	168,600
1999	5.0	5.5	74,400	174,900
2000	5.0	5.4	78,000	183,300
2001	5.0	5.5	82,200	193,500
2002	5.0	5.6	86,700	204,000

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

² Increase in the average wage index from prior year to the year shown. See footnote 6 below and table III.B.1 for projected dollar amounts of the average wage index.

³ The bases for years after 1989 were increased slightly by changes to the indexing procedure, as required by Public Law 101-239.

⁴ Prior to 1991, the Hospital Insurance (HI) contribution base was the same as the OASDI contribution and benefit base. The separate HI base for 1991 was specified by Public Law 101-508.

⁵ Amount specified by the Social Security Amendments of 1977.

⁶ Based on an estimated average wage index of \$22,630.79 for 1992.

⁷ Actual amount, as determined and announced in October 1992.

Other wage-indexed amounts are shown in table II.E.3. The table provides historical values from 1975, when the retirement earnings test exempt amounts were first indexed, through 1993, and also shows projected amounts under the alternative II assumptions through the year 2002. These other wage-indexed program amounts are described in the following paragraphs.

Under the retirement earnings test, earnings below certain amounts are exempted from the withholding of benefits payable to beneficiaries under age 70. Different exempt amounts apply for beneficiaries under age 65 and for those aged 65 to 69. The automatic adjustment provisions require that such exempt amounts be increased in the year following a year in which an automatic cost-of-living benefit increase becomes effective.

Actuarial Analysis

As noted earlier, a worker who becomes eligible for benefits in 1979 or later generally receives a benefit based on his or her indexed earnings. The indexed earnings are used to calculate the worker's Average Indexed Monthly Earnings (AIME). The basic formula used to compute the Primary Insurance Amount (PIA) for workers who reach age 62, become disabled or die in 1993 is:

90 percent of the first \$401 of AIME, plus
32 percent of AIME in excess of \$401
but not in excess of \$2,420, plus
15 percent of AIME in excess of \$2,420.

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

A similar formula is used to compute the maximum total amount of monthly benefits payable on the basis of the earnings of a retired or deceased individual. This formula is a function of the individual's PIA, and is shown below for workers who first became eligible for benefits, or who died before becoming eligible, in 1993:

150 percent of the first \$513 of PIA, plus
272 percent of the PIA in excess of \$513
but not in excess of \$740, plus
134 percent of the PIA in excess of \$740
but not in excess of \$966, plus
175 percent of the PIA in excess of \$966.

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

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

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

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

Automatic Adjustments

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.¹ In addition, it is used for certain purposes under the Railroad Retirement program and the Employee Retirement Income Security Act of 1974.

¹ The first percentage applied to a person's AIME to calculate his or her Primary Insurance Amount varies from 40 percent to 90 percent, depending on the individual's years of coverage. An individual earns a year of coverage when his or her earnings for the year are at least 25 percent of the old-law base.

Actuarial Analysis

TABLE II.E.3.—SELECTED OASDI PROGRAM AMOUNTS DETERMINED UNDER THE AUTOMATIC-ADJUSTMENT PROVISIONS, CALENDAR YEARS 1975-93, AND PROJECTED FUTURE AMOUNTS, CALENDAR YEARS 1994-2002, ON THE BASIS OF THE INTERMEDIATE SET OF ASSUMPTIONS

Calendar year	Retirement earnings test exempt amount		AIME "bend points" in PIA formula		PIA "bend points" in maximum-family-benefit formula			Earnings required for a quarter of coverage ²	"Old law" contribution and benefit base ³
	Under age 65	Ages 65 and over ¹	First	Second	First	Second	Third		
Historical data:									
1975...	\$2,520	\$2,520	(4)	(4)	(4)	(4)	(4)	(5)	(4)
1976...	2,760	2,760	(4)	(4)	(4)	(4)	(4)	(5)	(4)
1977...	3,000	3,000	(4)	(4)	(4)	(4)	(4)	(5)	(4)
1978...	3,240	⁶ 4,000	(4)	(4)	(4)	(4)	(4)	⁷ \$250	(4)
1979...	3,480	⁶ 4,500	⁷ \$180	⁷ \$1,085	⁷ \$230	⁷ \$332	⁷ \$433	260	\$18,900
1980...	3,720	⁶ 5,000	194	1,171	248	358	467	290	20,400
1981...	4,080	⁶ 5,500	211	1,274	270	390	508	310	22,200
1982...	4,440	⁶ 6,000	230	1,388	294	425	554	340	24,300
1983...	4,920	6,600	254	1,528	324	468	610	370	26,700
1984...	5,160	6,960	267	1,612	342	493	643	390	28,200
1985...	5,400	7,320	280	1,691	358	517	675	410	29,700
1986...	5,760	7,800	297	1,790	379	548	714	440	31,500
1987...	6,000	8,160	310	1,866	396	571	745	460	32,700
1988...	6,120	8,400	319	1,922	407	588	767	470	33,600
1989...	6,480	8,880	339	2,044	433	626	816	500	35,700
1990...	6,840	9,360	356	2,145	455	656	856	520	38,100
1991...	7,080	9,720	370	2,230	473	682	890	540	39,600
1992...	7,440	10,200	387	2,333	495	714	931	570	41,400
1993...	7,680	10,560	401	2,420	513	740	966	590	42,900
Estimates:									
1994...	7,920	10,920	417	2,511	532	768	1,002	610	44,400
1995...	8,160	11,280	431	2,600	551	795	1,037	630	45,900
1996...	8,520	11,760	450	2,712	575	830	1,082	660	48,000
1997...	8,880	12,240	470	2,832	600	867	1,130	690	50,100
1998...	9,240	12,720	490	2,951	626	903	1,178	720	52,200
1999...	9,600	13,320	511	3,080	653	943	1,229	750	54,600
2000...	10,080	13,920	534	3,219	682	985	1,285	790	57,000
2001...	10,560	14,640	560	3,374	715	1,033	1,347	820	59,700
2002...	11,040	15,360	588	3,542	751	1,084	1,413	860	62,700

¹In 1955-82, retirement earnings test did not apply at ages 72 and over; beginning in 1983, it does not apply at ages 70 and over.

²See Appendix F for a description of quarter-of-coverage requirements prior to 1978.

³Contribution 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.

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

⁵Amount was not subject to automatic-adjustment provisions in this year.

⁶Amount specified by Social Security Amendments of 1977.

⁷Amount specified for first year by Social Security Amendments of 1977; amounts for subsequent years subject to automatic-adjustment provisions.

F. ACTUARIAL ESTIMATES

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

The required information for the fiscal year that ended September 30, 1992, is presented in section II.C of this report. Estimates of the operations and status of the trust funds during fiscal years 1993-2002 are presented in this section. In addition, similar estimates for calendar years 1993-2002 are presented. A description of the actuarial status of the trust funds over the next 75 years, including long-range estimates of program income and program costs over that period, is also included in this section. The methods used to estimate the short-range operations of the trust funds and the long-range actuarial status are described in section II.H.

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

In the short range, the adequacy of the trust fund level is generally measured by the "trust fund ratio," which is defined to be the assets at the beginning of the year expressed as a percentage of the outgo during the year. (For the years 1984-90, the assets at the beginning of the year also included advance tax transfers for the month of January. Assets at the beginning of subsequent years include ad-

Actuarial Analysis

vance tax transfers only if such transfers are needed to enable the timely payment of benefits.) The trust fund ratio represents the proportion of a year's outgo which can be paid with the funds available at the beginning of the year. During periods when trust fund disbursements exceed income, as might happen during an economic recession, trust fund assets are used to meet the shortfall. In the event of recurring shortfalls for an extended period, the trust funds can allow sufficient time for the development, enactment, and implementation of legislation to restore financial stability to the program.

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

Basic to the discussion of the long-range actuarial status are the concepts of "income rate" and "cost rate," each of which is expressed as a percentage of taxable payroll. The annual income rate is the ratio of income from revenues (payroll tax contributions and income from the taxation of benefits) to the OASDI taxable payroll for the year. The OASDI taxable payroll consists of the total earnings which are subject to OASDI taxes, with some relatively small adjustments.¹ Because the taxable payroll reflects these adjustments, the annual income rate can be defined to be the sum of the OASDI combined

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

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, transfers under the interfund borrowing provisions, and net investment income.

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

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

Actuarial Analysis

foreseen contingencies; thus, in addition to the total outgo during the projection period, the summarized cost rate includes the cost of reaching and maintaining a target trust fund ratio of 100 percent through the end of the projection period.

The present-value calculations take account of the effect of interest on future income and outgo. In calculating the present value of future income, for example, the income in each year of the projection period is discounted to the beginning of the period using the interest rate assumed for calculating the interest earnings of the trust funds during the period. Thus, the calculations of the summarized income and cost rates are consistent with the estimates of trust fund operations over the projection period.

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

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

The long-range test of close actuarial balance applies to a set of valuation periods beginning with the first 10 years and continuing

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

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

1. Operations and Status of the Trust Funds During the Period October 1, 1992, to December 31, 2002

This subsection presents estimates of the operations and financial status of the OASI and DI Trust Funds during the period October 1, 1992, to December 31, 2002, based on the assumptions described in the preceding two sections. No changes are assumed to occur in the present statutory provisions and regulations under which the OASDI program operates.¹

These estimates indicate that the assets of the OASI Trust Fund would continue to increase rapidly throughout the next 10 years under each of the three sets of assumptions shown. In contrast, the estimates indicate that the assets of the DI Trust Fund would be depleted within the next 2-4 years in the absence of corrective legislation. Under the alternative II assumptions, DI assets would decline rapidly and would become insufficient to permit the timely payment of benefits by the end of 1995. Based on the more pessimistic alternative III assumptions, DI assets would be depleted early in 1995. Even under the more favorable conditions assumed for alternative I, DI assets would be depleted in late 1997.

As will be shown later in this subsection, the OASI Trust Fund meets the requirements of the Trustees' test of short-range financial adequacy, but the DI Trust Fund fails to do so. The OASI and DI Trust Funds, if combined, would pass the test. The failure of the DI Trust Fund to meet the requirements of the test and, in particular, the projected depletion of the fund, are clear indications that the financial position of the DI program must be strengthened in the very near future.

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 can be made in certain years, with the next year having only 11 payments. This situation can result 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 1992 would normally have been delivered on January 3, 1993; 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, 1992. The annual benefit figures are shown as if those benefit checks were delivered on the usual date.

a. OASI Trust Fund Operations

Estimates of the operations and status of the OASI Trust Fund during calendar years 1993-2002 are shown in table II.F.1 based on each of the three alternative sets of assumptions. Actual operations for calendar year 1992 are also shown in the table.

The increases in estimated income shown in table II.F.1 under each set of assumptions reflect increases in estimated taxable earnings and growth in interest earnings on the invested assets of the trust fund. For each alternative, employment and earnings are assumed to increase in every year through the year 2002 (with the exception that employment is estimated to decline temporarily during the economic recessions assumed under alternative III). The number of persons with taxable earnings would increase on the basis of alternatives I, II, and III from 133 million during calendar year 1992 to about 152 million, 148 million, and 144 million, respectively, in 2002. The total annual amount of taxable earnings is projected to increase from \$2,530 billion in 1992 to \$4,642 billion, \$4,385 billion, and \$4,393 billion, in 2002, on the basis of alternatives I, II, and III, respectively. (In 1992 dollars—taking account of assumed increases in the CPI from 1992 to 2002 under each alternative—the estimated amounts of taxable earnings in 2002 are \$3,470 billion, \$3,082 billion, and \$2,710 billion, respectively.) These increases in taxable earnings are due primarily to (1) projected increases in employment levels and average earnings in covered employment, (2) increases in the contribution and benefit base in 1993-2002 under the automatic adjustment provisions, and (3) various provisions enacted in 1983-90, 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 the year 2002, interest income to the OASI Trust Fund is projected to range from 11 to 15 percent of total trust fund income (depending on alternative), as compared to 8 percent in 1992.

Actuarial Analysis

**TABLE II.F.1.—ESTIMATED OPERATIONS OF THE OASI TRUST FUND
BY ALTERNATIVE, CALENDAR YEARS 1992-2002**

[Amounts in billions]

Calendar year	Income	Expenditures	Net increase in fund	Fund at end of year	Trust fund	
					Amount ¹	Ratio ²
1992 ³	\$311.2	\$259.9	\$51.3	\$319.1	\$267.8	103
Alternative I:						
1993	326.4	273.4	53.0	372.2	319.2	117
1994	357.5	285.6	71.9	444.1	372.2	130
1995	381.4	298.1	83.3	527.4	444.1	149
1996	410.9	311.6	99.2	626.7	527.4	169
1997	438.7	325.7	113.0	739.6	626.7	192
1998	469.9	340.4	129.5	869.1	739.6	217
1999	502.5	355.9	146.6	1,015.7	869.1	244
2000	528.6	372.3	156.4	1,172.1	1,015.7	273
2001	565.1	389.3	175.8	1,347.9	1,172.1	301
2002	604.1	407.2	196.9	1,544.8	1,347.9	331
Alternative II:						
1993	323.6	273.6	49.9	369.1	319.2	117
1994	351.6	286.8	64.7	433.8	369.1	129
1995	371.6	300.6	71.0	504.9	433.8	144
1996	395.4	315.5	79.9	584.8	504.9	160
1997	418.0	331.4	86.5	671.3	584.8	176
1998	443.6	348.3	95.2	766.5	671.3	193
1999	471.7	366.8	104.9	871.4	766.5	209
2000	494.2	387.2	107.0	978.3	871.4	225
2001	526.6	409.1	117.5	1,095.8	978.3	239
2002	561.2	432.0	129.2	1,225.0	1,095.8	254
Alternative III:						
1993	322.4	274.0	48.5	367.6	319.2	116
1994	346.1	289.9	56.2	423.9	367.6	127
1995	364.6	306.2	58.4	482.2	423.9	138
1996	393.9	329.1	64.8	547.0	482.2	147
1997	414.4	355.7	58.7	605.7	547.0	154
1998	435.2	378.3	56.9	662.6	605.7	160
1999	464.3	403.2	61.1	723.7	662.6	164
2000	488.5	429.8	58.7	782.4	723.7	168
2001	519.9	457.8	62.1	844.5	782.4	171
2002	551.8	487.6	64.2	908.7	844.5	173

¹Represents assets at beginning of year.

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

³Figures for 1992 represent actual experience.

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

Rising expenditures during 1993-2002 reflect automatic benefit increases as well as the upward trend in the numbers of beneficiaries and in the average monthly earnings underlying benefits payable by the program. The growth in the number of beneficiaries in the past and the expected growth in the future result both from the increase in the aged population and from the increase in the proportion of the population which is eligible for benefits. The latter increase is primarily due to various amendments enacted after 1950 which mod-

ified eligibility provisions and extended coverage to additional categories of employment.

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

The estimates shown in table II.F.1 indicate that income to the OASI Trust Fund would substantially exceed expenditures in every year of the short-range projection period, under each of the three sets of assumptions used in this report. The assets of the OASI Trust Fund at the beginning of 1992 were equal to 103 percent of the fund's expenditures in 1992. As described in the introduction to this section, this ratio is known as the "trust fund ratio;" it provides a useful measure of the relative level of trust fund assets. During 1992, income exceeded disbursements by \$51.3 billion. As a result, the trust fund ratio increased to about 117 percent at the beginning of 1993.

Assets are estimated to increase substantially in each year of the short-range projection period, based on each of the three alternative sets of assumptions. The increase in the trust fund ratio from 117 percent at the beginning of 1993 to the range of 173-331 percent at the beginning of the year 2002 is due, in part, to the increases in the OASI tax rate that became effective in 1988 and 1990. Asset growth is also assisted by the increases in taxable earnings during 1982-88 and 1992 that exceeded the rate of growth in benefit payments and the expected continuation of this experience in 1993 and later (except for certain years under alternative III).

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

Actuarial Analysis

various cash flows between the trust fund and the general fund of the Treasury.

Currently, the excess of tax income to the OASI Trust Fund over the fund's expenditures results in a substantial net cash flow from the trust fund to the general fund. Sometime after the turn of the century, as shown in the following subsection, this cash flow will reverse; as trust fund securities are redeemed to meet benefit payments and other expenditures, revenue from the general fund of the Treasury will be drawn upon to provide the necessary cash. The accumulation and subsequent redemption of substantial trust fund assets has important public policy and economic implications that extend well beyond the operation of the OASDI program itself. Discussion of these broader issues is not within the scope of this report.

Based on the alternative II assumptions, the assets of the OASI Trust Fund would continue to exceed 100 percent of annual expenditures by a steadily increasing amount through the end of the year 2002. Consequently, the OASI Trust Fund satisfies the test of short-range financial adequacy by a wide margin. The estimates in table II.F.1 also indicate that the short-range test would be satisfied even under the adverse conditions assumed in alternative III.

In interpreting the trust fund ratios in table II.F.1, 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. Assets of roughly 8 to 9 percent of annual expenditures are normally sufficient for this purpose. If the assets of either the OASI or DI Trust Fund at the end of a month fall below the minimum amount needed to meet the benefits payable at the beginning of the next month, section 201(a) of the Social Security Act provides for an advance transfer to the trust fund of all the taxes that are expected to be received by the fund in the next month. Thus, the difference between (1) the sum of the estimated trust fund ratios shown in table II.F.1 and the advance tax transfers for January expressed as a percentage of total expenditures in the

year and (2) the minimum required level of about 8-9 percent, represents the reserve available to handle adverse contingencies.

b. DI Trust Fund Operations

The estimated operations and financial status of the DI Trust Fund during calendar years 1993-2002 under the three sets of assumptions are shown in table II.F.2, together with figures on actual experience in 1992. 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. Because of the low level of DI assets, however, interest income is not currently a significant component in the growth in overall income to the DI Trust Fund.

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, on the basis of all three sets of assumptions, the number of DI beneficiaries is projected to continue increasing throughout the short-range projection period. The projected growth in the number of DI beneficiaries is attributable to several factors, including (1) gradual increases in the number of persons estimated to be insured for disability benefits and (2) an assumption that the number of insured workers who apply for and are awarded disability benefits will continue to substantially exceed the number of disabled worker beneficiaries whose benefits terminate each year as a result of death, recovery, or attainment of normal retirement age.

The proportion of insured workers who apply for and are awarded disability benefits in a given year is referred to as the "disability incidence rate." This rate has fluctuated substantially in past years and the causes for the variation have not been precisely determined. Incidence rates increased during 1970-75, declined during 1976-82, increased again during 1983-85, and remained steady during 1986-89. During 1990-92 the incidence rate resumed increasing, with unusually rapid increases (on a relative basis) of 8, 12, and 16 percent in those 3 years.

The rapid increases in disability benefit applications and awards during 1990-92 are thought to be attributable, in part, to the rise in unemployment associated with the 1990-91 economic recession (although the evidence is somewhat inconclusive). Other explanatory

Actuarial Analysis

factors may include changes to the conditions governing receipt of disability benefits, as introduced through recent legislation, regulations, and court decisions, and increased awareness of the DI program by the public.

During 1992, in addition, special administrative procedures were implemented to process probable disability awards on an expedited basis. These procedures were designed to minimize the effects of the extremely heavy workloads imposed by the large increase in the number of applications for disability benefits. The administrative initiative resulted in a one-time acceleration of disability benefit awards, thereby contributing substantially to the unusually large increase in the incidence rate in 1992. These and other factors were discussed at some length in a report entitled "The Social Security Disability Insurance Program: An Analysis" prepared by the Department of Health and Human Services at the request of the Board of Trustees. Reference should be made to this report (issued December 1992) for further details on the possible factors contributing to the rapid increase in incidence rates in recent years.

Although an increasing trend in disability incidence rates has been projected in past annual reports, the actual increases since 1982 have frequently been larger than expected. In particular, the experience during 1990-92 exceeded prior assumptions by a wide margin. Due to the extreme 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 will be necessarily uncertain. In this report, under alternative II, disability incidence rates are assumed to increase slightly for a few years before beginning to decline toward their historical average. For alternative I, incidence rates are assumed to decline from the level experienced in 1992 to a level slightly below the historical average. Under alternative III, assumed incidence rates increase to near the highest levels experienced during the 1970s before beginning to decline.

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. The termination rate due to recovery has been much more volatile. Currently, the proportion of

disabled beneficiaries whose benefits cease because of their recovery from disability is very low in comparison to past levels.

In this report, termination rates due to attainment of normal retirement age are estimated to continue their downward trend through about 2000; terminations due to death are assumed to remain at about their current level; terminations due to recovery are assumed to increase somewhat from their current level. The aggregate termination rates projected under all three alternatives are projected to continue declining gradually during 1992-99, before leveling off at the end of the short-range projection period.

Actuarial Analysis

**TABLE II.F.2.—ESTIMATED OPERATIONS OF THE DI TRUST FUND
BY ALTERNATIVE, CALENDAR YEARS 1992-2002**

[Amounts in billions]

Calendar year	Income	Expenditures	Net increase in fund	Fund at end of year	Trust fund	
					Amount ¹	Ratio ²
1992 ³	\$31.4	\$32.0	-\$0.6	\$12.3	\$12.9	40
Alternative I:						
1993	32.6	34.7	-2.2	10.2	12.3	35
1994	35.4	37.3	-1.9	8.2	10.2	27
1995	37.3	40.1	-2.7	5.5	8.2	21
1996	39.6	43.0	-3.3	2.2	5.5	13
1997 ⁴	41.8	46.1	-4.3	-2.1	55.9	13
1998 ⁴	44.1	49.2	-5.1	-7.2	(6)	(6)
1999 ⁴	46.4	52.5	-6.1	-13.4	(6)	(6)
2000 ⁴	57.7	55.9	1.7	-11.6	(6)	(6)
2001 ⁴	61.8	59.6	2.2	-9.5	(6)	(6)
2002 ⁴	65.5	63.7	1.8	-7.7	(6)	(6)
Alternative II:						
1993	32.3	35.4	-3.2	9.2	12.3	35
1994	34.6	38.9	-4.3	4.9	9.2	24
1995 ⁴	36.0	42.6	-6.6	-1.7	4.9	11
1996 ⁴	37.6	46.5	-8.9	-10.6	(6)	(6)
1997 ⁴	38.9	50.8	-11.9	-22.5	(6)	(6)
1998 ⁴	40.3	55.3	-14.9	-37.4	(6)	(6)
1999 ⁴	41.7	60.0	-18.3	-55.7	(6)	(6)
2000 ⁴	51.4	65.1	-13.7	-69.4	(6)	(6)
2001 ⁴	54.2	70.5	-16.2	-85.6	(6)	(6)
2002 ⁴	56.5	76.3	-19.7	-105.4	(6)	(6)
Alternative III:						
1993	32.1	36.0	-3.9	8.4	12.3	34
1994	33.9	40.5	-6.6	1.8	8.4	21
1995 ⁴	34.8	45.4	-10.6	-8.8	54.9	11
1996 ⁴	36.6	51.5	-15.0	-23.7	(6)	(6)
1997 ⁴	36.8	58.7	-21.9	-45.7	(6)	(6)
1998 ⁴	36.6	65.5	-29.0	-74.6	(6)	(6)
1999 ⁴	37.0	73.1	-36.0	-110.6	(6)	(6)
2000 ⁴	45.8	81.1	-35.2	-145.9	(6)	(6)
2001 ⁴	47.4	89.4	-42.0	-187.9	(6)	(6)
2002 ⁴	48.1	98.1	-50.1	-237.9	(6)	(6)

¹Except where noted, represents assets at beginning of year.

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

³Figures for 1992 represent actual experience.

⁴Under alternative I, the DI Trust Fund would be depleted in 1997, when assets would become insufficient to pay benefits on time. Under alternatives II and III, depletion would occur in 1995. Thus, figures shown under each alternative for year of depletion and later are theoretical. See text for details.

⁵Represents assets at beginning of year, plus advance tax transfers for January.

⁶Fund depleted.

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

The continuing spread of Acquired Immunodeficiency Syndrome (AIDS) has contributed to the recent increases in DI awards.¹ Due to the extremely high mortality rates of affected individuals, the total number of disabled workers currently receiving benefits has not in-

¹ Although the number of disability benefit awards is higher as a result of AIDS, this effect has been fully reflected in the projections shown in the last several annual reports. Thus, the greater number of awards due to AIDS does not account for the unexpectedly large increases in awards experienced during 1990-92.

creased greatly as a result of AIDS. Although many aspects of AIDS are well understood, there remains considerable uncertainty regarding future medical advances and future incidence of HIV infection. To reflect this uncertainty, the projected numbers of benefit awards to AIDS patients (and their projected longevity) are varied by alternative. Under the intermediate set of assumptions, benefit awards to persons with AIDS are projected to continue to increase through 1998, before beginning to decline. Under alternative I the number of new awards begins to decline in the near future, while the number projected under alternative III increases at a rapid rate throughout the short-range period.

At the beginning of calendar year 1992, the assets of the DI Trust Fund represented 40 percent of annual expenditures. During 1992, DI expenditures exceeded DI income by \$0.6 billion, with the result that the trust fund ratio for the beginning of 1993 decreased to about 35 percent. Under the intermediate assumptions, income is estimated to fall short of expenditures in each year of the short-range projection period, thereby requiring further redemption of Treasury securities held by the trust fund to cover the shortfalls. By the beginning of 1995, DI assets would represent 11 percent of annual expenditures—only slightly more than needed just to meet the benefit payments due in the first month without triggering an advance tax transfer under section 201(a) of the Social Security Act. Following several more months of decline, the low level of assets would trigger advance tax transfers. The availability of each month's tax income in advance, at the beginning of the month, would postpone the depletion of the trust fund for about 2 additional months. Before the end of 1995, however, assets (including advance tax transfers) would become insufficient to meet benefit payments when due without corrective legislation.

Theoretical operations of the DI Trust Fund are shown in table II.F.2, beyond the point of asset depletion, as an indication of the magnitude of the deficits that will have to be corrected. For purposes of illustration, these theoretical operations are calculated on an assumption that the trust fund would be able to *borrow* funds on the same terms that it normally *lends* surplus cash amounts (in other words, a mirror image of normal operations). This assumption permits projected operations for two or more trust funds to be added together, with the resulting totals properly indicative of how the trust funds

Actuarial Analysis

would operate if tax rates were reallocated or if the two funds were merged. It is important to note, however, that there is no provision in the Social Security Act that authorizes borrowing on behalf of a deficient trust fund.

Under the more favorable economic and demographic conditions assumed in alternative I, expenditures from the DI Trust Fund would exceed income through the year 1999.¹ Based on these assumptions, the assets of the DI Trust Fund would decrease steadily and be exhausted late in 1997. Under the less favorable conditions assumed for alternative III, DI assets would decline rapidly in the absence of corrective legislation and would become insufficient to pay benefits when due early in 1995.

Because DI assets fail to reach the level of 1 year's expenditures under the alternative II assumptions and would be insufficient to meet benefit payments when due in 1995 and later, the DI Trust Fund does not satisfy the Trustees' short-range test of financial adequacy. In view of the projected imminent depletion of the DI Trust Fund, it is imperative that the financial position of the DI program be strengthened in the very near future. As noted previously, the Board of Trustees has recommended to the Congress that tax rates be reallocated between the OASI and DI Trust Funds. As will be seen in the next subsection, such action would correct the short-range financing insufficiency for the DI Trust Fund without jeopardizing the short-range financial status of the OASI Trust Fund.

c. Combined OASI and DI Trust Fund Operations

The estimated operations and status of the OASI and DI Trust Funds, combined, during calendar years 1993-2002 on the basis of the three alternatives, are shown in table II.F.3, together with figures on actual experience in 1992. These amounts are generally the sums of the corresponding figures shown in tables II.F.1 and II.F.2. An exception is made reflecting the depletion of the DI Trust Fund. Under each alternative, the trust fund amount shown for OASI and DI combined excludes the DI advance tax transfers that would be reinstated under present law. This adjustment is made to facilitate analysis of how the program would operate if the two trust funds were combined into one, or if tax rates were reallocated between the funds.

¹ As noted in section II.B, the tax rate allocated to the DI Trust Fund is scheduled under present law to increase from 0.60 percent for employees and employers, each, to 0.71 percent starting in the year 2000.

Actuarial Analysis

would operate if tax rates were reallocated or if the two funds were merged. It is important to note, however, that there is no provision in the Social Security Act that authorizes borrowing on behalf of a deficient trust fund.

Under the more favorable economic and demographic conditions assumed in alternative I, expenditures from the DI Trust Fund would exceed income through the year 1999.¹ Based on these assumptions, the assets of the DI Trust Fund would decrease steadily and be exhausted late in 1997. Under the less favorable conditions assumed for alternative III, DI assets would decline rapidly in the absence of corrective legislation and would become insufficient to pay benefits when due early in 1995.

Because DI assets fail to reach the level of 1 year's expenditures under the alternative II assumptions and would be insufficient to meet benefit payments when due in 1995 and later, the DI Trust Fund does not satisfy the Trustees' short-range test of financial adequacy. In view of the projected imminent depletion of the DI Trust Fund, it is imperative that the financial position of the DI program be strengthened in the very near future. As noted previously, the Board of Trustees has recommended to the Congress that tax rates be reallocated between the OASI and DI Trust Funds. As will be seen in the next subsection, such action would correct the short-range financing insufficiency for the DI Trust Fund without jeopardizing the short-range financial status of the OASI Trust Fund.

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¹ As noted in section II.B, the tax rate allocated to the DI Trust Fund is scheduled under present law to increase from 0.60 percent for employees and employers, each, to 0.71 percent starting in the year 2000.

TABLE II.F.3.—ESTIMATED OPERATIONS OF THE OASI AND DI TRUST FUNDS, COMBINED, BY ALTERNATIVE, CALENDAR YEARS 1992-2002

[Amounts in billions]

Calendar year	Income	Expenditures	Net increase in funds	Funds at end of year	Trust fund	
					Amount ¹	Ratio ²
1992 ³	\$342.6	\$291.9	\$50.7	\$331.5	\$280.7	96
Alternative I:						
1993	359.0	308.1	50.9	382.3	331.5	108
1994	392.9	322.9	70.0	452.3	382.3	118
1995	418.7	338.2	80.6	532.9	452.3	134
1996	450.5	354.6	95.9	628.9	532.9	150
1997 ⁴	480.4	371.8	108.7	737.5	5628.9	5169
1998 ⁴	514.0	389.6	124.4	861.9	5737.5	5189
1999 ⁴	548.9	408.4	140.5	1,002.4	5861.9	5211
2000 ⁴	586.3	428.2	158.1	1,160.5	51,002.4	5234
2001 ⁴	626.9	448.9	178.0	1,338.5	51,160.5	5259
2002 ⁴	669.6	470.9	198.7	1,537.2	51,338.5	5284
Alternative II:						
1993	355.8	309.1	46.8	378.3	331.5	107
1994	386.2	325.7	60.5	438.7	378.3	116
1995 ⁴	407.6	343.2	64.4	503.2	438.7	128
1996 ⁴	433.0	362.0	71.0	574.2	5503.2	5139
1997 ⁴	456.9	382.2	74.7	648.8	574.2	5150
1998 ⁴	483.9	403.6	80.3	729.1	5648.8	5161
1999 ⁴	513.4	426.8	86.5	815.7	5729.1	5171
2000 ⁴	545.6	452.3	93.3	908.9	5815.7	5180
2001 ⁴	580.8	479.6	101.2	1,010.2	5908.9	5190
2002 ⁴	617.8	508.3	109.5	1,119.6	51,010.2	5199
Alternative III:						
1993	354.6	310.0	44.6	376.1	331.5	107
1994	380.0	330.4	49.6	425.7	376.1	114
1995 ⁴	399.4	351.6	47.8	473.5	5425.7	5121
1996 ⁴	430.4	380.6	49.8	523.3	5473.5	5124
1997 ⁴	451.2	414.4	36.8	560.0	5523.3	5126
1998 ⁴	471.8	443.8	28.0	588.0	5560.0	5126
1999 ⁴	501.3	476.3	25.0	613.1	5588.0	5123
2000 ⁴	534.3	510.8	23.5	636.5	5613.1	5120
2001 ⁴	567.3	547.2	20.1	656.6	5636.5	5116
2002 ⁴	599.9	585.7	14.1	670.7	5656.6	5112

¹Represents assets at beginning of year.²Represents amounts shown in preceding column as a percentage of expenditures during the year. See text concerning interpretation of these ratios.³Figures for 1992 represent actual experience.⁴Under alternative I, the DI Trust Fund would be depleted in 1997 when assets would become insufficient to pay benefits on time. Under alternatives II and III, depletion would occur in 1995. Thus, figures shown for the combined trust funds under each alternative for the year of depletion and later are theoretical. See text for details.⁵Trust fund amounts and ratios for 1997 and later under alternative I, 1996 and later under alternative II, and 1995 and later under alternative III, do not reflect the advance tax transfers to the DI Trust Fund that would be made under present law. See text for details.

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

At the beginning of 1992, the trust fund ratio for the OASI and DI Trust Funds combined was 96 percent, as shown in table II.F.3. During 1992, total income to the two trust funds was \$50.7 billion higher than total expenditures, reflecting an OASI surplus of \$51.3 billion and the DI deficit of \$0.6 billion. As a result of this net in-

Actuarial Analysis

crease, combined OASDI assets at the beginning of 1993 represented about 107 percent of estimated combined expenditures for the year. Based on alternative II, the trust fund ratio for the combined funds is projected to increase substantially, nearly doubling by 2002. The ratio would grow at an even faster rate under the more optimistic conditions assumed in alternative I, reaching 284 percent at the beginning of the year 2002. Under the alternative III assumptions, assets would grow more slowly, reach a maximum of 126 percent in 1997 and 1998, and decline to 112 percent at the beginning of 2002.

Under the alternative II assumptions, the total assets of the OASI and DI Trust Funds would remain above 100 percent of annual OASDI expenditures throughout the short-range projection period. Therefore, the combined trust funds meet the requirements of the short-range test of financial adequacy. Under the less favorable conditions assumed in alternative III, the fund ratio for OASI and DI combined would still remain above 100 percent through 2002 (although, as indicated in the section on long-range projections, the ratio would fall below this level shortly thereafter). Thus, even under adverse conditions the combined funds would satisfy the short-range test of financial adequacy, although only by a narrow margin.

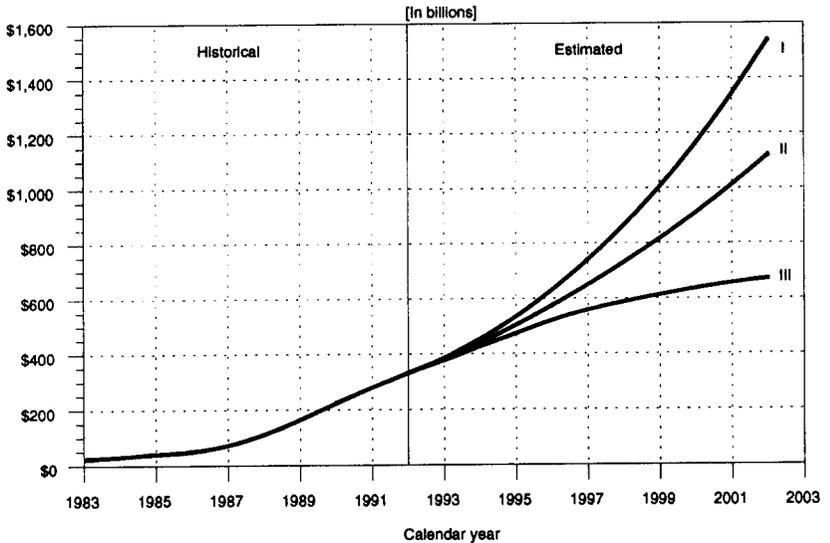
The projections in table II.F.3 indicate that the short-range financial status of the OASI and DI Trust Funds, on a combined basis, is satisfactory. Thus, the near-term depletion of the DI Trust Fund could be avoided through a reallocation of tax rates between OASI and DI without jeopardizing the short-range financial status of the OASI Trust Fund. Such a reallocation would, of course, worsen the long-range financial outlook for OASI. Because the OASI program is substantially larger than DI, however, the negative impact on OASI would be small whereas the improvement for DI would be considerable.

Section 215(i) of the Social Security Act includes a provision to stabilize automatic benefit increases in the event of high inflation at a time when the combined assets of the OASI and DI Trust Funds are at very low levels (see section II.E of this report). Under all three alternatives, the level of OASDI assets during 1993-2002 would substantially exceed the applicable threshold. Thus, the stabilizer pro-

vision would not be triggered during the short-range projection period under any of the sets of assumptions used in this report.

Figure II.F.1 presents the estimated total assets of the OASI and DI Trust Funds at the end of each year 1993-2002, based on the three sets of assumptions (together with actual assets at the end of each year 1983-92). Figure II.F.2 illustrates the pattern of actual past and estimated future OASDI trust fund ratios under the three alternatives. Trust fund ratios for selected years prior to 1993, and estimates for 1993-2002 under the three alternatives, are shown in table II.F.4 for OASI, DI, and both funds combined. In evaluating the ratios shown in figure II.F.2 and table II.F.4, it should be recalled that a minimum of roughly 8 to 9 percent is generally needed to meet monthly cash-flow requirements. The shaded area in figure II.F.2 depicts this requirement.

FIGURE II.F.1.—ESTIMATED ASSETS AT END OF YEAR, FOR OASI AND DI TRUST FUNDS COMBINED, CALENDAR YEARS 1983-2002



Actuarial Analysis

FIGURE II.F.2.—ESTIMATED TRUST FUND RATIOS, FOR OASI AND DI TRUST FUNDS COMBINED, CALENDAR YEARS 1983-2002
 [Assets as a percentage of annual expenditures]

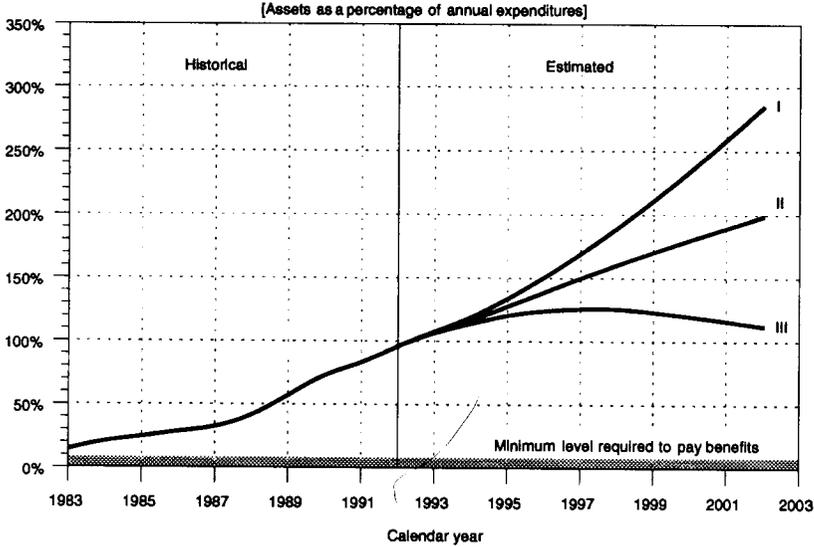


TABLE II.F.4.—TRUST FUND RATIOS¹ BY TRUST FUND, SELECTED CALENDAR YEARS 1950-92, AND ESTIMATED FUTURE RATIOS BY ALTERNATIVE, CALENDAR YEARS 1993-2002

[In percent]

Calendar year	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Historical data:			
1950	1,156	—	1,156
1955	405	—	405
1960	180	304	186
1965	109	121	110
1970	101	126	103
1975	63	92	66
1980	23	35	25
1985	24	27	24
1986	28	38	29
1987	30	44	31
1988	41	38	41
1989	59	38	57
1990	78	40	75
1991	87	39	82
1992	103	40	96
Alternative I:			
1993	117	35	108
1994	130	27	118
1995	149	21	134
1996	169	13	150
1997 ²	192	313	4169
1998 ²	217	(5)	4189
1999 ²	244	(5)	4211
2000 ²	273	(5)	4234
2001 ²	301	(5)	4259
2002 ²	331	(5)	4284

**TABLE II.F.4.—TRUST FUND RATIOS¹ BY TRUST FUND, SELECTED
CALENDAR YEARS 1950-92, AND ESTIMATED FUTURE RATIOS
BY ALTERNATIVE, CALENDAR YEARS 1993-2002 (Cont.)**

[In percent]

Calendar year	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Alternative II:			
1993	117	35	107
1994	129	24	116
1995 ²	144	11	128
1996 ²	160	(5)	4139
1997 ²	176	(5)	4150
1998 ²	193	(5)	4161
1999 ²	209	(5)	4171
2000 ²	225	(5)	4180
2001 ²	239	(5)	4190
2002 ²	254	(5)	4199
Alternative III:			
1993	116	34	107
1994	127	21	114
1995 ²	138	311	4121
1996 ²	147	(5)	4124
1997 ²	154	(5)	4126
1998 ²	160	(5)	4126
1999 ²	164	(5)	4123
2000 ²	168	(5)	4120
2001 ²	171	(5)	4116
2002 ²	173	(5)	4112

¹Except where noted, represents assets at beginning of year as a percentage of expenditures during the year. For 1984-90, assets at beginning of year for each trust fund and the combined funds include the respective OASI and DI advance tax transfers for January.

²Figures for OASI and DI combined are theoretical because of the projected depletion of the DI Trust Fund.

³Assets at beginning of year include advance tax transfers for January.

⁴Assets at beginning of year exclude advance tax transfers to the DI Trust Fund that would be made under present law. See text for details.

⁵Fund depleted.

The estimated trust fund ratios for OASI, as shown in this report under alternative II, are virtually identical to the corresponding estimates in the 1992 Annual Report. The projected operations under alternative I are somewhat less favorable than those shown in the 1992 report, since actual conditions in 1992 were less favorable than assumed under the optimistic assumptions used in that report. Correspondingly, the current estimates based on alternative III are somewhat more favorable, through 1997, than those shown in the 1992 report. After 1997, however, the effects of the assumed second recession under alternative III produce somewhat less favorable estimates in this report than those shown in the 1992 report.

The factors underlying the changes in the financial outlook for the OASI Trust Fund, from last year's annual report to this year's, are analyzed in table II.F.5. In the 1992 Annual Report, the trust fund ratio for OASI was estimated to reach 245 percent at the beginning

Actuarial Analysis

of the year 2001—the tenth projection year from that report. The corresponding ratio shown in this report for the tenth projection year (2002) is 254 percent. As indicated in table II.F.5, if there had been no changes to the projections, then the estimated ratio at the beginning of 2002 would have been 18 percentage points higher than at the beginning of 2001. There were changes, however, to reflect the latest actual data as well as adjustments to the assumptions for future years. The changes in the demographic factors had a negative effect, resulting in an aggregate reduction by the beginning of the year 2002 of 8 percentage points in the OASI trust fund ratio. The net effect of actual economic conditions in 1992, and adjustments to the assumptions for 1993 and later, was to reduce the trust fund ratio by 1 additional percentage point. Together, these factors explain the overall change in the ratio for the tenth projection year.

Corresponding estimates of the factors underlying the changes in the financial projections for the DI Trust Fund, and for the OASI and DI Trust Funds combined, are also shown in table II.F.5. As indicated, most of the decline in the DI fund ratio for the tenth projection year is attributable to changes in the disability assumptions. These changes will be discussed further below.

TABLE II.F.5.—CHANGE IN OASI AND DI TRUST FUND RATIOS AT THE BEGINNING OF THE TENTH YEAR OF PROJECTION, BASED ON THE INTERMEDIATE ASSUMPTIONS, BY REASON FOR CHANGE

[In percent]			
Item	OASI Trust Fund	DI Trust Fund	OASI and DI Trust Funds, combined
Trust fund ratio shown in last year's report for calendar year 2001 ¹	245	2-42	2 206
Change in trust fund ratio due to changes in:			
Valuation period	18	-6	14
Demographic assumptions	-8	(3)	-8
Economic assumptions	-1	-1	-1
Disability assumptions	(3)	-66	-12
Total change in trust fund ratio	9	-73	-7
Trust fund ratio shown in this report for calendar year 2002 ¹	254	2-115	2 199

¹ Figures for DI, and for OASI and DI combined, are theoretical because of the depletion of the DI Trust Fund.

² Does not reflect advance tax transfers to the DI Trust Fund.

³ Between -0.5 and 0.5 percent.

For the DI Trust Fund during 1993-2002, the estimated operations in this report under all three alternatives are significantly more adverse than the corresponding estimates from the 1992 report. In

particular, the DI estimates are adversely affected by a much more rapid increase in the number of new disability awards to insured workers in 1992 than was anticipated in last year's report, together with a slightly larger decline in the rate at which disability benefits terminate due to recovery, death, or attainment of normal retirement age. In addition, these developments have prompted revisions in the assumed rates of disability incidence and termination for future years.

As noted previously, the disability incidence rate in 1992 proved to be substantially greater than had been assumed in the 1992 Annual Report, in part as a result of the expedited processing of disability applications. In 1992, the actual incidence rate rose by 16 percent (on a relative basis), compared to assumed increases of 2 percent under alternative II and 8 percent under alternative III. In addition to the direct financial effect of the greater number of disability awards in 1992 (over 640,000 versus the prior estimated range of 518,000 to 598,000), the rapid growth in incidence necessitated a revision of the incidence rates assumed for future years. The assumed rates for the 1993 Annual Report are initially higher than the corresponding rates from the 1992 report by about the same actual-to-expected differential experienced in 1992; in later years, this difference in assumptions diminishes somewhat. Most of the higher cost estimated for the DI program in the 1993 Annual Report is attributable to the actual incidence experience in 1992 together with the associated revision in assumed future incidence rates.

The decline in the disability termination rate experienced in 1992 was slightly greater than assumed in the 1992 Annual Report. The termination rate assumptions for this annual report were not changed regarding terminations due to attainment of normal retirement age, but were revised to reflect a small decrease in the termination rates due to death and a smaller increase, relative to the prior assumptions, in the termination rates due to recovery.

As mentioned previously, reference may be made to the report "The Social Security Disability Insurance Program: An Analysis," prepared for the Board of Trustees, for further information on the factors believed to be contributing to the worsening financial outlook for the DI Trust Fund.

Table II.F.6 shows that total expenditures in calendar year 1992 from the OASI and DI Trust Funds increased to 11.55 percent of taxable

Actuarial Analysis

payroll for the year—1.09 percentage points less than the income rate of 12.64 percent. This increase in the cost rate resulted primarily from the continuing weak economic growth and relatively high unemployment experienced in 1992. Based on alternative I, the OASDI cost rate is estimated to decline steadily during the short-range projection period, reaching 10.17 percent in 2002. Based on alternative II, the cost rate would remain in the neighborhood of 11.5-11.6 percent throughout the 10-year projection period. Under alternative III, it would increase significantly, to 13.36 percent in 2002.

These cost rate projections are shown in table II.F.6 for both trust funds, separately and combined. Table II.F.6 also shows a comparison of the cost rates with the corresponding income rates. As explained previously, the income rate represents the sum of the combined employee-employer payroll tax rate and the income derived from the Federal income taxation of OASDI benefits, expressed as a percentage of taxable payroll. The difference between the income rate and the cost rate for a given year is referred to as the “balance” for that year.

TABLE II.F.6.—COMPARISON OF INCOME RATES AND COST RATES, BY TRUST FUND, SELECTED CALENDAR YEARS 1950-92, AND ESTIMATED RATES BY ALTERNATIVE, CALENDAR YEARS 1993-2002

[As a percentage of taxable payroll]

Calendar year	OASI Trust Fund			DI Trust Fund			OASI and DI, combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Historical data:									
1950...	3.00	1.17	1.83	—	—	—	3.00	1.17	1.83
1955...	4.00	3.34	.66	—	—	—	4.00	3.34	.66
1960...	5.50	5.59	-.09	0.50	0.30	0.20	6.00	5.89	.11
1965...	6.75	7.23	-.48	.50	.70	-.20	7.25	7.93	-.68
1970...	7.30	7.32	-.02	1.10	.81	.29	8.40	8.12	.28
1975...	8.75	9.29	-.54	1.15	1.36	-.21	9.90	10.65	-.75
1980...	9.04	9.36	-.32	1.12	1.38	-.26	10.16	10.74	-.58
1985...	110.71	9.93	.78	11.07	1.13	-.06	111.79	11.06	.72
1986...	10.59	9.83	.76	1.01	1.11	-.10	11.60	10.94	.66
1987...	10.57	9.59	.98	1.00	1.10	-.10	11.56	10.69	.88
1988 ² ...	11.22	9.59	1.63	1.06	1.08	-.02	12.29	10.67	1.62
1989 ² ...	11.17	9.49	1.68	1.06	1.06	(3)	12.23	10.55	1.69
1990 ² ...	111.32	9.65	1.67	11.17	1.09	.09	112.49	10.74	1.75
1991 ² ...	11.44	10.17	1.28	1.21	1.18	.03	12.65	11.35	1.30
1992 ² ...	11.43	10.28	1.15	1.21	1.27	-.06	12.64	11.55	1.09
Alternative I:									
1993...	11.42	10.19	1.23	1.21	1.29	-.08	12.63	11.48	1.15
1994...	11.42	9.96	1.46	1.21	1.30	-.09	12.63	11.26	1.37
1995...	111.37	9.74	1.64	11.21	1.31	-.10	112.58	11.05	1.54
1996...	11.41	9.56	1.85	1.21	1.32	-.11	12.62	10.87	1.74
1997...	11.40	9.39	2.01	1.21	1.33	-.12	12.61	10.72	1.89
1998...	11.40	9.24	2.15	1.21	1.34	-.13	12.61	10.58	2.03
1999...	11.39	9.12	2.27	1.21	1.35	-.14	12.60	10.47	2.13
2000...	111.17	9.01	2.16	11.43	1.35	.08	112.60	10.37	2.23
2001...	11.17	8.90	2.27	1.43	1.36	.07	12.60	10.26	2.33
2002...	11.17	8.79	2.37	1.43	1.38	.06	12.60	10.17	2.43
Alternative II:									
1993...	11.42	10.30	1.13	1.21	1.33	-.12	12.63	11.63	1.00
1994...	11.42	10.18	1.24	1.21	1.38	-.17	12.63	11.56	1.07
1995...	111.40	10.10	1.30	11.21	1.43	-.22	112.61	11.53	1.08
1996...	11.42	10.06	1.36	1.21	1.48	-.27	12.63	11.54	1.09
1997...	11.41	10.01	1.40	1.21	1.53	-.32	12.63	11.55	1.08
1998...	11.41	9.99	1.42	1.21	1.58	-.37	12.62	11.57	1.05
1999...	11.41	9.96	1.45	1.21	1.63	-.42	12.62	11.59	1.03
2000...	111.19	9.94	1.25	11.43	1.67	-.24	112.62	11.61	1.02
2001...	11.19	9.91	1.28	1.43	1.71	-.27	12.62	11.62	1.00
2002...	11.19	9.87	1.31	1.43	1.74	-.31	12.62	11.62	1.00
Alternative III:									
1993...	11.42	10.35	1.07	1.21	1.36	-.15	12.63	11.71	.92
1994...	11.43	10.49	.94	1.21	1.46	-.25	12.64	11.96	.68
1995...	111.45	10.55	.90	11.21	1.56	-.35	112.66	12.11	.55
1996...	11.43	10.55	.88	1.21	1.65	-.44	12.64	12.20	.44
1997...	11.43	10.92	.52	1.21	1.80	-.59	12.65	12.72	-.07
1998...	11.44	11.10	.34	1.21	1.92	-.71	12.65	13.02	-.37
1999...	11.43	11.12	.32	1.22	2.01	-.80	12.65	13.13	-.48
2000...	111.21	11.09	.13	11.44	2.09	-.66	112.65	13.18	-.53
2001...	11.21	11.10	.12	1.44	2.17	-.73	12.65	13.26	-.61
2002...	11.21	11.12	.09	1.44	2.24	-.80	12.65	13.36	-.71

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

²Figures shown are preliminary.

³Between -0.005 and 0.005 percent of taxable payroll.

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.

Actuarial Analysis

Estimates of the operations of the trust funds during calendar years 1993-2002 have been presented in the preceding tables on the basis of three different sets of economic assumptions, because of the uncertainty of future economic and demographic developments. Under the provisions of the Social Security Act, estimates of the expected operations and status of the trust funds during the next 5 *fiscal* years are required to be shown in this report. Accordingly, detailed estimates of the expected operations and status of the trust funds during fiscal years 1993-97 are shown in the remaining tables of this section for the intermediate set of assumptions (alternative II) only. Similar detailed estimates are also shown for 5 additional fiscal years (1998-2002) and on a calendar-year basis for 1993-2002.

Data on the actual operations of the OASI Trust Fund for selected years during 1940-92, and estimates of the expected operations of the trust fund during 1993-2002 on the basis of the intermediate set of assumptions, are shown in tables II.F.7 and II.F.8 on a fiscal- and calendar-year basis, respectively. Corresponding figures on the operations of the DI Trust Fund are shown in tables II.F.9 and II.F.10. Operations of both trust funds combined are shown in tables II.F.11 and II.F.12. (Data relating to the operations of the two trust funds for years not shown in tables II.F.7-II.F.12 are contained in past annual reports.) The figures shown in tables II.F.8, II.F.10, and II.F.12 for 1987, 1988, and 1992 are adjusted to reflect 12 months of benefit payments in each year. The amounts estimated for 1993, 1998, and 1999 are similarly adjusted.

TABLE IIF.7.—OPERATIONS OF THE OASI TRUST FUND DURING SELECTED FISCAL YEARS 1940-92 AND ESTIMATED FUTURE OPERATIONS DURING FISCAL YEARS 1993-2002, ON THE BASIS OF THE INTERMEDIATE SET OF ASSUMPTIONS

Fiscal year ¹	[In millions]											
	Income					Expenditures						
	Total	Net contributions ²	Income from taxation of benefits	Payments from the general fund of the Treasury ³	Net interest ⁴	Total	Benefit payments ⁵	Administrative expenses	Transfers to Railroad Retirement program	Interfund borrowing transfers ⁶	Net increase in fund	Fund at end of period
Historical data:												
1940 ..	\$592	\$550	—	—	\$42	\$28	\$16	\$12	—	—	\$564	\$1,745
1945 ..	1,434	1,310	—	—	124	267	240	27	—	—	1,167	6,613
1950 ..	2,367	2,106	—	\$4	257	784	727	57	—	—	1,583	12,893
1955 ..	5,525	5,087	—	—	438	4,427	4,333	103	-\$10	—	1,098	21,141
1960 ..	10,360	9,843	—	—	517	11,073	10,270	202	600	—	-713	20,829
1965 ..	16,443	15,857	—	—	586	15,962	15,226	300	436	—	482	20,180
1970 ..	31,746	29,955	—	442	1,350	27,321	26,268	474	579	—	4,425	32,616
1975 ..	58,757	56,017	—	447	2,292	56,676	54,847	848	982	—	2,081	39,948
1980 ..	100,051	97,608	—	557	1,886	103,228	100,626	1,160	1,442	—	-3,177	24,566
1985 ..	179,881	175,305	\$3,151	105	1,321	169,210	165,310	1,589	2,310	-\$4,364	6,308	33,877
1986 ..	195,331	187,007	3,329	2,293	2,701	178,534	174,340	1,609	2,585	-13,155	3,642	37,519
1987 ..	206,846	199,554	3,323	69	3,900	186,101	182,003	1,541	2,557	—	20,745	58,265
1988 ..	235,720	226,409	3,335	55	5,922	197,021	192,502	1,729	2,790	—	38,700	96,964
1989 ..	260,457	247,116	3,638	43	9,660	209,102	204,600	1,657	2,845	—	51,355	148,319
1990 ..	278,607	261,506	2,924	34	14,143	223,481	218,948	1,564	2,969	—	55,126	203,445
1991 ..	293,288	270,841	5,790	-2,089	18,746	241,316	236,195	1,746	3,375	—	51,972	255,417
1992 ..	307,102	278,506	6,019	19	22,557	256,239	251,268	1,823	3,148	—	50,862	306,280
Estimates:												
1993 ..	319,309	287,566	5,900	14	25,829	270,240	264,843	2,009	3,388	—	49,070	355,349
1994 ..	346,839	312,084	6,169	10	28,575	283,594	278,002	2,070	3,521	—	63,245	418,594
1995 ..	366,612	328,235	6,512	8	31,858	297,182	291,465	2,078	3,639	—	69,430	488,024
1996 ..	388,835	347,068	6,774	-562	35,555	311,817	305,934	2,111	3,772	—	77,018	565,042
1997 ..	411,389	364,567	7,034	5	39,783	327,454	321,379	2,159	3,915	—	83,935	648,977
1998 ..	436,600	384,838	7,318	4	44,440	344,104	337,855	2,218	4,031	—	92,495	741,473
1999 ..	464,050	406,638	7,658	3	49,751	362,176	355,730	2,287	4,159	—	101,873	843,346
2000 ..	487,464	423,635	8,079	2	55,748	382,131	375,418	2,363	4,350	—	105,334	948,680
2001 ..	517,371	446,629	8,520	2	62,220	403,649	396,694	2,442	4,512	—	113,722	1,062,420
2002 ..	551,512	473,010	8,978	1	69,522	426,292	419,094	2,528	4,670	—	125,220	1,187,621

See following page for footnotes.

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

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

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

⁴Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust fund on an estimated basis, with a final adjustment, including interest, made in the following

fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in October 1973, the figures shown include relatively small amounts of gifts to the fund. Figures for 1983-86 reflect payments from a borrowing trust fund to a lending trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-91, interest paid from the trust fund to the general fund on advance tax transfers is reflected. The amounts shown for 1985 and 1986 include interest adjustments of \$76.5 million and \$11.5 million, respectively, on unnegotiated checks issued before April 1985.

⁵Beginning in 1967, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for un-negotiated benefit checks.

⁶Negative figures represent amounts repaid from the OASI Trust Fund to the DI and HI Trust Funds.

TABLE II.F.8.—OPERATIONS OF THE OASI TRUST FUND DURING SELECTED CALENDAR YEARS 1940-92 AND ESTIMATED FUTURE OPERATIONS DURING CALENDAR YEARS 1993-2002, ON THE BASIS OF THE INTERMEDIATE SET OF ASSUMPTIONS

Calendar year	Income					Expenditures						Fund at end of period
	Total	Net contributions ¹	Income from taxation of benefits	Payments from the general fund of the Treasury ²	Net interest ³	Total	Benefit payments ⁴	Administrative expenses	Transfers to Railroad Retirement program	Interfund borrowing transfers ⁵	Net increase in fund	
Historical data:												
1940 ..	\$368	\$325	—	—	\$43	\$62	\$35	\$26	—	—	\$306	\$2,031
1945 ..	1,420	1,285	—	—	134	304	274	30	—	—	1,116	7,121
1950 ..	2,928	2,667	—	\$4	257	1,022	961	61	—	—	1,905	13,721
1955 ..	6,167	5,713	—	—	454	5,079	4,968	119	-\$7	—	1,087	21,663
1960 ..	11,382	10,866	—	—	516	11,198	10,677	203	318	—	184	20,324
1965 ..	16,610	16,017	—	—	593	17,501	16,737	328	436	—	-890	18,235
1970 ..	32,220	30,256	—	449	1,515	29,848	28,798	471	579	—	2,371	32,454
1975 ..	59,605	56,816	—	425	2,364	60,395	58,517	896	982	—	-790	36,987
1980 ..	105,841	103,456	—	540	1,845	107,678	105,083	1,154	1,442	—	-1,837	22,823
1985 ..	184,239	176,958	\$3,208	2,203	1,871	171,150	167,248	1,592	2,310	-\$4,364	8,725	35,842
1986 ..	197,393	190,741	3,424	160	3,069	181,000	176,813	1,601	2,585	-13,155	3,239	39,081
1987 ..	210,736	202,735	3,257	55	4,690	187,668	183,587	1,524	2,557	—	23,068	62,149
1988 ..	240,770	229,775	3,384	43	7,568	200,020	195,454	1,776	2,790	—	40,750	102,899
1989 ..	264,653	250,195	2,439	34	11,985	212,489	207,971	1,673	2,845	—	52,164	155,063
1990 ..	286,653	267,530	4,848	-2,089	16,363	227,519	222,987	1,563	2,969	—	59,134	214,197
1991 ..	299,286	272,574	5,864	19	20,829	245,634	240,467	1,792	3,375	—	53,652	267,849
1992 ..	311,162	280,992	5,852	14	24,303	259,861	254,883	1,830	3,148	—	51,301	319,150
Estimates:												
1993 ..	323,587	290,534	5,921	10	27,122	273,643	268,187	2,068	3,388	—	49,944	369,094
1994 ..	351,582	315,171	6,254	8	30,149	286,846	281,253	2,072	3,521	—	64,735	433,830
1995 ..	371,643	331,963	6,599	-562	33,644	300,619	294,893	2,087	3,639	—	71,024	504,854
1996 ..	395,438	350,998	6,832	5	37,603	315,536	309,640	2,123	3,772	—	79,903	584,757
1997 ..	417,955	368,825	7,102	4	42,025	331,422	325,332	2,175	3,915	—	86,533	671,290
1998 ..	443,551	389,151	7,391	3	47,006	348,326	342,059	2,236	4,031	—	95,224	766,515
1999 ..	471,686	411,255	7,748	2	52,681	366,826	360,360	2,307	4,159	—	104,860	871,375
2000 ..	494,197	427,089	8,192	2	58,915	387,245	380,511	2,384	4,350	—	106,952	978,327
2001 ..	526,577	452,169	8,631	1	65,776	409,105	402,128	2,465	4,512	—	117,472	1,095,798
2002 ..	561,229	478,819	9,095	1	73,314	432,015	424,794	2,551	4,670	—	129,214	1,225,012

See following page for footnotes.

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

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

³Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust fund on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for admin-

istrative expenses is contained in the 1970 Annual Report. Beginning in October 1973, the figures shown include relatively small amounts of gifts to the fund. Figures for 1983-86 reflect 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.

⁴Beginning 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.

⁵Negative figures represent amounts repaid from the OASI Trust Fund to the DI and HI Trust Funds.

TABLE II.F.9.—OPERATIONS OF THE DI TRUST FUND DURING SELECTED FISCAL YEARS 1960-92 AND ESTIMATED FUTURE OPERATIONS DURING FISCAL YEARS 1993-2002, ON THE BASIS OF THE INTERMEDIATE SET OF ASSUMPTIONS

Fiscal year ¹	Income					Expenditures						Fund at end of period
	Total	Net contributions ²	Income from taxation of benefits	Payments from the general fund of the Treasury ³	Net interest ⁴	Total	Benefit payments ⁵	Administrative expenses	Transfers to Railroad Retirement program	Interfund borrowing transfers ⁶	Net increase in fund	
Historical data:												
1960 ..	\$1,034	\$987	—	—	\$47	\$533	\$528	\$32	-\$27	—	\$501	\$2,167
1965 ..	1,237	1,175	—	—	62	1,495	1,392	79	24	—	-257	2,007
1970 ..	4,380	4,141	—	\$16	223	2,954	2,795	149	10	—	1,426	5,104
1975 ..	7,920	7,356	—	52	512	7,982	7,701	253	29	—	-62	8,191
1980 ..	17,376	16,805	—	118	453	15,320	14,998	334	-12	—	2,056	7,680
1985 ..	17,984	16,876	\$217	—	891	19,294	18,648	603	43	\$2,540	1,230	5,873
1986 ..	20,130	18,139	229	1,017	746	20,196	19,529	600	68	2,541	2,475	8,348
1987 ..	20,047	19,324	7-16	—	738	21,222	20,427	738	57	—	-1,175	7,173
1988 ..	22,369	21,736	56	—	577	22,269	21,405	803	61	—	100	7,273
1989 ..	24,479	23,694	135	—	650	23,389	22,550	751	88	—	1,090	8,363
1990 ..	28,215	27,291	158	—	766	25,124	24,327	717	80	—	3,091	11,455
1991 ..	29,322	28,953	131	-775	1,014	27,780	26,909	789	82	—	1,543	12,997
1992 ..	31,168	29,871	218	—	1,080	31,285	30,382	845	58	—	-116	12,881
Estimates:												
1993 ..	32,061	30,818	268	—	975	34,315	33,361	900	54	—	-2,254	10,627
1994 ..	34,426	33,436	295	—	696	37,974	37,052	861	62	—	-3,548	7,079
1995 ..	35,810	35,170	325	—	315	41,646	40,641	938	68	—	-5,837	1,242
1996 ^a ..	37,389	37,186	352	-33	-116	45,519	44,419	1,021	79	—	-8,130	-6,888
1997 ^b ..	38,785	39,064	381	—	-660	49,702	48,533	1,078	92	—	-10,917	-17,805
1998 ^b ..	40,280	41,239	411	—	-1,369	54,126	52,890	1,135	102	—	-13,846	-31,651
1999 ^b ..	41,742	43,577	447	—	-2,282	58,834	57,522	1,197	115	—	-17,093	-48,744
2000 ^b ..	49,376	52,254	487	—	-3,365	63,811	62,420	1,265	126	—	-14,436	-63,180
2001 ^b ..	53,999	57,764	531	—	-4,297	69,105	67,651	1,337	117	—	-15,107	-78,286
2002 ^b ..	56,392	61,176	581	—	-5,365	74,807	73,271	1,416	120	—	-18,415	-96,701

See following page for footnotes.

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

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

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

⁴Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust fund on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in July 1974, the figures shown include relatively small amounts of gifts to the fund. Figures for 1983-86 reflect payments from a borrowing trust fund to a lending

trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-91, interest paid from the trust fund to the general fund on advance tax transfers is reflected. The amount shown for 1985 includes an interest adjustment of \$14.8 million on unnegotiated checks issued before April 1985. Figures for 1995-2002 reflect theoretical interest paid from the trust fund to the general fund on theoretical debt borrowings.

⁵Beginning in 1967, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for un-negotiated benefit checks.

⁶Figures represent repayment of amounts lent by the DI Trust Fund to the OASI Trust Fund in calendar year 1982.

⁷Reflects \$195 million in transfers from the DI Trust Fund to the general fund of the Treasury to correct estimated amounts transferred for calendar years 1984 and 1985.

⁸The DI Trust Fund would be depleted in fiscal year 1996, when assets would become insufficient to pay benefits on time. Thus, figures shown for year of depletion and later are theoretical. See text for details.

TABLE II.F.10.—OPERATIONS OF THE DI TRUST FUND DURING SELECTED CALENDAR YEARS 1960-92 AND ESTIMATED FUTURE OPERATIONS DURING CALENDAR YEARS 1993-2002, ON THE BASIS OF THE INTERMEDIATE SET OF ASSUMPTIONS

[In millions]

Calendar year	Income					Expenditures						Fund at end of period
	Total	Net contributions ¹	Income from taxation of benefits	Payments from the general fund of the Treasury ²	Net interest ³	Total	Benefit payments ⁴	Administrative expenses	Transfers to Railroad Retirement program	Interfund borrowing transfers ⁵	Net increase in fund	
Historical data:												
1960 ..	\$1,063	\$1,010	—	—	\$53	\$600	\$568	\$36	-\$5	—	\$464	\$2,289
1965 ..	1,247	1,188	—	—	59	1,687	1,573	90	24	—	-440	1,606
1970 ..	4,774	4,481	—	\$16	277	3,259	3,085	164	10	—	1,514	5,614
1975 ..	8,035	7,444	—	90	502	8,790	8,505	256	29	—	-754	7,354
1980 ..	13,871	13,255	—	130	485	15,872	15,515	368	-12	—	-2,001	3,629
1985 ..	19,301	17,191	\$222	1,017	870	19,478	18,827	608	43	\$2,540	2,363	6,321
1986 ..	19,439	18,399	238	—	803	20,522	19,853	600	68	2,541	1,459	7,780
1987 ..	20,303	19,691	6-36	—	648	21,425	20,519	849	57	—	-1,122	6,658
1988 ..	22,699	22,039	61	—	600	22,494	21,695	737	61	—	206	6,864
1989 ..	24,795	23,993	95	—	707	23,753	22,911	754	88	—	1,041	7,905
1990 ..	28,791	28,539	144	-775	883	25,616	24,829	707	80	—	3,174	11,079
1991 ..	30,390	29,137	190	—	1,063	28,571	27,695	794	82	—	1,819	12,898
1992 ..	31,430	30,136	232	—	1,062	32,004	31,112	834	58	—	-574	12,324
Estimates:												
1993 ..	32,256	31,136	274	—	846	35,414	34,429	931	54	—	-3,158	9,166
1994 ..	34,595	33,768	302	—	525	38,871	37,929	881	62	—	-4,277	4,889
1995 ..	35,984	35,568	333	-33	116	42,567	41,540	959	68	—	-6,583	-1,693
1996 ..	37,593	37,608	359	—	-374	46,491	45,377	1,035	79	—	-8,899	-10,592
1997 ..	38,918	39,521	388	—	-992	50,778	49,594	1,092	92	—	-11,861	-22,453
1998 ..	40,321	41,702	418	—	-1,799	55,255	54,003	1,151	102	—	-14,934	-37,387
1999 ..	41,701	44,071	456	—	-2,827	60,019	58,690	1,215	115	—	-18,319	-55,706
2000 ..	51,384	54,730	498	—	-3,843	65,076	63,666	1,284	126	—	-13,691	-69,397
2001 ..	54,223	58,483	542	—	-4,803	70,468	68,993	1,358	117	—	-16,245	-85,642
2002 ..	56,538	61,902	595	—	-5,958	76,269	74,712	1,437	120	—	-19,731	-105,373

See following page for footnotes.

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

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

³Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust fund on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in July 1974, the figures shown include relatively small amounts of gifts to the fund. Figures for 1983-86 reflect 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. Figures for 1995-2002 reflect theoretical interest paid from the trust fund to the general fund on theoretical debt borrowings.

⁴Beginning 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 un-negotiated benefit checks.

⁵Figures represent repayment of amounts lent by the DI Trust Fund to the OASI Trust Fund in calendar year 1982.

⁶Reflects \$195 million in transfers from the DI Trust Fund to the general fund of the Treasury to correct estimated amounts transferred for calendar years 1984 and 1985.

⁷The DI Trust Fund would be depleted in calendar year 1995, when assets would become insufficient to pay benefits on time. Thus, figures shown for year of depletion and later are theoretical. See text for details.

TABLE II.F.11.—OPERATIONS OF THE OASI AND DI TRUST FUNDS, COMBINED, DURING SELECTED FISCAL YEARS 1960-92 AND ESTIMATED FUTURE OPERATIONS DURING FISCAL YEARS 1993-2002, ON THE BASIS OF THE INTERMEDIATE SET OF ASSUMPTIONS

[In millions]

Fiscal year ¹	Income					Expenditures						Funds at end of period
	Total	Net contributions ²	Income from taxation of benefits	Payments from the general fund of the Treasury ³	Net interest ⁴	Total	Benefit payments ⁵	Administrative expenses	Transfers to Railroad Retirement program	Interfund borrowing transfers ⁶	Net increase in funds	
Historical data:												
1960 ..	\$11,394	\$10,830	—	—	\$564	\$11,606	\$10,798	\$234	\$574	—	-\$212	\$22,996
1965 ..	17,681	17,032	—	—	648	17,456	16,618	379	459	—	224	22,187
1970 ..	36,127	34,096	—	\$458	1,572	30,275	29,063	623	589	—	5,851	37,720
1975 ..	66,677	63,374	—	499	2,804	64,658	62,547	1,101	1,010	—	2,018	48,138
1980 ..	117,427	114,413	—	675	2,339	118,548	115,624	1,494	1,430	—	-1,121	32,246
1985 ..	197,865	192,181	\$3,368	105	2,211	188,504	183,959	2,192	2,353	-\$1,824	7,538	39,750
1986 ..	215,461	205,146	3,558	3,310	3,447	198,730	193,869	2,209	2,653	-10,613	6,117	45,867
1987 ..	226,893	218,878	3,307	69	4,638	207,323	202,430	2,279	2,614	—	19,570	65,437
1988 ..	258,090	248,145	3,390	55	6,500	219,290	213,907	2,532	2,851	—	38,800	104,237
1989 ..	284,936	270,811	3,772	43	10,310	232,491	227,150	2,407	2,934	—	52,445	156,682
1990 ..	306,822	288,797	3,081	34	14,909	248,605	243,275	2,280	3,049	—	58,217	214,900
1991 ..	322,611	299,794	5,921	-2,864	19,759	269,096	263,104	2,535	3,457	—	53,515	268,415
1992 ..	338,270	308,377	6,237	18	23,637	287,524	281,650	2,668	3,206	—	50,746	319,161
Estimates:												
1993 ..	351,370	318,384	6,167	14	26,804	304,555	298,204	2,909	3,442	—	46,815	365,976
1994 ..	381,265	345,520	6,464	10	29,271	321,568	315,054	2,931	3,583	—	59,697	425,673
1995 ..	402,422	363,405	6,837	8	32,172	338,829	332,106	3,016	3,707	—	63,594	489,266
1996 ⁷ ..	426,224	384,254	7,126	-595	35,439	357,336	350,353	3,131	3,851	—	68,888	558,155
1997 ⁷ ..	450,174	403,631	7,415	5	39,123	377,156	369,912	3,237	4,007	—	73,017	631,172
1998 ⁷ ..	476,880	426,077	7,729	4	43,071	398,230	390,745	3,353	4,133	—	78,650	709,822
1999 ⁷ ..	505,791	450,215	8,104	3	47,469	421,010	413,252	3,484	4,274	—	84,781	794,603
2000 ⁷ ..	536,840	475,889	8,567	2	52,382	445,942	437,839	3,627	4,476	—	90,898	885,501
2001 ⁷ ..	571,370	504,393	9,051	2	57,924	472,755	464,345	3,780	4,629	—	98,616	984,116
2002 ⁷ ..	607,904	534,186	9,560	1	64,157	501,100	492,365	3,945	4,790	—	106,805	1,090,920

See following page for footnotes.

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

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

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

⁴Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust funds on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in October

1973, the figures shown include relatively small amounts of gifts to the funds. Figures for 1983-86 reflect payments from a borrowing trust fund to a lending trust fund for interest on amounts owed under the interfund borrowing provisions. During 1983-91, interest paid from the trust funds to the general fund of the Treasury on advance tax transfers is reflected. The amounts shown for 1985 and 1986 include interest adjustments of \$91.3 million and \$11.5 million, respectively, on unnegotiated checks issued before April 1985. Figures for 1995-2002 reflect theoretical interest paid from the DI Trust Fund to the general fund on theoretical debt borrowings.

⁵Beginning in 1967, includes payments for vocational rehabilitation services furnished to disabled persons receiving benefits because of their disabilities. Beginning in 1983, amounts are reduced by amount of reimbursement for un-negotiated benefit checks.

⁶Negative figures represent amounts repaid from the OASI Trust Fund to the HI Trust Fund.

⁷The DI Trust Fund would be depleted in fiscal year 1996 when assets would become insufficient to pay benefits on time. Thus, figures shown for the combined trust funds for the year of depletion and later are theoretical. See text for details.

TABLE II.F.12.—OPERATIONS OF THE OASI AND DI TRUST FUNDS, COMBINED, DURING SELECTED CALENDAR YEARS 1960-92 AND ESTIMATED FUTURE OPERATIONS DURING CALENDAR YEARS 1993-2002, ON THE BASIS OF THE INTERMEDIATE SET OF ASSUMPTIONS

[In millions]

Calendar year	Income					Expenditures						Funds at end of period
	Total	Net contributions ¹	Income from taxation of benefits	Payments from the general fund of the Treasury ²	Net interest ³	Total	Benefit payments ⁴	Administrative expenses	Transfers to Railroad Retirement program	Interfund borrowing transfers ⁵	Net increase in funds	
Historical data:												
1960 ..	\$12,445	\$11,876	—	—	\$569	\$11,798	\$11,245	\$240	\$314	—	\$647	\$22,613
1965 ..	17,857	17,205	—	—	651	19,187	18,311	418	459	—	-1,331	19,841
1970 ..	36,993	34,737	—	\$465	1,791	33,108	31,884	635	589	—	3,886	38,068
1975 ..	67,640	64,259	—	515	2,866	69,184	67,022	1,152	1,010	—	-1,544	44,342
1980 ..	119,712	116,711	—	670	2,330	123,550	120,598	1,522	1,430	—	-3,838	26,453
1985 ..	203,540	194,149	\$3,430	3,220	2,741	190,628	186,075	2,200	2,353	-\$1,824	11,088	42,163
1986 ..	216,833	209,140	3,662	160	3,871	201,522	196,667	2,202	2,653	-10,613	4,698	46,861
1987 ..	231,039	222,425	3,221	55	5,338	209,093	204,106	2,373	2,614	—	21,946	68,807
1988 ..	263,469	251,814	3,445	43	8,168	222,514	217,149	2,513	2,851	—	40,955	109,762
1989 ..	289,448	274,189	2,534	34	12,692	236,242	230,882	2,427	2,934	—	53,206	162,968
1990 ..	315,443	296,070	4,992	-2,864	17,245	253,135	247,816	2,270	3,049	—	62,309	225,277
1991 ..	329,676	301,711	6,054	19	21,892	274,205	268,162	2,587	3,457	—	55,471	280,747
1992 ..	342,591	311,128	6,084	14	25,365	291,865	285,995	2,664	3,206	—	50,726	331,473
Estimates:												
1993 ..	355,843	321,670	6,194	10	27,968	309,056	302,615	2,999	3,442	—	46,786	378,260
1994 ..	386,176	348,939	6,556	8	30,673	325,717	319,181	2,953	3,583	—	60,459	438,719
1995 ⁶ ..	407,627	367,531	6,932	-595	33,760	343,186	336,433	3,046	3,707	—	64,442	503,161
1996 ⁶ ..	433,031	388,606	7,191	5	37,229	362,027	355,017	3,159	3,851	—	71,004	574,165
1997 ⁶ ..	456,873	408,346	7,490	4	41,033	382,201	374,926	3,267	4,007	—	74,672	648,837
1998 ⁶ ..	483,871	430,853	7,809	3	45,207	403,581	396,061	3,387	4,133	—	80,290	729,128
1999 ⁶ ..	513,387	455,326	8,204	2	49,855	426,845	419,049	3,522	4,274	—	86,542	815,669
2000 ⁶ ..	545,581	481,819	8,689	2	55,072	452,321	444,177	3,667	4,476	—	93,261	908,930
2001 ⁶ ..	580,800	510,652	9,173	1	60,974	479,573	471,121	3,823	4,629	—	101,227	1,010,156
2002 ⁶ ..	617,767	540,721	9,690	1	67,356	508,285	499,506	3,989	4,790	—	109,483	1,119,639

See following page for footnotes.

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

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

³Net interest includes net profits or losses on marketable investments. Beginning in 1967, administrative expenses are charged currently to the trust funds on an estimated basis, with a final adjustment, including interest, made in the following fiscal year. The amounts of these interest adjustments are included in net interest. For years prior to 1967, a description of the method of accounting for administrative expenses is contained in the 1970 Annual Report. Beginning in October 1973, the figures shown include relatively small amounts of gifts to the funds. Figures for 1983-86 reflect 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 of the Treasury 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. Figures for 1995-2002 reflect theoretical interest paid from the DI Trust Fund to the general fund on theoretical debt borrowings.

⁴Beginning 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 un-negotiated benefit checks.

⁵Negative figures represent amounts repaid from the OASI Trust Fund to the HI Trust Fund.

⁶The DI Trust Fund would be depleted in calendar year 1995 when assets would become insufficient to pay benefits on time. Thus, figures shown for the combined trust funds for the year of depletion and later are theoretical. See text for details.

2. Long-Range Actuarial Status of the Trust Funds

Historically, the actuarial balance (described earlier in this section) has been used as the principal measure of the actuarial status of the OASDI program. Actuarial balances have traditionally been computed for the 25-year valuation period encompassing 1993-2017, the 50-year valuation period covering 1993-2042, and the entire long-range (75-year) valuation period, 1993-2067.

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

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

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

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

Table II.F.13 presents a comparison of the estimated annual income rates and cost rates by trust fund and alternative. As previously mentioned, the annual income rate excludes net interest income, as well as certain other transfers from the general fund of the Treasury. Detailed long-range projections of trust fund operations, in nominal dollar amounts, are shown in appendix III.B.

The projections for OASDI under the intermediate alternative II assumptions show income rates that increase slowly and steadily due to the combination of the flat payroll tax rate and the gradually increasing effect of the taxation of benefits. The pattern followed by the cost rates is much different. Costs as a percent of taxable payroll are projected to be relatively stable for the next 15 years and then to increase rather rapidly for about the next 25 years (through 2035) as the "baby-boom" generation reaches retirement age. Cost rates decline slightly for about the next 5 years as the "baby-boom" generation ages and the relatively small birth cohorts of the late 1970s reach retirement age. Thereafter, cost rates rise steadily, but slowly, reflecting projected increases in life expectancy. The cost rates during the third 25-year subperiod rise to a level exceeding 18 percent of taxable payroll under the intermediate alternative II assumptions. The income rate during the third 25-year subperiod is just over 13 percent of taxable payroll under alternative II.

Projected income rates under alternatives I and III are very similar to those projected for alternative II as they are largely a reflection of the tax rates specified in the law. OASDI combined cost rates for alternatives I and III differ significantly in size from those projected for alternative II, but follow generally similar patterns. For the more optimistic alternative I, cost rates decline somewhat for about the first 15 years, and then rise, reaching the current level around 2018 and a peak of about 13.2 percent of payroll around 2030. Thereafter, cost rates decline gradually, reaching a stable ultimate level of about 12.4 percent of payroll by 2050. For the more pessimistic alternative III, cost rates rise virtually throughout the 75-year period, but at a relatively faster pace during the next 5 years due to the assumed economic recessions, and between 2010 and 2030 because of the aging of the "baby-boom" generation. During the third 25-year subperiod,

Actuarial Analysis

the projected cost rate reaches 25 percent of payroll and continues rising.

The projected pattern of the OASDI annual balances (that is, the difference between the income rates and the cost rates) is important in the analysis of the financial condition of the program. Under the alternative II assumptions the annual balances are positive for 24 years (through 2016) and are negative thereafter. This annual deficit rises rapidly reaching 2 percent of taxable payroll before 2025 and continues rising thereafter, to a level of 4.94 percent of taxable payroll for 2070.

Under alternative I, projected OASDI actuarial balances are positive for over 30 years (through 2026), are then briefly negative (through 2037), and thereafter are positive, reaching a level of over 0.5 percent of payroll by 2070. Under the more pessimistic alternative III, however, the OASDI actuarial balance is projected to be positive for only 4 years (through 1996) and to be negative thereafter, reaching deficits of 3 percent of payroll by 2020, nearly 10 percent by 2050, and nearly 14 percent of payroll in 2070.

TABLE II.F.13.—COMPARISON OF ESTIMATED INCOME RATES AND COST RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1993-2070

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative I:									
1993....	11.42	10.19	1.23	1.21	1.29	-0.08	12.63	11.48	1.15
1994....	11.42	9.96	1.46	1.21	1.30	-0.09	12.63	11.26	1.37
1995....	11.37	9.74	1.64	1.21	1.31	-0.10	12.58	11.05	1.54
1996....	11.41	9.56	1.85	1.21	1.32	-0.11	12.62	10.87	1.74
1997....	11.40	9.39	2.01	1.21	1.33	-0.12	12.61	10.72	1.89
1998....	11.40	9.24	2.15	1.21	1.34	-0.13	12.61	10.58	2.03
1999....	11.39	9.12	2.27	1.21	1.35	-0.14	12.60	10.47	2.13
2000....	11.17	9.01	2.16	1.43	1.35	.08	12.60	10.37	2.23
2001....	11.17	8.90	2.27	1.43	1.36	.07	12.60	10.26	2.33
2002....	11.17	8.79	2.37	1.43	1.38	.06	12.60	10.17	2.43
2005....	11.23	8.54	2.69	1.44	1.48	-0.04	12.67	10.02	2.65
2010....	11.35	8.52	2.82	1.45	1.61	-0.15	12.80	10.13	2.67
2015....	11.43	9.25	2.18	1.46	1.59	-0.13	12.89	10.84	2.05
2020....	11.49	10.35	1.14	1.46	1.53	-0.07	12.94	11.87	1.07
2025....	11.53	11.25	.28	1.46	1.52	-0.06	12.99	12.77	.22
2030....	11.56	11.74	-.18	1.46	1.48	-0.02	13.01	13.21	-.20
2035....	11.56	11.75	-.19	1.45	1.42	.03	13.01	13.17	-.16
2040....	11.54	11.39	.15	1.45	1.40	.05	12.99	12.79	.21
2045....	11.52	11.04	.48	1.45	1.44	.02	12.98	12.48	.50
2050....	11.51	10.88	.63	1.45	1.46	(1)	12.97	12.34	.63
2055....	11.52	10.90	.61	1.46	1.47	-0.01	12.97	12.37	.60
2060....	11.52	10.97	.55	1.45	1.46	(1)	12.97	12.42	.55
2065....	11.52	10.96	.56	1.45	1.45	(1)	12.97	12.41	.56
2070....	11.52	10.93	.58	1.46	1.46	-0.01	12.97	12.39	.58

TABLE II.F.13.—COMPARISON OF ESTIMATED INCOME RATES AND COST RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1993-2070 (Cont.)

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative II:									
1993...	11.42	10.30	1.13	1.21	1.33	-0.12	12.63	11.63	1.00
1994...	11.42	10.18	1.24	1.21	1.38	-.17	12.63	11.56	1.07
1995...	11.40	10.10	1.30	1.21	1.43	-.22	12.61	11.53	1.08
1996...	11.42	10.06	1.36	1.21	1.48	-.27	12.63	11.54	1.09
1997...	11.41	10.01	1.40	1.21	1.53	-.32	12.63	11.55	1.08
1998...	11.41	9.99	1.42	1.21	1.58	-.37	12.62	11.57	1.05
1999...	11.41	9.96	1.45	1.21	1.63	-.42	12.62	11.59	1.03
2000...	11.19	9.94	1.25	1.43	1.67	-.24	12.62	11.61	1.02
2001...	11.19	9.91	1.28	1.43	1.71	-.27	12.62	11.62	1.00
2002...	11.19	9.87	1.31	1.43	1.74	-.31	12.62	11.62	1.00
2005...	11.27	9.72	1.54	1.44	1.86	-.42	12.71	11.58	1.13
2010...	11.40	9.80	1.60	1.46	1.98	-.52	12.86	11.79	1.08
2015...	11.50	10.69	.81	1.47	1.99	-.52	12.97	12.68	.29
2020...	11.57	12.07	-.50	1.47	1.97	-.50	13.04	14.04	-1.00
2025...	11.63	13.36	-1.72	1.47	2.00	-.53	13.10	15.35	-2.25
2030...	11.68	14.28	-2.61	1.47	1.96	-.50	13.15	16.25	-3.10
2035...	11.70	14.71	-3.01	1.47	1.91	-.45	13.17	16.63	-3.46
2040...	11.70	14.69	-2.99	1.47	1.91	-.45	13.17	16.60	-3.43
2045...	11.70	14.63	-2.94	1.47	2.00	-.53	13.17	16.63	-3.47
2050...	11.71	14.79	-3.08	1.47	2.05	-.59	13.17	16.84	-3.67
2055...	11.72	15.17	-3.45	1.47	2.09	-.62	13.19	17.26	-4.07
2060...	11.75	15.60	-3.86	1.47	2.07	-.60	13.22	17.67	-4.46
2065...	11.76	15.89	-4.13	1.47	2.06	-.59	13.23	17.95	-4.72
2070...	11.77	16.10	-4.33	1.47	2.08	-.61	13.24	18.18	-4.94
Alternative III:									
1993...	11.42	10.35	1.07	1.21	1.36	-.15	12.63	11.71	.92
1994...	11.43	10.49	.94	1.21	1.46	-.25	12.64	11.96	.68
1995...	11.45	10.55	.90	1.21	1.56	-.35	12.66	12.11	.55
1996...	11.43	10.55	.88	1.21	1.65	-.44	12.64	12.20	.44
1997...	11.43	10.92	.52	1.21	1.80	-.59	12.65	12.72	-.07
1998...	11.44	11.10	.34	1.21	1.92	-.71	12.65	13.02	-.37
1999...	11.43	11.12	.32	1.22	2.01	-.80	12.65	13.13	-.48
2000...	11.21	11.09	.13	1.44	2.09	-.66	12.65	13.18	-.53
2001...	11.21	11.10	.12	1.44	2.17	-.73	12.65	13.26	-.61
2002...	11.21	11.12	.09	1.44	2.24	-.80	12.65	13.36	-.71
2005...	11.31	11.07	.24	1.45	2.39	-.94	12.76	13.46	-.70
2010...	11.46	11.21	.26	1.47	2.54	-1.07	12.94	13.75	-.81
2015...	11.58	12.20	-.63	1.48	2.61	-1.13	13.06	14.81	-1.76
2020...	11.66	13.86	-2.20	1.48	2.68	-1.20	13.14	16.54	-3.39
2025...	11.74	15.56	-3.82	1.49	2.79	-1.30	13.23	18.35	-5.12
2030...	11.81	17.03	-5.22	1.49	2.79	-1.31	13.30	19.82	-6.52
2035...	11.87	18.09	-6.22	1.49	2.77	-1.28	13.35	20.86	-7.50
2040...	11.90	18.70	-6.80	1.49	2.82	-1.33	13.38	21.52	-8.13
2045...	11.92	19.26	-7.33	1.49	2.99	-1.50	13.41	22.25	-8.84
2050...	11.97	20.11	-8.14	1.49	3.12	-1.63	13.46	23.23	-9.77
2055...	12.02	21.29	-9.26	1.50	3.21	-1.71	13.52	24.50	-10.98
2060...	12.08	22.54	-10.46	1.50	3.18	-1.69	13.58	25.73	-12.14
2065...	12.14	23.59	-11.45	1.50	3.16	-1.67	13.63	26.75	-13.12
2070...	12.18	24.44	-12.27	1.50	3.18	-1.68	13.67	27.62	-13.95

¹Negligible, i.e., between -0.005 and 0.005 percent of taxable payroll.

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.

Summarized values for the full 75-year period are useful in analyzing the long-range financial condition of the program under present law and the long-range financial effects of proposed modifications to the

Actuarial Analysis

law. In order to focus on the full 75-year period as well as on broad patterns through the period, table II.F.14 summarizes, on a present-value basis, the projected annual figures presented in the previous table for various periods within the overall 75-year projection period.

Table II.F.14 first shows rates on a present-value basis summarized for each of the 25-year subperiods, excluding both the funds on hand at the beginning of the period and the cost of reaching a trust fund target by the end of the period. These rates are useful for comparing the cash flows of tax income and expenditures, as an indicator of the degree to which tax income during the period is sufficient to meet the outgo estimated for the period.

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

The values in table II.F.14 show that the combined OASDI program is expected to operate with a positive balance over shorter valuation periods under alternatives I and II. For the first-25-year valuation period the summarizing values indicate balances of 2.28 percent of taxable payroll under alternative I, 0.95 percent under alternative II, and -0.66 percent under alternative III. Thus, the program is more than adequately financed for the next 25-year valuation period under all but the more pessimistic alternative III projections. Over the 50-year valuation period, 1993-2042, the OASDI program would have a positive balance of 1.36 percent under alternative I but would have deficits of 0.62 percent under alternative II and 3.07 percent under alternative III. Thus, the program is more than adequately financed for the next 50-year valuation period under only the more optimistic set of assumptions, alternative I.

For the entire 75-year valuation period, the combined OASDI program would again have actuarial deficits except for the more op-

timistic set of assumptions, alternative I. The actuarial balance for this long-range valuation period is projected to be 1.16 percent of taxable payroll under alternative I, -1.46 percent under alternative II, and -4.96 percent under alternative III.

TABLE II.F.14.—COMPARISON OF SUMMARIZED INCOME RATES AND COST RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1993-2067

[As a percentage of taxable payroll]									
Calendar year period	OASI			DI			Combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative I:									
25-year subperiods: ¹									
1993-2017 . . .	11.31	9.06	2.25	1.37	1.47	-0.09	12.68	10.53	2.15
2018-2042 . . .	11.52	11.28	.23	1.45	1.48	-.02	12.97	12.76	.21
2043-2067 . . .	11.50	10.98	.52	1.45	1.46	(³)	12.96	12.44	.52
Valuation periods: ²									
25-year:									
1993-2017 . . .	11.84	9.43	2.41	1.39	1.53	-.13	13.24	10.96	2.28
50-year:									
1993-2042 . . .	11.70	10.26	1.44	1.42	1.50	-.07	13.12	11.75	1.36
75-year:									
1993-2067 . . .	11.64	10.43	1.21	1.43	1.48	-.05	13.07	11.91	1.16
Alternative II:									
25-year subperiods: ¹									
1993-2017 . . .	11.35	10.09	1.26	1.38	1.78	-.40	12.72	11.87	.86
2018-2042 . . .	11.64	13.77	-2.13	1.46	1.96	-.50	13.10	15.73	-2.63
2043-2067 . . .	11.71	15.22	-3.51	1.47	2.06	-.59	13.18	17.28	-4.10
Valuation periods: ²									
25-year:									
1993-2017 . . .	11.91	10.52	1.40	1.40	1.85	-.45	13.31	12.37	.95
50-year:									
1993-2042 . . .	11.79	11.95	-.16	1.43	1.89	-.46	13.22	13.84	-.62
75-year:									
1993-2067 . . .	11.77	12.74	-.97	1.44	1.93	-.49	13.21	14.67	-1.46
Alternative III:									
25-year subperiods: ¹									
1993-2017 . . .	11.39	11.24	.15	1.38	2.21	-.83	12.77	13.46	-.69
2018-2042 . . .	11.77	16.54	-4.77	1.48	2.78	-1.29	13.26	19.32	-6.07
2043-2067 . . .	12.00	21.25	-9.25	1.49	3.14	-1.64	13.50	24.39	-10.89
Valuation periods: ²									
25-year:									
1993-2017 . . .	11.98	11.73	.25	1.40	2.31	-.91	13.39	14.04	-.66
50-year:									
1993-2042 . . .	11.89	13.89	-2.00	1.44	2.51	-1.07	13.33	16.40	-3.07
75-year:									
1993-2067 . . .	11.92	15.68	-3.76	1.45	2.66	-1.20	13.37	18.33	-4.96

¹Income rates do not include beginning trust fund balances and cost rates do not include the cost of reaching ending fund targets.

²Income 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.

³Negligible, i.e., between -0.005 and 0.005 percent of taxable payroll.

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

Actuarial Analysis

Also of interest are the long-range financial conditions of the separate OASI and DI programs. As may be concluded from tables II.F.13 and II.F.14, the DI program is in very poor financial condition. The DI program has estimated deficits for every period shown under alternatives I, II, and III. The OASI program also has long-range deficits, but they occur later in the long-range period and they are smaller, relative to program costs.

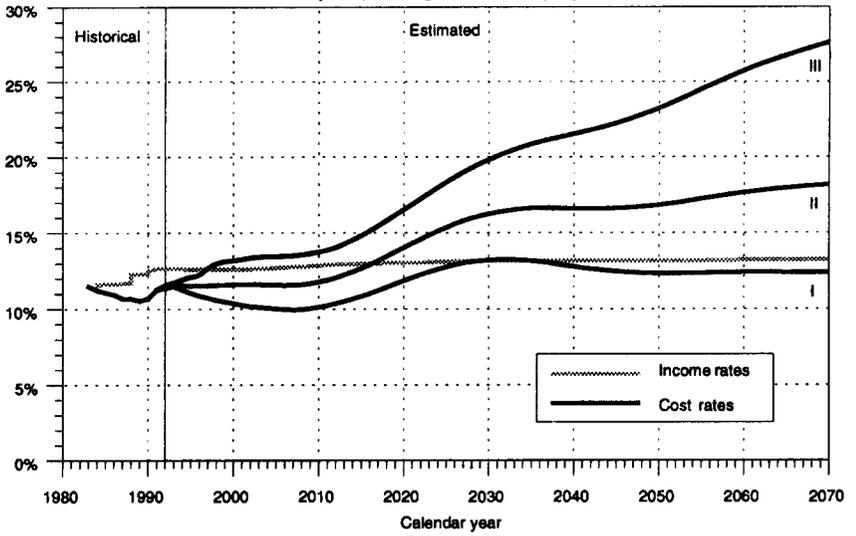
Annual net cash flow under alternative II, as represented by the balances in table II.F.13, remains positive for 26 years for the OASI program, but is negative in every year for DI, by increasingly large amounts. The relatively less-adequate financing for DI is evident as well in the estimates based on alternatives I and III.

Figure II.F.3 shows in graphical form the patterns of the OASDI annual income rates and cost rates. The income rates are shown only for alternative II in order to simplify the graphical presentation and because, as shown in table II.F.13, the variation in the income rates by alternative is very small. The OASDI long-range summarized income rates for alternatives I and III, for the 75-year valuation period, differ by only 0.30 percent of taxable payroll. By 2070, the annual income rates under alternatives I and III differ by only 0.70 percent of taxable payroll. Only small fluctuations are projected in the income rate, as the rate of income from taxation of benefits varies only slightly, for each alternative, reflecting changes in the cost rate and the fact that benefit-taxation threshold amounts are not indexed.

The patterns of the annual balances are indicated in figure II.F.3. For each alternative, the magnitude of each of the positive balances in the early years, as a percent of taxable payroll, is represented by the distance between the appropriate cost-rate curve and the income-rate curve above it. The magnitude of each of the deficits in subsequent years is represented by the distance between the appropriate cost-rate curve and the income-rate curve below it.

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

FIGURE II.F.3.—ESTIMATED OASDI INCOME RATES AND COST RATES BY ALTERNATIVE, CALENDAR YEARS 1983-2070
[As a percentage of taxable payroll]



Actuarial Analysis

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

Table II.F.15 presents a comparison of the estimated actuarial balances with the minimum allowable balance (or maximum allowable deficit) under the long-range test, each expressed as a percentage of the summarized cost rate, based on the intermediate alternative II estimates. Values are shown for only 14 of the valuation periods—those of length 10 years, 15 years, 20 years, ... , and 75 years—although each of the 66 periods—those of length 10 years, 11 years, 12 years, ... , and 75 years—is considered for the test. These minimum allowable balances are calculated to show the limit for each valuation period resulting from the graduated tolerance scale. The patterns in the estimated balances as a percentage of the summarized cost rates as well as that for the minimum allowable balance are presented graphically in figure II.F.4, for the OASI, DI and combined OASDI programs. Values shown for the 25-year, 50-year, and 75-year valuation periods correspond to those presented in table II.F.14.

As discussed earlier, a program is found not to be in long-range close actuarial balance if, for any of the valuation periods ending with the 10th through 75th years of the projection period, the estimated actuarial balance is less than the minimum allowable balance. The minimum allowable balance as a percentage of the summarized cost rate is -5.0 percent for the full 75-year long-range period and is reduced uniformly for shorter valuation periods, reaching zero for the 10-year valuation period.

For the OASI program, the estimated actuarial balance as a percentage of the summarized cost rate exceeds the minimum allowable for valuation periods of length 10 years through 58 years, under the intermediate alternative II estimates. For valuation periods of length greater than 58 years, the estimated actuarial balance is less than the minimum allowable. The shortfall rises gradually, reaching 2.63 percent of the summarized cost rate for the full long-range period. Thus, although the OASI program satisfies the short-range test of financial adequacy (as discussed earlier in this section), it is not in

long-range close actuarial balance.

For the DI program, the estimated actuarial balance as a percentage of the summarized cost rate is less than the minimum allowable balance for each of the 66 separate valuation periods. The shortfall declines from 23.28 percent of the summarized cost rate for the 10-year valuation period to a level of 20.41 percent of the summarized cost rate for the full long-range period. Thus, the DI program is out of long-range close actuarial balance, in addition to the fact that it does not satisfy the short-range test of financial adequacy (as discussed earlier in this section).

For the combined OASDI program, the estimated actuarial balance as a percentage of the summarized cost rate exceeds the minimum allowable balance for valuation periods of length 10 years through 44 years. For valuation periods of length greater than 44 years, the estimated actuarial balance is below the minimum allowable balance. The size of the shortfall rises gradually reaching 4.96 percent of the summarized cost rate for the full 75-year long-range valuation period. Thus, although the OASDI program satisfies the short-range test of financial adequacy (as discussed earlier in this section), it is out of long-range close actuarial balance.

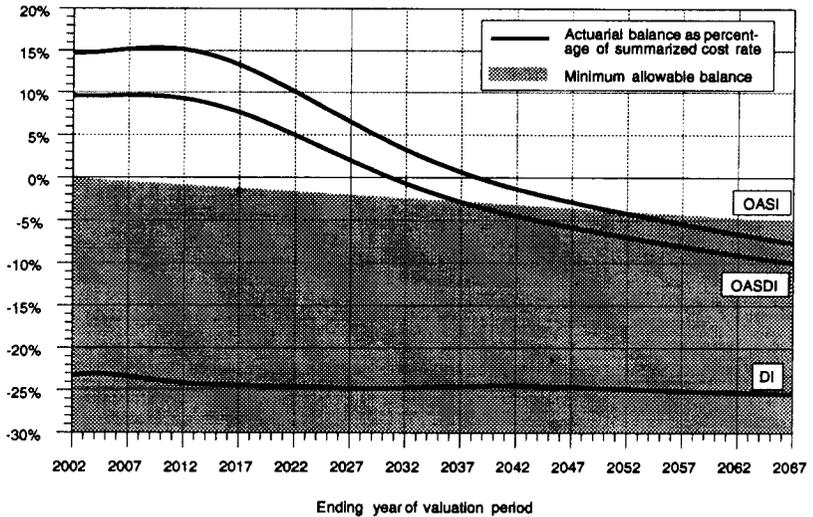
The OASI and DI programs, both separate and combined were also found to be out of close actuarial balance in the 1992 Annual Report. The size and timing of estimated deficits for the combined OASDI program is about the same as shown in the 1992 report. The size of estimated deficits is slightly less for the OASI program in this report. However, for the DI program, the size of the estimated deficits, and therefore the degree to which the program is found to be out of close actuarial balance, is greater based on the estimates presented in this report.

Actuarial Analysis

TABLE II.F.15.—COMPARISON OF ESTIMATED LONG-RANGE ACTUARIAL BALANCES WITH THE MINIMUM ALLOWABLE FOR THE TEST FOR CLOSE ACTUARIAL BALANCE BY TRUST FUND, BASED ON ALTERNATIVE II

Valuation period	Rates (percentage of taxable payroll)		Balance as a percentage of cost rate		
	Summarized income rate	Summarized cost rate	Balance	Balance	Minimum allowable balance
OASI:					
10 years: 1993-2002 . . .	12.65	11.03	1.63	14.74	0.00
15 years: 1993-2007 . . .	12.20	10.60	1.61	15.18	-.38
20 years: 1993-2012 . . .	12.01	10.43	1.58	15.13	-.77
25 years: 1993-2017 . . .	11.91	10.52	1.40	13.29	-1.15
30 years: 1993-2022 . . .	11.86	10.77	1.09	10.09	-1.54
35 years: 1993-2027 . . .	11.83	11.10	.73	6.53	-1.92
40 years: 1993-2032 . . .	11.81	11.44	.37	3.26	-2.31
45 years: 1993-2037 . . .	11.80	11.73	.07	.63	-2.69
50 years: 1993-2042 . . .	11.79	11.95	-.16	-1.34	-3.08
55 years: 1993-2047 . . .	11.78	12.13	-.35	-2.87	-3.46
60 years: 1993-2052 . . .	11.78	12.29	-.51	-4.18	-3.85
65 years: 1993-2057 . . .	11.77	12.45	-.67	-5.41	-4.23
70 years: 1993-2062 . . .	11.77	12.60	-.83	-6.57	-4.62
75 years: 1993-2067 . . .	11.77	12.74	-.97	-7.63	-5.00
DI:					
10 years: 1993-2002 . . .	1.32	1.72	-.40	-23.28	.00
15 years: 1993-2007 . . .	1.36	1.77	-.41	-23.37	-.38
20 years: 1993-2012 . . .	1.38	1.82	-.44	-24.13	-.77
25 years: 1993-2017 . . .	1.40	1.85	-.45	-24.45	-1.15
30 years: 1993-2022 . . .	1.41	1.87	-.46	-24.55	-1.54
35 years: 1993-2027 . . .	1.42	1.88	-.47	-24.76	-1.92
40 years: 1993-2032 . . .	1.42	1.89	-.47	-24.70	-2.31
45 years: 1993-2037 . . .	1.42	1.89	-.46	-24.54	-2.69
50 years: 1993-2042 . . .	1.43	1.89	-.46	-24.46	-3.08
55 years: 1993-2047 . . .	1.43	1.90	-.47	-24.61	-3.46
60 years: 1993-2052 . . .	1.43	1.91	-.47	-24.85	-3.85
65 years: 1993-2057 . . .	1.43	1.92	-.48	-25.10	-4.23
70 years: 1993-2062 . . .	1.44	1.92	-.49	-25.27	-4.62
75 years: 1993-2067 . . .	1.44	1.93	-.49	-25.41	-5.00
OASDI:					
10 years: 1993-2002 . . .	13.97	12.75	1.22	9.60	.00
15 years: 1993-2007 . . .	13.56	12.37	1.19	9.65	-.38
20 years: 1993-2012 . . .	13.39	12.26	1.14	9.29	-.77
25 years: 1993-2017 . . .	13.31	12.37	.95	7.65	-1.15
30 years: 1993-2022 . . .	13.27	12.64	.63	4.97	-1.54
35 years: 1993-2027 . . .	13.25	12.99	.26	2.00	-1.92
40 years: 1993-2032 . . .	13.23	13.33	-.09	-.70	-2.31
45 years: 1993-2037 . . .	13.23	13.61	-.39	-2.86	-2.69
50 years: 1993-2042 . . .	13.22	13.84	-.62	-4.50	-3.08
55 years: 1993-2047 . . .	13.21	14.03	-.81	-5.81	-3.46
60 years: 1993-2052 . . .	13.21	14.20	-.99	-6.96	-3.85
65 years: 1993-2057 . . .	13.21	14.36	-1.15	-8.04	-4.23
70 years: 1993-2062 . . .	13.21	14.52	-1.31	-9.05	-4.62
75 years: 1993-2067 . . .	13.21	14.67	-1.46	-9.96	-5.00

FIGURE II.F.4.—COMPARISON OF ESTIMATED LONG-RANGE ACTUARIAL BALANCES WITH THE MINIMUM ALLOWABLE FOR CLOSE ACTUARIAL BALANCE, ALTERNATIVE II BY TRUST FUND



Annual income rates and their components are shown in table II.F.16, for each alternative set of assumptions. The annual income rates reflect the scheduled payroll tax rates and the projected rates of income from the taxation of benefits, which reflect changes in the cost rates and the fact that benefit-taxation threshold amounts are not indexed.

Summarized values for the annual income and cost rates, along with their components, are presented in table II.F.17 for 25-year, 50-year, and 75-year valuation periods. Summarized income rates include the starting trust fund balance in addition to the components included in the annual income rates. The summarized cost rates include the cost of reaching and maintaining an ending trust fund target of 100 percent of annual expenditures by the end of the period in addition to the expenditures included in the annual cost rates. Thus, the total summarized rates shown in table II.F.17 are the same as the summarized income and cost rates shown in table II.F.14 for the 25-year, 50-year, and 75-year valuation periods.

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

Actuarial Analysis

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

TABLE II.F.16.—COMPONENTS OF ANNUAL INCOME RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1993-2070

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Combined		
	Payroll tax	Taxation of benefits	Total	Payroll tax	Taxation of benefits	Total	Payroll tax	Taxation of benefits	Total
Alternative I:									
1993	11.20	0.22	11.42	1.20	0.01	1.21	12.40	0.23	12.63
1994	11.20	.22	11.42	1.20	.01	1.21	12.40	.23	12.63
1995	11.20	.17	11.37	1.20	.01	1.21	12.40	.18	12.58
1996	11.20	.21	11.41	1.20	.01	1.21	12.40	.22	12.62
1997	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
1998	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
1999	11.20	.19	11.39	1.20	.01	1.21	12.40	.20	12.60
2000	10.98	.19	11.17	1.42	.01	1.43	12.40	.20	12.60
2001	10.98	.19	11.17	1.42	.01	1.43	12.40	.20	12.60
2002	10.98	.19	11.17	1.42	.01	1.43	12.40	.20	12.60
2005	10.98	.25	11.23	1.42	.02	1.44	12.40	.27	12.67
2010	10.98	.37	11.35	1.42	.03	1.45	12.40	.40	12.80
2015	10.98	.45	11.43	1.42	.04	1.46	12.40	.49	12.89
2020	10.98	.51	11.49	1.42	.04	1.46	12.40	.54	12.94
2025	10.98	.55	11.53	1.42	.04	1.46	12.40	.59	12.99
2030	10.98	.58	11.56	1.42	.04	1.46	12.40	.61	13.01
2035	10.98	.58	11.56	1.42	.03	1.45	12.40	.61	13.01
2040	10.98	.56	11.54	1.42	.03	1.45	12.40	.59	12.99
2045	10.98	.54	11.52	1.42	.03	1.45	12.40	.58	12.98
2050	10.98	.53	11.51	1.42	.03	1.45	12.40	.57	12.97
2055	10.98	.54	11.52	1.42	.04	1.46	12.40	.57	12.97
2060	10.98	.54	11.52	1.42	.03	1.45	12.40	.57	12.97
2065	10.98	.54	11.52	1.42	.03	1.45	12.40	.57	12.97
2070	10.98	.54	11.52	1.42	.04	1.46	12.40	.57	12.97

TABLE II.F.16.—COMPONENTS OF ANNUAL INCOME RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1993-2070 (Cont.)

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Combined		
	Payroll tax	Taxation of benefits	Total	Payroll tax	Taxation of benefits	Total	Payroll tax	Taxation of benefits	Total
Alternative II:									
1993	11.20	0.22	11.42	1.20	0.01	1.21	12.40	0.23	12.63
1994	11.20	.22	11.42	1.20	.01	1.21	12.40	.23	12.63
1995	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
1996	11.20	.22	11.42	1.20	.01	1.21	12.40	.23	12.63
1997	11.20	.21	11.41	1.20	.01	1.21	12.40	.23	12.63
1998	11.20	.21	11.41	1.20	.01	1.21	12.40	.22	12.62
1999	11.20	.21	11.41	1.20	.01	1.21	12.40	.22	12.62
2000	10.98	.21	11.19	1.42	.01	1.43	12.40	.22	12.62
2001	10.98	.21	11.19	1.42	.01	1.43	12.40	.22	12.62
2002	10.98	.21	11.19	1.42	.01	1.43	12.40	.22	12.62
2005	10.98	.29	11.27	1.42	.02	1.44	12.40	.31	12.71
2010	10.98	.42	11.40	1.42	.04	1.46	12.40	.46	12.86
2015	10.98	.52	11.50	1.42	.05	1.47	12.40	.57	12.97
2020	10.98	.59	11.57	1.42	.05	1.47	12.40	.64	13.04
2025	10.98	.65	11.63	1.42	.05	1.47	12.40	.70	13.10
2030	10.98	.70	11.68	1.42	.05	1.47	12.40	.75	13.15
2035	10.98	.72	11.70	1.42	.05	1.47	12.40	.77	13.17
2040	10.98	.72	11.70	1.42	.05	1.47	12.40	.77	13.17
2045	10.98	.72	11.70	1.42	.05	1.47	12.40	.77	13.17
2050	10.98	.73	11.71	1.42	.05	1.47	12.40	.77	13.17
2055	10.98	.74	11.72	1.42	.05	1.47	12.40	.79	13.19
2060	10.98	.77	11.75	1.42	.05	1.47	12.40	.82	13.22
2065	10.98	.78	11.76	1.42	.05	1.47	12.40	.83	13.23
2070	10.98	.79	11.77	1.42	.05	1.47	12.40	.84	13.24
Alternative III:									
1993	11.20	.22	11.42	1.20	.01	1.21	12.40	.23	12.63
1994	11.20	.23	11.43	1.20	.01	1.21	12.40	.24	12.64
1995	11.20	.25	11.45	1.20	.01	1.21	12.40	.26	12.66
1996	11.20	.23	11.43	1.20	.01	1.21	12.40	.24	12.64
1997	11.20	.23	11.43	1.20	.01	1.21	12.40	.25	12.65
1998	11.20	.24	11.44	1.20	.01	1.21	12.40	.25	12.65
1999	11.20	.23	11.43	1.20	.02	1.22	12.40	.25	12.65
2000	10.98	.23	11.21	1.42	.02	1.44	12.40	.25	12.65
2001	10.98	.23	11.21	1.42	.02	1.44	12.40	.25	12.65
2002	10.98	.23	11.21	1.42	.02	1.44	12.40	.25	12.65
2005	10.98	.33	11.31	1.42	.03	1.45	12.40	.36	12.76
2010	10.98	.48	11.46	1.42	.05	1.47	12.40	.54	12.94
2015	10.98	.60	11.58	1.42	.06	1.48	12.40	.66	13.06
2020	10.98	.68	11.66	1.42	.06	1.48	12.40	.74	13.14
2025	10.98	.76	11.74	1.42	.07	1.49	12.40	.83	13.23
2030	10.98	.83	11.81	1.42	.07	1.49	12.40	.90	13.30
2035	10.98	.89	11.87	1.42	.07	1.49	12.40	.95	13.35
2040	10.98	.92	11.90	1.42	.07	1.49	12.40	.98	13.38
2045	10.98	.94	11.92	1.42	.07	1.49	12.40	1.01	13.41
2050	10.98	.99	11.97	1.42	.07	1.49	12.40	1.06	13.46
2055	10.98	1.04	12.02	1.42	.08	1.50	12.40	1.12	13.52
2060	10.98	1.10	12.08	1.42	.08	1.50	12.40	1.18	13.58
2065	10.98	1.16	12.14	1.42	.08	1.50	12.40	1.23	13.63
2070	10.98	1.20	12.18	1.42	.08	1.50	12.40	1.27	13.67

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

Actuarial Analysis

TABLE II.F.17.—COMPONENTS OF SUMMARIZED INCOME RATES AND COST RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1993-2067

Valuation period	(As a percentage of taxable payroll)						
	Income rate				Cost rate		
	Payroll tax	Taxation of benefits	Beginning fund balance	Total	Disbursements	Ending fund target	Total
OASI:							
Alternative I:							
1993-2017.....	11.02	.029	.53	11.84	9.06	.37	9.43
1993-2042.....	10.99	.41	.29	11.70	10.07	.19	10.26
1993-2067.....	10.99	.44	.21	11.64	10.32	.11	10.43
Alternative II:							
1993-2017.....	11.02	.33	.57	11.91	10.09	.43	10.52
1993-2042.....	11.00	.48	.32	11.79	11.72	.23	11.95
1993-2067.....	10.99	.55	.24	11.77	12.60	.14	12.74
Alternative III:							
1993-2017.....	11.02	.37	.60	11.98	11.24	.49	11.73
1993-2042.....	11.00	.56	.33	11.89	13.59	.30	13.89
1993-2067.....	10.99	.68	.25	11.92	15.47	.20	15.68
DI:							
Alternative I:							
1993-2017.....	1.35	.02	.02	1.39	1.47	.06	1.53
1993-2042.....	1.38	.03	.01	1.42	1.47	.02	1.50
1993-2067.....	1.39	.03	.01	1.43	1.47	.01	1.48
Alternative II:							
1993-2017.....	1.35	.03	.02	1.40	1.78	.07	1.85
1993-2042.....	1.38	.04	.01	1.43	1.86	.03	1.89
1993-2067.....	1.39	.04	.01	1.44	1.91	.02	1.93
Alternative III:							
1993-2017.....	1.35	.03	.02	1.40	2.21	.10	2.31
1993-2042.....	1.38	.05	.01	1.44	2.46	.05	2.51
1993-2067.....	1.39	.05	.01	1.45	2.63	.03	2.66
OASDI:							
Alternative I:							
1993-2017.....	12.37	.31	.55	13.24	10.53	.43	10.96
1993-2042.....	12.38	.44	.30	13.12	11.54	.21	11.75
1993-2067.....	12.38	.47	.22	13.07	11.78	.13	11.91
Alternative II:							
1993-2017.....	12.37	.35	.59	13.31	11.87	.50	12.37
1993-2042.....	12.38	.51	.33	13.22	13.58	.26	13.84
1993-2067.....	12.38	.59	.25	13.21	14.51	.16	14.67
Alternative III:							
1993-2017.....	12.37	.40	.62	13.39	13.46	.59	14.04
1993-2042.....	12.37	.61	.34	13.33	16.06	.35	16.40
1993-2067.....	12.38	.73	.26	13.37	18.10	.23	18.33

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

The primary reason that the estimated OASDI cost rate increases rapidly after 2010 is that the number of beneficiaries is projected to increase more rapidly than the number of covered workers. This occurs because the relatively large number of persons born during the period of high fertility rates from the end of World War II through the mid-1960s will reach retirement age, and begin to receive benefits, while the relatively small number of persons born during the subsequent period of low fertility rates will comprise the labor force. A comparison of the numbers of covered workers and beneficiaries is shown in table II.F.18.

TABLE II.F.18.—COMPARISON OF OASDI COVERED WORKERS AND BENEFICIARIES BY ALTERNATIVE, CALENDAR YEARS 1945-2070

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	20,158	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.....	112,040	30,385	4,734	35,119	3.2	31
1985.....	119,480	32,776	3,874	36,650	3.3	31
1986.....	121,965	33,349	3,972	37,321	3.3	31
1987.....	125,045	33,918	4,035	37,952	3.3	30
1988.....	129,180	34,343	4,077	38,420	3.4	30
1989.....	131,714	34,754	4,105	38,859	3.4	30
1990.....	132,755	35,266	4,204	39,470	3.4	30
1991.....	132,727	35,785	4,388	40,173	3.3	30
1992.....	132,857	36,314	4,716	41,029	3.2	31
Alternative I:						
1993.....	135,246	36,807	5,050	41,857	3.2	31
1995.....	140,465	37,569	5,573	43,142	3.3	31
2000.....	149,547	39,108	6,464	45,573	3.3	30
2005.....	156,629	40,523	8,191	48,714	3.2	31
2010.....	162,620	43,294	8,719	52,013	3.1	32
2015.....	166,628	48,652	8,598	57,250	2.9	34
2020.....	169,666	55,511	8,315	63,826	2.7	38
2025.....	172,827	62,076	8,355	70,431	2.5	41
2030.....	176,881	67,016	8,264	75,280	2.3	43
2035.....	182,082	69,883	8,161	78,044	2.3	43
2040.....	187,632	70,526	8,259	78,785	2.4	42
2045.....	193,056	70,936	8,681	79,617	2.4	41
2050.....	198,522	72,027	9,027	81,054	2.4	41
2055.....	204,235	74,150	9,355	83,505	2.4	41
2060.....	210,377	76,607	9,556	86,163	2.4	41
2065.....	216,746	78,838	9,818	88,656	2.4	41
2070.....	223,151	80,998	10,169	91,167	2.4	41

TABLE II.F.18.—COMPARISON OF OASDI COVERED WORKERS AND BENEFICIARIES BY ALTERNATIVE, CALENDAR YEARS 1945-2070 (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		
Alternative II:						
1993	134,956	36,808	5,096	41,904	3.2	31
1995	139,010	37,594	5,820	43,414	3.2	31
2000	145,767	39,343	7,310	46,653	3.1	32
2005	151,839	41,158	8,751	49,909	3.0	33
2010	156,948	44,219	9,578	53,797	2.9	34
2015	159,834	49,884	9,706	59,590	2.7	37
2020	161,116	57,120	9,588	66,708	2.4	41
2025	161,912	64,122	9,714	73,836	2.2	46
2030	162,975	69,631	9,611	79,242	2.1	49
2035	164,590	73,091	9,452	82,543	2.0	50
2040	166,134	74,230	9,506	83,736	2.0	50
2045	167,139	74,939	9,922	84,861	2.0	51
2050	167,775	76,203	10,200	86,403	1.9	51
2055	168,153	78,382	10,398	88,780	1.9	53
2060	168,646	80,701	10,366	91,067	1.9	54
2065	169,197	82,492	10,376	92,868	1.8	55
2070	169,714	83,906	10,479	94,385	1.8	56
Alternative III:						
1993	134,732	36,811	5,132	41,944	3.2	31
1995	136,372	37,631	6,043	43,674	3.1	32
2000	141,958	39,595	8,343	47,938	3.0	34
2005	147,184	41,820	9,649	51,469	2.9	35
2010	151,330	45,132	11,004	56,136	2.7	37
2015	153,302	51,057	11,616	62,673	2.4	41
2020	153,108	58,660	11,866	70,526	2.2	46
2025	151,907	66,132	12,226	78,358	1.9	52
2030	150,523	72,389	12,169	84,558	1.8	56
2035	149,156	76,778	11,970	88,748	1.7	60
2040	147,389	78,852	11,984	90,836	1.6	62
2045	144,885	80,314	12,420	92,734	1.6	64
2050	141,680	82,218	12,604	94,822	1.5	67
2055	138,074	84,878	12,608	97,486	1.4	71
2060	134,495	87,449	12,213	99,662	1.3	74
2065	131,050	89,106	11,850	100,956	1.3	77
2070	127,693	90,004	11,615	101,619	1.3	80

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

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

³Preliminary.

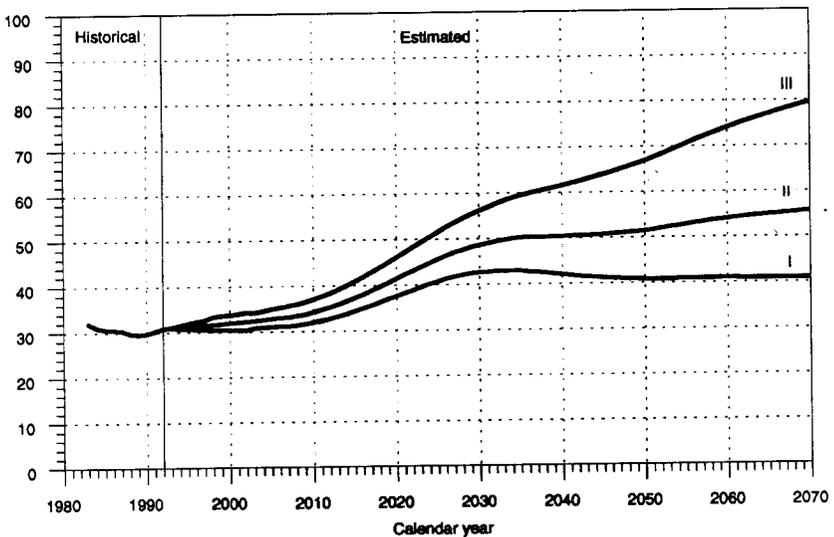
Note: The numbers of beneficiaries do not include certain uninsured persons, most of whom both attained age 72 before 1968 and have fewer than 3 quarters of coverage, in which cases the costs are reimbursed by the general fund of the Treasury. The number of such uninsured persons was 4,368 as of June 30, 1992, and is estimated to be fewer than 500 by the turn of the century. Totals do not necessarily equal the sums of rounded components.

Table II.F.18 shows that the number of covered workers per beneficiary, which was about 3.2 in 1992, is estimated to decline in the future. Based on alternative I, for which high fertility rates and small reductions in death rates are assumed, the ratio declines to an ultimate level of 2.4 by 2040. Based on alternative III, for which low fertility rates and substantial reductions in death rates are assumed, the decline is much greater, reaching 1.3 workers per beneficiary by

2060. Based on alternative II, the ratio declines to 1.8 workers per beneficiary by 2065, and remains at that level through 2070.

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 1992 level of 31 beneficiaries per 100 covered workers, this ratio is estimated to rise by the year 2070 to significantly higher levels, which are 41 under alternative I, 56 under alternative II, and 80 under alternative III. The significance of these numbers can be seen by comparing figure II.F.3 to figure II.F.5.

FIGURE II.F.5.—RATIOS OF ESTIMATED OASDI BENEFICIARIES PER 100 COVERED WORKERS BY ALTERNATIVE, CALENDAR YEARS 1983-2070



For each alternative, the shape of the curve in figure II.F.5, which shows beneficiaries per 100 covered workers, is strikingly similar to that of the corresponding cost-rate curve in figure II.F.3, thereby emphasizing the extent to which the cost of the OASDI program is determined by the age patterns 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 reasonable that the pattern of the annual cost rates is similar to that

Actuarial Analysis

of the annual ratios of beneficiaries to workers. A graphical presentation of covered workers per beneficiary is shown in section I.G of the Overview.

Table II.F.19 shows, by alternative, the estimated trust fund ratios (without regard to advance tax transfers that would be effected after the end of the 10-year, short-range period) for the separate and combined OASI and DI Trust Funds. Also shown in this table is the first year in which a fund is estimated to be exhausted, reflecting the effect of the provision for advance tax transfers. The patterns of the combined fund ratios, over the 75-year period, are shown graphically in figure II.F.6, for all three sets of assumptions.

Based on alternative II, the DI trust fund ratio declines from 35 percent at the beginning of 1993 to 11 percent at the beginning of 1995, during which year the fund becomes depleted. The OASI trust fund ratio rises steadily from 117 percent for 1993, reaching a peak of 432 percent at the beginning of 2016. This increase in the OASI trust fund ratio results from the fact that the annual income rate (excluding interest) exceeds annual outgo for several years (see table II.F.13). Thereafter, the OASI ratio declines steadily, with the OASI Trust Fund becoming exhausted in 2044.

The trust fund ratio for the hypothetical combined OASI and DI Trust Funds rises from 107 percent for 1993 to a peak of 298 percent at the beginning of 2015. Thereafter, the ratio declines, with the combined funds becoming exhausted in 2036.

The trust fund ratio begins to decline in 2015, but annual expenditures do not begin to exceed noninterest income until 2017. Although the dollar amount of assets will continue to rise through 2024, because interest income more than offsets the shortfall in noninterest income, revenue from the general fund of the Treasury will be needed in increasingly large amounts, beginning in 2017, to redeem the trust funds' public-debt obligations due to the cash-flow shortfall. This will differ from the experience of recent years when the trust funds have been net lenders to the general fund. The change in the cash flow between the trust funds and the general fund is expected to have important public policy and economic implications that go well beyond the operation of the OASDI program itself. Discussion of these issues is outside the scope of this report.

Based on alternative I, the trust fund ratio increases virtually throughout the long-range projection period for both the OASI and combined funds, reaching extremely high levels by 2070, of 1,218 and 1,044 percent, respectively. The DI trust fund ratio declines steadily reaching 13 percent at the beginning of 1997, including advance tax transfers, and becomes exhausted by the end of that year. In contrast, under alternative III, the OASI trust fund ratio is estimated to peak at 194 percent in 2011, thereafter declining to fund exhaustion by the end of 2025. The DI Trust Fund is estimated to decline rapidly, becoming depleted in 1995. The combined trust fund ratio is estimated to rise to a peak of 126 percent in 1997, declining thereafter to fund exhaustion by the end of 2017.

Thus, because of the high ultimate cost rates that are projected under all but the most optimistic assumptions, income will eventually need to be increased and/or program costs will need to be reduced in order to prevent the OASI Trust Fund from becoming exhausted. As already indicated, such action will be needed for the DI Trust Fund under even the more optimistic alternative I assumptions.

Even under the more pessimistic assumptions, however, the combined OASI and DI funds on hand plus their estimated future income would be able to cover their combined expenditures for about 24 years into the future (until 2017). Under the alternative II assumptions the combined starting funds plus estimated future income would be able to cover expenditures for about 43 years into the future (until 2036). The program would be able to cover expenditures for the indefinite future under the more optimistic assumptions in alternative I. In the 1991 report, the combined trust funds were projected to be exhausted in 2019 under alternative III and in 2036 under alternative II.

TABLE II.F.19.—ESTIMATED TRUST FUND RATIOS BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1993-2070

[In percent]

Calendar year	Alternative I			Alternative II			Alternative III		
	OASI	DI	Com- bined	OASI	DI	Com- bined	OASI	DI	Com- bined
1993.....	117	35	108	117	35	107	116	34	107
1994.....	130	27	118	129	24	116	127	21	114
1995.....	149	21	134	144	11	128	138	11	121
1996.....	169	13	150	160	(1)	139	147	(1)	124
1997.....	192	13	169	176	(1)	150	154	(1)	126
1998.....	217	(1)	189	193	(1)	161	160	(1)	126
1999.....	244	(1)	211	209	(1)	171	164	(1)	123
2000.....	273	(1)	234	225	(1)	180	168	(1)	120
2001.....	301	(1)	259	239	(1)	190	171	(1)	116
2002.....	331	(1)	284	254	(1)	199	173	(1)	112
2005.....	429	(1)	364	302	(1)	227	181	(1)	98
2010.....	602	(1)	500	388	(1)	276	194	(1)	71
2015.....	716	(1)	597	431	(1)	298	181	(1)	29
2020.....	754	(1)	639	413	(1)	274	121	(1)	(1)
2025.....	760	(1)	649	356	(1)	214	20	(1)	(1)
2030.....	760	(1)	652	275	(1)	130	(1)	(1)	(1)
2035.....	775	(1)	668	183	(1)	33	(1)	(1)	(1)
2040.....	824	(1)	710	89	(1)	(1)	(1)	(1)	(1)
2045.....	893	(1)	766	(1)	(1)	(1)	(1)	(1)	(1)
2050.....	965	(1)	826	(1)	(1)	(1)	(1)	(1)	(1)
2055.....	1,028	(1)	879	(1)	(1)	(1)	(1)	(1)	(1)
2060.....	1,084	(1)	929	(1)	(1)	(1)	(1)	(1)	(1)
2065.....	1,148	(1)	984	(1)	(1)	(1)	(1)	(1)	(1)
2070.....	1,218	(1)	1,044	(1)	(1)	(1)	(1)	(1)	(1)
Trust fund is esti- mated to be ex- hausted in:....	(2)	1997	(2)	2044	1995	2036	2025	1995	2017

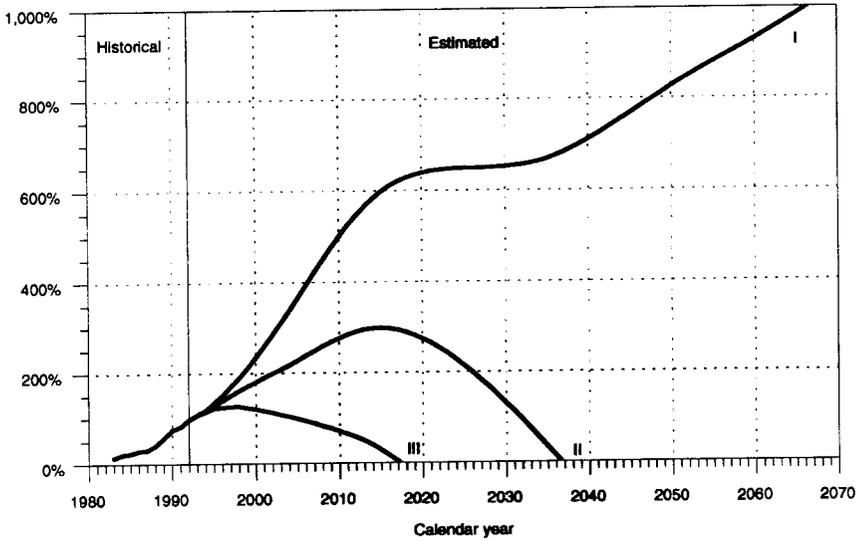
¹The trust fund is estimated to have been exhausted by the beginning of this year. The last line of the table shows the specific year of trust fund exhaustion.

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

Note: See Glossary for definition of trust fund ratio. The OASDI ratios shown for years after a given fund is estimated to be exhausted are theoretical and are shown for informational purposes only.

A graphic illustration of the trust fund ratios for the combined trust funds is shown in figure II.F.6 for each of the alternative sets of assumptions.

FIGURE II.F.6.—ESTIMATED TRUST FUND RATIOS, FOR OASI AND DI TRUST FUNDS COMBINED, CALENDAR YEARS 1983-2070



Actuarial Analysis

Reasons for changes from last year's report to this report in the long-range actuarial balance under the intermediate assumptions are itemized in table II.F.20. Also shown are the estimated effects associated with each reason for change.

**TABLE II.F.20.—CHANGE IN ACTUARIAL BALANCE
ESTIMATED ON THE BASIS OF INTERMEDIATE, ALTERNATIVE II,
ESTIMATES BY TRUST FUND AND REASON FOR CHANGE**

[As a percentage of taxable payroll]

Item	OASI	DI	Combined
Shown in last year's report:			
Income rate	11.73	1.43	13.16
Cost rate	12.74	1.89	14.63
Actuarial balance	-1.01	-46	-1.46
Changes in actuarial balance due to changes in:			
Valuation period	-05	-00	-05
Demographic assumptions	+10	+01	+11
Economic assumptions	-01	-00	-01
Disability assumptions	-00	-08	-08
Methods	-00	+03	+03
Total change in actuarial balance	+03	-03	-00
Shown in this report:			
Actuarial balance	-97	-49	-1.46
Income rate	11.77	1.43	13.21
Cost rate	12.74	1.93	14.67

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

In changing from the valuation period of last year's report, which was 1992-2066, to the valuation period of this report, 1993-2067, the relatively large negative annual balance for the year 2067 is included. This results in a decrease in the long-range actuarial balance. (Note that the positive balance for 1992 is, in effect, retained because the funds accumulated during the year are included in the income rate and the actuarial balance for this year's report.)

Several demographic assumptions were modified: (1) the starting population was updated to reflect the 1990 Census and other data; (2) the total fertility rate was decreased slightly for the first 25 projection years reflecting recently observed birth rates in 1991 that were lower than expected; (3) mortality assumptions were revised to incorporate the latest data; and (4) the ultimate net level of annual legal immigration was increased by 100,000 based on a reassessment of the effects of recent legislation by the Immigration and Naturalization Service. The net effect of these modifications is an increase in the long-range actuarial balance.

Ultimate economic assumptions for interest rates and growth rates in average wages and price levels were not changed for this report.

However, starting values were adjusted based on recent data and projected values for the first 10 years were updated to reflect current expectations. The assumed rate of increase in the gross domestic product (GDP) implicit price deflator was held below the rate of increase assumed for the CPI-W throughout the first 10 years, resulting in slightly slower real growth in average wage levels than was assumed for this period in last year's report. (The reason for this change is described in detail later in this section (in II.H.3). Other economic assumptions and projected rates of employment were updated to incorporate the latest information and analyses. The net effect of these changes is a decrease in the long-range actuarial balance.

Projections of the number of disabled beneficiaries were increased significantly reflecting recent increases in incidence rates and decreases in termination rates. These modifications result in a substantial reduction in the long-range actuarial balance for the DI program.

Several significant improvements and updates were made in the methods used to project future average benefit levels. The method used for projecting the future level of average benefits for disabled worker beneficiaries was improved to more accurately reflect the impact of the workers' compensation offset provision. This change resulted in a significant decrease in the level of projected benefits and thus significantly increased the OASDI actuarial balance. In addition, the method for projecting changes in benefit levels for female retired workers, after their initial benefit eligibility, was improved. The net effect of this change, along with various updates based on recent data, was a small increase in the estimated actuarial balance.

The cost of the OASDI program has been discussed in this section in relation to taxable payroll, which is a program-related concept that is very useful in analyzing the financial status of the OASDI program. The cost can also be discussed in relation to broader economic concepts, such as the gross domestic product (GDP). OASDI outlays generally rise from a little less than 5 percent of GDP currently to about 6.7 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 section III.C.

G. LONG-RANGE SENSITIVITY ANALYSIS

This section presents estimates which illustrate the sensitivity of the long-range actuarial balance of the OASDI program to changes in selected individual assumptions. The estimates based on the three alternative sets of assumptions (see sections II.D and II.F.2) illustrate the effects of varying all of the principal assumptions simultaneously in order to portray a generally more optimistic or pessimistic future, in terms of the financial status of the OASDI program. In the sensitivity analysis presented in this section, the intermediate alternative II is used as the reference point, and one assumption at a time is varied within that alternative. Similar variations in the selected assumptions within the other alternatives would result in similar relative variations in the long-range estimates.

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

1. Total Fertility Rate

Table II.G.1 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about the ultimate total fertility rate. These assumptions are that the ultimate total fertility rate will be 1.6 children per woman (as assumed for alternative III), 1.9 (as assumed for alternative II), and 2.2 (as assumed for alternative I). The rate is assumed to change gradually from its current level and to reach the various ultimate values in 2017.

**TABLE II.G.1.—ESTIMATED OASDI INCOME RATES, COST RATES,
AND ACTUARIAL BALANCES, BASED ON ALTERNATIVE II
WITH VARIOUS FERTILITY ASSUMPTIONS**

[As a percentage of taxable payroll]

Valuation period	Ultimate total fertility rate ¹		
	1.6	1.9	2.2
Summarized income rate:			
25-year: 1993-2017	13.31	13.31	13.31
50-year: 1993-2042	13.23	13.22	13.21
75-year: 1993-2067	13.24	13.21	13.18
Summarized cost rate:			
25-year: 1993-2017	12.33	12.37	12.40
50-year: 1993-2042	13.96	13.84	13.74
75-year: 1993-2067	15.16	14.67	14.21
Balance:			
25-year: 1993-2017	+ .98	+ .95	+ .91
50-year: 1993-2042	-.73	-.62	-.53
75-year: 1993-2067	-1.92	-1.46	-1.03

¹The 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 child-bearing period. The ultimate total fertility rate is assumed to be reached in 2017.

For the 25-year period, the cost rate for the three fertility assumptions varies by only 0.07 percent of taxable payroll. In contrast, the 75-year cost rate varies over a wide range, decreasing from 15.16 to 14.21 percent, as the assumed ultimate total fertility rate increases from 1.6 to 2.2. Similarly, while the 25-year actuarial balance varies by only 0.07 percent of taxable payroll, the 75-year actuarial balance varies over a much wider range, from -1.92 to -1.03 percent.

During the 25-year period, changes in fertility affect the working population only slightly and result in relatively minor changes in the number of child beneficiaries. Hence, the program cost is affected only slightly. 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 0.15 percent of taxable payroll.

2. Death Rates

Table II.G.2 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about future reductions in death rates. The analysis was developed by varying the percentage decrease assumed to occur during 1992-2067 in the death rates by age, sex, and cause of death.

Actuarial Analysis

The decreases assumed for this period, summarized as changes in the age-sex-adjusted death rate, are about 16 percent (as assumed for alternative I), 36 percent (as assumed for alternative II), and 53 percent (as assumed for alternative III). It should be noted that these reductions do not apply uniformly to all ages, as some variation by age was assumed (see section II.H.1) consistent with the objective of selecting assumptions for alternatives I and III that are relatively more optimistic and more pessimistic, respectively, in terms of the financing of the OASDI program.

TABLE II.G.2—ESTIMATED OASDI INCOME RATES, COST RATES, AND ACTUARIAL BALANCES, BASED ON ALTERNATIVE II WITH VARIOUS DEATH-RATE ASSUMPTIONS

[As a percentage of taxable payroll]

Valuation period	Reduction in death rates ¹		
	16 percent	36 percent	53 percent
Summarized income rate:			
25-year: 1993-2017	13.30	13.31	13.32
50-year: 1993-2042	13.20	13.22	13.24
75-year: 1993-2067	13.17	13.21	13.25
Summarized cost rate:			
25-year: 1993-2017	12.13	12.37	12.61
50-year: 1993-2042	13.34	13.84	14.37
75-year: 1993-2067	13.92	14.67	15.52
Balance:			
25-year: 1993-2017	+1.18	+95	+71
50-year: 1993-2042	-.14	-.62	-1.13
75-year: 1993-2067	-.74	-1.46	-2.28

¹The measure of the reduction in death rates is the decrease in the age-sex-adjusted death rate during 1992-2067.

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 and because of the specific changes in the age composition of the population that are projected to occur. The 25-year cost rate increases from 12.13 percent (for 16-percent lower ultimate death rates) to 12.61 percent (for 53-percent lower ultimate rates). The 75-year cost rate increases from 13.92 to 15.52 percent. The actuarial balance decreases from +1.18 to +0.71 percent for the 25-year period, and from -0.74 to -2.28 percent for the 75-year period.

Lower death rates cause both the income (as well as taxable payroll) and the outgo of the OASDI program to be higher than they would otherwise be. The relative increase in outgo, however, exceeds the relative increase in taxable payroll. For any given year, reductions in the death rates for people who have attained the retirement el-

eligibility age of 62 (people whose death rates are the highest) increase the number of retired-worker beneficiaries (and, therefore, the amount of retirement benefits paid) without adding significantly to the number of covered workers (and, therefore, to the taxable payroll). Although reductions for people aged 50 to retirement eligibility age do result in significant increases to the taxable payroll, those increases are not large enough to offset the sum of the additional retirement benefits mentioned above and the disability benefits paid to additional beneficiaries in this pre-retirement age group. At ages under 50, death rates are so low that even substantial reductions would not result in significant increases in the numbers of covered workers or beneficiaries. Consequently, if death rates for all ages are lowered by about the same relative amount, outgo increases at a rate greater than the rate of growth in payroll, thereby resulting in higher cost rates. Each additional 10-percentage-point reduction in the age-sex-adjusted death rate assumed to occur in 1992-2067, relative to the 36-percent reduction assumed for alternative II, decreases the long-range actuarial balance by about 0.42 percent of taxable payroll.

3. Net Immigration

Table II.G.3 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 700,000 persons (as assumed for alternative III), 850,000 persons (as assumed for alternative II), and 1,100,000 persons (as assumed for alternative I).

TABLE II.G.3.—ESTIMATED OASDI INCOME RATES, COST RATES, AND ACTUARIAL BALANCES, BASED ON ALTERNATIVE II WITH VARIOUS NET-IMMIGRATION ASSUMPTIONS

[As a percentage of taxable payroll]

Valuation period	Net immigration per year		
	700,000	850,000	1,100,000
Summarized income rate:			
25-year: 1993-2017	13.32	13.31	13.30
50-year: 1993-2042	13.23	13.22	13.21
75-year: 1993-2067	13.22	13.21	13.20
Summarized cost rate:			
25-year: 1993-2017	12.41	12.37	12.29
50-year: 1993-2042	13.93	13.84	13.71
75-year: 1993-2067	14.76	14.67	14.53
Balance:			
25-year: 1993-2017	+ .90	+ .95	+ 1.01
50-year: 1993-2042	- .70	- .62	- .50
75-year: 1993-2067	- 1.55	- 1.46	- 1.34

For all three periods, the cost rate decreases with increasing rates of net immigration. For the 25-year period, the cost rate decreases from 12.41 percent of taxable payroll (for annual net immigration of 700,000 persons) to 12.29 percent (for annual net immigration of 1,100,000 persons). For the 50-year period, it decreases from 13.93 percent to 13.71 percent, and for the 75-year period, it decreases from 14.76 percent to 14.53 percent. The actuarial balance increases from +0.90 to +1.01 percent for the 25-year period, from -0.70 to -0.50 for the 50-year period, and from -1.55 to -1.34 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 850,000 net immigration assumed for alternative II, increases the long-range actuarial balance by about 0.05 percent of taxable payroll.

4. Real-Wage Differential

Table II.G.4 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 (as assumed for alternative III), 1.1 percentage points (as assumed for alternative II), and 1.7 percentage points (as assumed for alternative I). In each case, the ultimate annual increase in the CPI is assumed to be 4.0 percent (as assumed for alternative II), yielding ultimate percentage increases in average annual wages in covered employment of 4.6, 5.1, and 5.7 percent under alternatives III, II, and I, respectively.

For the 25-year period, the cost rate decreases from 12.77 percent (for a real-wage differential of 0.6 percentage point) to 11.90 percent (for a differential of 1.7 percentage points). For the 50-year period, it decreases from 14.40 to 13.21 percent, and for the 75-year period it decreases from 15.26 to 13.99 percent. The actuarial balance increases from +0.57 to +1.35 percent for the 25-year period, from -1.13 to -0.05 for the 50-year period, and from -2.00 to -0.84 percent for the 75-year period.

**TABLE II.G.4.—ESTIMATED OASDI INCOME RATES, COST RATES,
AND ACTUARIAL BALANCES, BASED ON ALTERNATIVE II
WITH VARIOUS REAL-WAGE ASSUMPTIONS**

Valuation period	Ultimate percentage increase in wages-CPI ¹		
	4.6-4.0	5.1-4.0	5.7-4.0
Summarized income rate:			
25-year: 1993-2017	13.34	13.31	13.26
50-year: 1993-2042	13.27	13.22	13.15
75-year: 1993-2067	13.26	13.21	13.14
Summarized cost rate:			
25-year: 1993-2017	12.77	12.37	11.90
50-year: 1993-2042	14.40	13.84	13.21
75-year: 1993-2067	15.26	14.67	13.99
Balance:			
25-year: 1993-2017	+57	+95	+1.35
50-year: 1993-2042	-1.13	-.62	-.05
75-year: 1993-2067	-2.00	-1.46	-.84

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

The cost rate decreases with increasing real-wage differentials, because the higher real-wage levels increase the taxable payroll, while benefit increases are not affected. Although the initial benefit levels are higher because of the higher wages, these increases are more than offset by the increases in the taxable payroll of future workers. Each 0.5-percentage-point increase in the assumed real-wage differential increases the long-range actuarial balance by about 0.50 percent of taxable payroll.

5. Consumer Price Index

Table II.G.5 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 3.0 percent (as assumed for alternative I), 4.0 percent (as assumed for alternative II), and 5.0 percent (as assumed for alternative III). 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 4.1, 5.1, and 6.1 percent under alternatives I, II, and III, respectively.

Actuarial Analysis

**TABLE II.G.5.—ESTIMATED OASDI INCOME RATES, COST RATES,
AND ACTUARIAL BALANCES, BASED ON ALTERNATIVE II
WITH VARIOUS CPI-INCREASE ASSUMPTIONS**

[As a percentage of taxable payroll]

Valuation period	Ultimate percentage increase in wage-CPI ¹		
	4.1-3.0	5.1-4.0	6.1-5.0
Summarized income rate:			
25-year: 1993-2017	13.32	13.31	13.28
50-year: 1993-2042	13.23	13.22	13.20
75-year: 1993-2067	13.22	13.21	13.19
Summarized cost rate:			
25-year: 1993-2017	12.51	12.37	12.24
50-year: 1993-2042	14.05	13.84	13.66
75-year: 1993-2067	14.90	14.67	14.46
Balance:			
25-year: 1993-2017	+0.81	+0.95	+1.05
50-year: 1993-2042	-0.82	-0.62	-0.46
75-year: 1993-2067	-1.68	-1.46	-1.27

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

For all three periods, the cost rate decreases with greater assumed rates of increase in the CPI. For the 25-year period, the cost rate decreases from 12.51 (for CPI increases of 3.0 percent) to 12.24 percent (for CPI increases of 5.0 percent). For the 50-year period, it decreases from 14.05 to 13.66 percent, and for the 75-year period, it decreases from 14.90 to 14.46 percent. The actuarial balance increases from +0.81 to +1.05 percent for the 25-year period, from -0.82 to -0.46 for the 50-year period, and from -1.68 to -1.27 percent for the 75-year period.

The patterns described above result primarily from the time lag between the effects of the CPI changes on taxable payroll and on benefit payments. When assuming a greater rate of increase in the CPI (in conjunction with a constant real-wage differential), the effect on taxable payroll of the implied greater rate of increase in average wages is experienced immediately, while the effect on benefits of the greater rate of increase in the CPI is experienced with a lag of about 1 year. In addition, the effect on benefits of the greater rate of increase in average wages is experienced no sooner than 2 years later. Thus, the higher taxable payrolls have a stronger effect than the higher benefits, thereby resulting in lower cost rates. The effect of each 1.0-percentage-point increase in the rate of change assumed for the CPI is an increase in the long-range actuarial balance of about 0.20 percent of taxable payroll.

6. Real-Interest Rate

Table II.G.6 shows the estimated OASDI income rates, cost rates, and actuarial balances, on the basis of alternative II with various assumptions about the annual nominal 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 1.5 percent (as assumed for alternative III), 2.3 percent (as assumed for alternative II), and 3.0 percent (as assumed for alternative I). In each case, the ultimate annual increase in the CPI is assumed to be 4.0 percent (as assumed for alternative II), resulting in ultimate annual yields of 5.6, 6.4, and 7.1 percent under alternatives III, II, and I, respectively.

**TABLE II.G.6.—ESTIMATED OASDI INCOME RATES, COST RATES,
AND ACTUARIAL BALANCES, BASED ON ALTERNATIVE II
WITH VARIOUS REAL-INTEREST ASSUMPTIONS**

[As a percentage of taxable payroll]

Valuation period	Ultimate annual real-interest rate		
	1.5 percent	2.3 percent	3.0 percent
Summarized income rate:			
25-year: 1993-2017	13.28	13.31	13.34
50-year: 1993-2042	13.19	13.22	13.24
75-year: 1993-2067	13.19	13.21	13.23
Summarized cost rate:			
25-year: 1993-2017	12.43	12.37	12.31
50-year: 1993-2042	14.12	13.84	13.62
75-year: 1993-2067	15.11	14.67	14.31
Balance:			
25-year: 1993-2017	+0.85	+0.95	+1.03
50-year: 1993-2042	-0.92	-0.62	-0.37
75-year: 1993-2067	-1.92	-1.46	-1.08

For the 25-year period, the cost rate decreases slightly with increasing real-interest rates from 12.43 percent (for an ultimate real-interest rate of 1.5 percent) to 12.31 percent (for an ultimate real-interest rate of 3.0 percent). For the 50-year period, it decreases from 14.12 to 13.62 percent, and for the 75-year period, it decreases from 15.11 to 14.31 percent. The actuarial balance increases from +0.85 to +1.03 percent for the 25-year period, from -0.92 to -0.37 percent for the 50-year period, and from -1.92 to -1.08 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 0.28 percent of taxable payroll.

Actuarial Analysis

7. Disability Incidence Rates

Table II.G.7 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. These assumptions provide that the total gross annual incidence rates will increase from the 1991 level of 5.3 per thousand to levels, in 2026, of 5.8 per thousand for alternative I, 6.9 per thousand for alternative II, and 8.8 per thousand for alternative III.

TABLE II.G.7.—ESTIMATED OASDI INCOME RATES, COST RATES, AND ACTUARIAL BALANCES, BASED ON ALTERNATIVE II WITH VARIOUS DISABILITY INCIDENCE ASSUMPTIONS

[As a percentage of taxable payroll]

Valuation period	Disability incidence rates based on alternative—		
	I	II	III
Summarized income rate:			
25-year: 1993-2017	13.31	13.31	13.31
50-year: 1993-2042	13.22	13.22	13.22
75-year: 1993-2067	13.21	13.21	13.21
Summarized cost rate:			
25-year: 1993-2017	12.27	12.37	12.53
50-year: 1993-2042	13.69	13.84	14.11
75-year: 1993-2067	14.49	14.67	14.97
Balance:			
25-year: 1993-2017	+1.04	+ .95	+ .78
50-year: 1993-2042	-.47	-.62	-.88
75-year: 1993-2067	-1.29	-1.46	-1.76

For the 25-year period, the cost rate increases with increasing disability incidence rates from 12.27 percent (for the relatively low rates assumed for alternative I) to 12.53 percent (for the relatively high rates assumed for alternative III). For the 50-year period, it increases from 13.69 to 14.11 percent, and for the 75-year period, it increases from 14.49 to 14.97 percent. The actuarial balance decreases from +1.04 to +0.78 percent for the 25-year period, from -0.47 to -0.88 percent for the 50-year period, and from -1.29 to -1.76 percent for the 75-year period. Each 1.0-percentage point increase in the ultimate assumed gross incidence rate decreases the long-range OASDI actuarial balance by about 0.16 percent of taxable payroll.

8. Disability Termination Rates

Table II.G.8 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 all three alternatives, death-termination rates by age and sex are assumed to decline throughout the 75-year period. At the end of that period, they reach levels that, in comparison to the corresponding annual rates experienced during the base period, 1977-80, are lower by about 20 percent for males and 10 percent for females for alternative I, lower by about 30 percent for males and 20 percent for females for alternative II, and lower by about 45 percent for males and 35 percent for females for alternative III.

For all three alternatives, ultimate recovery-termination rates by age and sex are assumed to be attained in 2000. For alternative I, they are about 25 percent higher than the corresponding rates experienced during the base period. For alternative III, they are about 15 percent lower than the base-period rates. For alternative II, such rates are about 5 percent higher than those experienced in the base period, in order to reflect the effects of the additional periodic reviews that began in 1981.

TABLE II.G.8.—ESTIMATED OASDI INCOME RATES, COST RATES, AND ACTUARIAL BALANCES, BASED ON ALTERNATIVE II WITH VARIOUS DISABILITY TERMINATION ASSUMPTIONS

[As a percentage of taxable payroll]

Valuation period	Disability termination rates based on alternative—		
	I	II	III
Summarized income rate:			
25-year: 1993-2017	13.31	13.31	13.31
50-year: 1993-2042	13.22	13.22	13.22
75-year: 1993-2067	13.21	13.21	13.21
Summarized cost rate:			
25-year: 1993-2017	12.33	12.37	12.41
50-year: 1993-2042	13.79	13.84	13.91
75-year: 1993-2067	14.61	14.67	14.75
Balance:			
25-year: 1993-2017	+ .98	+ .95	+ .90
50-year: 1993-2042	-.57	-.62	-.69
75-year: 1993-2067	-1.40	-1.46	-1.54

For the 25-year period, the cost rate increases with decreasing disability termination rates from 12.33 percent (for the relatively high rates assumed for alternative I) to 12.41 percent (for the relatively low rates assumed for alternative III). For the 50-year period, it

Actuarial Analysis

increases from 13.79 to 13.91 percent, and for the 75-year period, it increases from 14.61 to 14.75 percent. The actuarial balance decreases from +0.98 to +0.90 percent for the 25-year period, from -0.57 to -0.69 percent for the 50-year period, and from -1.40 to -1.54 percent for the 75-year period.

H. ASSUMPTIONS AND METHODS UNDERLYING THE ACTUARIAL ESTIMATES

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

1. Total Population

Projections were made of the population in the Social Security Area by age, sex, and marital status as of January 1 of each year 1992 through 2080. The projections started with an estimate of the United States population, including armed forces overseas, as of January 1, 1991, based on data from the Bureau of the Census. This population estimate was adjusted for net census undercount and increased for other U.S. citizens living abroad and for populations in the geographic areas covered by the OASDI program but not included in the U.S. population. This population was then projected using assumed rates of birth, death, marriage, and divorce and assumed levels of migration.

Historically, fertility rates in the United States have fluctuated widely. The total fertility rate is defined to be the average number of children that would be born to a woman in her lifetime if she were to experience the birth rates by age observed in, or assumed for, the selected year, and if she were to survive the entire child-bearing period. The total fertility rate decreased from 3.3 children per woman after World War I to 2.1 during the Great Depression, rose to 3.7 in 1957, and then fell to 1.7 in 1976. Since then, it has risen to a level currently estimated at 2.08 for 1990 and 2.06 for 1991.

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

Actuarial Analysis

continued relatively low fertility rate. These trends include the rising percentages of women who have never married, of women who are divorced, and of young women who are in the labor force. Based on consideration of these factors, ultimate total fertility rates of 2.2, 1.9, and 1.6 children per woman were selected for alternatives I, II, and III, respectively. For each alternative, the total fertility rate is assumed to reach its ultimate level in 2017. A rate of 2.1 would ultimately result in a nearly constant population if net immigration were zero and if death rates were constant.

Historically, death rates in the United States, calculated using final data for 1900-89 and provisional data for 1990 and 1991, show a steady declining trend. The age-sex-adjusted death rate—which is calculated here as the crude rate that would occur in the enumerated total population as of April 1, 1980, if that population were to experience the death rates by age and sex for the selected year—declined at an average rate of 1.2 percent per year between 1900 and 1990. These reductions in death rates have resulted from many factors, including increased medical knowledge and availability of health-care services, and improvements in personal health-care practices such as diet and exercise. Based on consideration of the likelihood of continued 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 2017 and later. The intermediate set, which is used for alternative II, is considered to be the one closest to average expectations. Except for those causes of death which primarily affect workers and children, the average annual percentage reductions used for alternative I are smaller than those for alternative II, while those used for alternative III are greater. Between 1991 and 2017, the reductions in central death rates for alternative II are assumed to change gradually from the average annual reductions by age, sex, and cause of death observed between 1968 and 1989, to the ultimate annual percentage reductions by age, sex, and cause of death assumed for 2017 and later. Alternative I reductions are assumed to change gradually from 50 percent of the average annual reductions observed between 1968 and 1989, while alternative III reductions are assumed to change gradually from 150 percent of the average annual reductions observed between 1968 and 1989. The age-sex-adjusted death rate (for all causes combined) de-

clined at an average rate of 1.4 percent per year between 1968 and 1989.

After adjustment for changes in the age-sex distribution of the population, the resulting death rates were projected to decline at an average annual rate of about 0.3 percent, 0.6 percent, and 1.0 percent between 1989 and 2067 for alternatives I, II, and III, respectively.

For calendar years 1991 and 1992, the net legal immigration is assumed to be 528,000 and 630,000 persons per year, respectively. In addition, for these years the net other-than-legal immigration assumption is 200,000 persons per year, which is consistent with the estimates of net other-than-legal immigration made by the Bureau of the Census based on the 1990 Census. The Immigration Act of 1990 increased substantially the number of legal immigrants permitted starting in 1992. For calendar year 1993, net immigration is assumed to be 1,110,000, 845,000, and 675,000 persons per year for alternatives I, II, and III, respectively. Of these net numbers of immigrants, 760,000, 645,000, and 575,000, respectively, are assumed to be legal, and the remainders are assumed to be other-than-legal. As the 1990 legislation changes numbers to be admitted by calendar year, estimates for 1994, 1995 through 1999, and 2000 and later are used. Net immigration for 1994 is assumed to be 1,130,000, 860,000, and 700,000 persons per year for alternatives I, II, and III, respectively. Of these net numbers of immigrants, 780,000, 660,000, and 600,000, respectively, are assumed to be legal, and the remainders are assumed to be other-than-legal. Net immigration for 1995 through 1999 is assumed to be 1,150,000, 875,000, and 700,000 persons per year for alternatives I, II, and III, respectively. Of these net numbers of immigrants, 800,000, 675,000, and 600,000, respectively, are assumed to be legal, and the remainders are assumed to be other-than-legal. Net immigration for 2000 and later is assumed to be 1,100,000, 850,000, and 700,000 persons per year for alternatives I, II, and III, respectively. Of these net numbers of immigrants, 750,000, 650,000, and 600,000, respectively, are assumed to be legal, and the remainders are assumed to be other-than-legal.

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

Actuarial Analysis

and sex. Marriage and divorce rates were based on recent data from the National Center for Health Statistics.

TABLE II.H.1.—SOCIAL SECURITY AREA POPULATION AS OF JULY 1 AND DEPENDENCY RATIOS, BY ALTERNATIVE AND BROAD AGE GROUP, CALENDAR YEARS 1950-2070

Calendar year	Population (in thousands)				Dependency ratio	
	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
1970	80,672	113,184	20,920	214,776	.185	.898
1975	78,428	122,852	23,265	224,545	.189	.828
1980	74,550	134,393	26,143	235,086	.195	.749
1985	73,240	144,548	28,996	246,784	.201	.707
1990	75,097	152,350	31,831	259,278	.209	.702
Alternative I:						
1995	79,294	160,231	33,967	273,493	.212	.707
2000	82,776	169,499	34,798	287,072	.205	.694
2005	84,886	179,540	35,665	300,091	.199	.671
2010	86,775	188,446	38,106	313,326	.202	.663
2015	89,108	194,532	43,395	327,035	.223	.681
2020	92,738	197,930	50,053	340,721	.253	.721
2025	96,563	199,451	57,620	353,634	.289	.773
2030	99,876	201,988	63,649	365,513	.315	.810
2035	102,671	207,500	66,392	376,563	.320	.815
2040	105,485	214,806	66,910	387,201	.311	.803
2045	108,765	222,091	66,964	397,820	.302	.791
2050	112,352	228,325	68,036	408,713	.298	.790
2055	115,886	234,185	70,056	420,127	.299	.794
2060	119,213	240,265	72,721	432,200	.303	.799
2065	122,479	247,492	74,905	444,877	.303	.798
2070	125,889	255,136	76,916	457,941	.301	.795
Alternative II:						
1995	78,889	159,712	34,043	272,645	.213	.707
2000	81,180	167,918	35,170	284,268	.209	.693
2005	81,496	176,931	36,476	294,903	.206	.667
2010	80,955	184,850	39,389	305,193	.213	.651
2015	80,289	189,724	45,172	315,185	.238	.661
2020	80,708	191,288	52,376	324,372	.274	.696
2025	81,450	190,356	60,599	332,406	.318	.746
2030	81,772	189,824	67,385	338,980	.355	.786
2035	81,646	191,639	70,846	344,131	.370	.796
2040	81,567	194,619	71,916	348,102	.370	.789
2045	81,681	197,176	72,365	351,222	.367	.781
2050	81,981	198,135	73,712	353,827	.372	.786
2055	82,262	198,074	75,920	356,256	.383	.799
2060	82,409	197,684	78,650	358,743	.398	.815
2065	82,478	198,302	80,542	361,321	.406	.822
2070	82,585	199,273	81,969	363,826	.411	.826
Alternative III:						
1995	78,547	159,412	34,128	272,087	.214	.707
2000	79,765	166,877	35,549	282,191	.213	.691
2005	78,410	174,963	37,259	290,632	.213	.661
2010	75,588	182,147	40,620	298,355	.223	.638
2015	72,167	186,248	46,911	305,326	.252	.639
2020	69,803	186,480	54,728	311,011	.293	.668
2025	68,027	183,641	63,700	315,368	.347	.717
2030	66,070	180,565	71,416	318,051	.396	.761
2035	63,889	179,166	75,912	318,967	.424	.780
2040	61,898	178,369	77,970	318,236	.437	.784
2045	59,989	176,843	79,302	316,133	.448	.788

TABLE II.H.1.—SOCIAL SECURITY AREA POPULATION AS OF JULY 1 AND DEPENDENCY RATIOS, BY ALTERNATIVE AND BROAD AGE GROUP, CALENDAR YEARS 1950-2070 (Cont.)

Calendar year	Population (in thousands)			Total	Dependency ratio	
	Under 20	20-64	65 and over		Aged ¹	Total ²
Alternative III:(Cont.)						
2050.....	58,280	173,330	81,408	313,018	0.470	0.806
2055.....	56,697	168,369	84,240	309,306	.500	.837
2060.....	55,145	162,808	87,385	305,338	.537	.875
2065.....	53,613	158,438	89,219	301,270	.563	.902
2070.....	52,151	154,655	90,215	297,021	.583	.921

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

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

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

2. Covered Population

The number of covered workers in a year is defined as the number of persons who, at any time during the year, have OASDI taxable earnings. Projections of the numbers of covered workers were made by applying projected coverage rates to the projected Social Security Area population. The coverage rates—i.e., the number of covered workers in the year, as a percentage of the population as of July 1—were determined by age and sex using projected labor force participation rates and unemployment rates, and their historical relationships to coverage rates. In addition, the coverage rates were adjusted to reflect the increase in coverage of (1) State and local government employment that will result from the Omnibus Budget Reconciliation Act of 1990 and (2) Federal civilian employment that will result from the 1983 Social Security Amendments.

Labor force participation rates were projected by age and sex, taking into account projections of the percentage of the population that is married, the percentage of the population that is disabled, the number of children in the population, the level of retirement benefits, and the state of the economy. All of these factors vary by alternative. For men, the projected age-adjusted labor force participation rates for the year 2070 for alternatives I, II, and III are 0.7, 1.3, and 2.0 percentage points lower, respectively, than the 1992 level of 76.1 percent. For women, the projected age-adjusted labor force participation rates increase for alternatives I and II and decrease for alternative III. The projected rates for 2070 are 1.9, 0.7, and -1.1

Actuarial Analysis

percentage points, respectively, different from the 1992 level of 58.0 percent.

The total age-sex-adjusted unemployment rate averaged 5.7 percent for the last 30 years 1963-92 and 6.4 percent for the last 10 years 1983-92. The ultimate total age-sex-adjusted unemployment rate is assumed to be 5, 6, and 7 percent for alternatives I, II, and III, respectively. Because the unemployment rate depends on the state of the economy, cyclical trends are reflected in the short-range period. Unemployment levels off to the assumed ultimate age-sex-adjusted rate by the year 2003, for each of the three alternatives.

The projected age-adjusted coverage rate for men changes from its 1992 level of 72.6 percent to 73.9, 73.0, and 71.9 percent in 2070 on the basis of alternatives I, II, and III, respectively. For women, it changes from its 1992 level of 59.2 percent to 61.2, 59.5, and 57.3 percent for alternatives I, II, and III, respectively.

3. Average Earnings, Inflation, and Real Interest Rate

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

Increases in average earnings were projected in two components—average earnings of wage-and-salary workers, usually referred to as average wages (and shown for OASDI covered employment in table II.D.1 of this report), and average net earnings of self-employed persons. Each of these was subdivided into increases in real average earnings and increases in the CPI. For simplicity, real-earnings increases are expressed in the form of real-earnings differentials—i.e.,

the percentage increase in average nominal earnings, minus the percentage increase in the CPI.

The assumed ultimate increases in average real earnings are based on analysis of trends in productivity gains and the factors linking productivity gains with increases in average real earnings. For the 40 years 1952-91, annual increases in productivity for the total U.S. economy averaged 1.7 percent, the result of average annual increases of 2.5, 2.4, 1.2, and 0.8 percent for the 10-year periods 1952-61, 1962-71, 1972-81 and 1982-91, respectively. Meanwhile, the average annual rate of change in average real earnings was an increase of 1.1 percent for the 40 years 1952-91, the result of average annual increases of 2.2, 2.1, -1.0, and 1.0 percent, respectively, for the aforementioned 10-year periods. The change in the linkage between annual increases in productivity and real earnings averaged -0.6 percent for the 40 years 1952-91, and -0.3, -0.3, -2.2, and 0.2 percent, respectively, for the aforementioned 10-year periods. The change in the linkage reflects changes in such factors as the average number of hours worked per year, labor's share of total output, the proportion of employee compensation paid as wages, and price adjustment due to the ratio of the GDP implicit price deflator to the CPI.

The average annual rate of change in the average real wage in OASDI covered employment was nearly 1.3 percent over the 40 years 1952-91. However this rate of change varied considerably over this period. The average annual rates of change for the 10 year-periods 1952-61, 1962-71, 1972-81, and 1982-91 were 2.5 percent, 1.8 percent, -0.2 percent and 1.0 percent, respectively.

The ultimate annual increases in productivity for all sectors—wage-and-salary workers, self-employed persons, and the total economy—are assumed to be 1.9, 1.5, and 1.2 percent for alternatives I, II, and III, respectively. The corresponding ultimate annual rates of change in the linkage for wage-and-salary workers are assumed to be declines of 0.2, 0.4, and 0.6 percent for alternatives I, II, and III, respectively. This linkage is made up of assumed annual decreases of 0.1, 0.2, and 0.3 percent in average hours worked per year, and 0.1, 0.2, and 0.3 percent annual declines in wages as a share of compensation, for alternatives I, II, and III, respectively. No ultimate change is assumed for the historically relatively stable ratio of employee compensation to GDP. The resulting ultimate real-wage differentials are 1.7, 1.1, and 0.6 percent. Ultimate annual declines in

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

Historically, the CPI has increased, on average, by 4.2 percent for the last 40 years 1953-92, 5.2 percent for the last 30 years 1963-92, 6.1 percent for the last 20 years 1973-92, and 3.6 percent for the last 10 years 1983-92. The 6.1 percent increase during 1973-92 reflects sharp increases in oil prices and their subsequent effect on the overall economy. The ultimate average annual CPI increases of 3.0, 4.0, and 5.0 percent for alternatives I, II, III, respectively, were chosen to include a reasonable range of possible future experiences. The GDP implicit price deflator has increased by 4.2 percent annually for the last 40 years 1953-92, 5.1 percent annually for the last 30 years 1963-92, 6.0 percent annually for the last 20 years 1973-92, and 4.2 percent annually for the last 10 years 1983-92. For this Trustees Report, increases in the GDP implicit price deflator are assumed to be slower by about 0.2 percent, 0.3 percent, and 0.5 percent annually than increases in the CPI-W for alternatives I, II, and III respectively, for the first 10 projection years 1993-2002. The assumed differential between increase in the GDP implicit price deflator and increase in the CPI-W reflects the anticipation of three trends for the first 10 projection years 1993-2002. These are: (1) relatively slower increases in computer prices, which are weighted more heavily in the implicit price deflator, (2) relatively faster increases in energy prices which are weighted more heavily in the CPI, and (3) relatively faster increases in health service prices, which are a larger component of the CPI. However, ultimate annual rates of increase in the GDP implicit price deflator are assumed to be the same, for each alternative, as for the CPI-W.

The ultimate increases in average annual wages in covered employment are assumed to be 4.7, 5.1, and 5.6 percent, for alternatives I, II, and III, respectively. These were obtained, for each alternative, by adding the assumed annual percentage increase in the CPI to the assumed real-wage differential. Ultimate increases in average wages

and earnings for the U.S. economy are very similar to those assumed for average wages in covered employment.

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

In developing a reasonable range of assumed future real interest rates for the three alternatives, historical experience was examined for the last 40 years, 1952-91, and for each of the 10-year subperiods, 1952-61, 1962-71, 1972-81, and 1982-91. For the 40-year period, the real interest rate averaged 1.9 percent per year. For the four 10-year subperiods, the real interest rates averaged 0.3, 1.7, -0.4, and 6.0 percent per year, respectively. The assumed ultimate real interest rates are 3.0 percent, 2.3 percent, and 1.5 percent for alternatives I, II, and III, respectively. Rates are assumed to trend toward these ultimate values from recent high levels during the next 10 years.

4. Taxable Payroll and Taxes

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

In practice, the taxable payroll is calculated as a weighted average of the earnings on which employees, employers, and self-employed persons make contributions to the OASDI program. The weighting takes into account the lower tax rates, as compared to the combined employee-employer rate, which apply to multiple-employer "excess wages," and which did apply, before 1984, to net earnings from self-employment and, before 1988, to tips. For 1983 and later, taxable payroll also includes deemed wage credits for military service. Estimates of taxable earnings for employees, employers, and the self-employed were developed from corresponding estimates of earnings in the U.S. economy, by means of factors which adjust for various

Actuarial Analysis

differences in these measures. The factors adjust total U.S. earnings by removing earnings from noncovered employment, adding earnings from various outlying areas which are covered by Social Security but are not included in published "U.S." data, and removing earnings above the taxable earnings base.

For the 1993 report, a larger than expected decrease in the estimated ratio of taxable earnings to earnings in OASDI covered employment, which was largely due to a significant decrease in the ratio of covered self-employment income to self-employment income for 1990 and 1991, along with the assumption that this ratio will stay at that lower level results in a decrease in the projected level of taxable payroll as compared with estimates in the 1992 report.

Estimates of taxes collected were developed from the corresponding estimates of taxable earnings by applying the employee, employer, or self-employed tax rate, and by taking into account the lag time from the incurrence of tax liability to the collection of taxes.

5. Insured Population

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

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

Projections of the percentage of fully insured persons who are also disability insured were made by age and sex based on past and projected coverage rates, the requirement for disability insured status, and their historical relationships. Finally, the fully insured and disability insured populations were developed from the projected total population by applying the appropriate percentages.

Under this procedure, the percentage of the Social Security Area population aged 62 and over that is fully insured is projected to increase from 77.5 on January 1, 1992, to 91.0, 90.8, and 90.2 on January 1, 2067, based on alternatives I, II, and III, respectively. The increase for females is projected to be significant, while there is a decrease for males. Based on alternative II, for example, the percentage for males is projected to decrease slightly during this period from 93.2 to 92.8, while that for females is projected to increase substantially from 66.2 to 89.2.

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

6. Old-Age and Survivors Insurance Beneficiaries

The numbers of OASI beneficiaries were 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 numbers of beneficiaries were also projected by marital status.

For the short-range period, the numbers of retired-worker beneficiaries were developed by applying award rates to the aged fully insured population less those persons entitled to retired-worker or widow(er)'s benefits, and by applying termination rates to the numbers of persons already receiving retired-worker benefits. For the long range, the numbers of retired-worker beneficiaries who were not previously converted from disabled-worker beneficiary status were projected as a percentage of the "exposed population," i.e., the aged fully insured population less those persons entitled to or converted from disability benefits and those insured persons entitled to widow(er)'s benefits. The percentages for ages 70 and over were assumed to be

Actuarial Analysis

nearly 100, because the retirement earnings test and delayed retirement credit do not apply after age 70. The percentages for ages 62 through 69 were adjusted in accordance with observed historical and projected short-range trends, and, for each year of attainment of age 62, as a function of the ratio of the monthly benefit amount payable at each age of entitlement to the amount payable at age-70 entitlement. This resulted in a gradual downward adjustment in award rates as the increases in the delayed retirement credit become effective and, beginning in 2000, during the years in which the normal retirement age is scheduled to increase. The net effect of these adjustments is to decrease the percentages of eligible persons who are receiving benefits at each age 62 through 69 to ultimate values, which are reached in 2030. The numbers of retired-worker beneficiaries who are converted from disabled-worker beneficiaries were calculated separately in a manner consistent with the calculation of disabled-worker beneficiaries.

The numbers of aged-spouse beneficiaries were estimated from the population projected by age and sex. The benefits of aged-spouse beneficiaries are based on the earnings records of their husbands or wives, who are referred to as “wage earners.” In the short-range period, a regression equation was used to project the number of aged-spouse beneficiaries, as a proportion of the aged female or male population not receiving retired-worker or aged-widow(er) benefits. In the long-range period, aged-spouse beneficiaries were estimated from the population projected by age, sex, and marital status. To the numbers of spouses aged 62 and over in the population, a series of factors were applied, representing the probabilities that the spouse and the wage earner meet all of the conditions of eligibility—i.e., the probabilities that (1) the wage earner is 62 or over, (2) the wage earner is insured, (3) the wage earner is receiving benefits, (4) the spouse is not receiving a benefit for the care of an entitled child, (5) the spouse is not insured, (6) the spouse is not eligible to receive a significant government pension based on earnings in noncovered employment, and (7) a residual factor.

In addition, the same factors were applied to the numbers of divorced persons aged 62 and over in the population, with three differences. First, an additional factor is required to reflect the probability that the person’s former wage-earner spouse is still alive (otherwise, the person may be entitled to a divorced widow(er)’s benefit). Second, a

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

The projected numbers of children under age 18, and students aged 18, who are eligible for benefits as children of retired-worker beneficiaries, were based on the projected numbers of children in the population. In the short-range period, a factor was applied, representing the probability that both parents are alive. A regression equation was then used to project the number of children of retired-worker beneficiaries. In the long-range period, entitled children were projected separately by sex of the wage-earner parent. To the numbers of children in the population, factors were applied representing the probabilities that the parent is alive, aged 62 or over, insured, and receiving a retired-worker benefit. Another factor was applied representing the probability that the child is not entitled to a benefit based on the other parent's earnings. For children aged 18, a factor was applied representing the probability that the child is attending a secondary school. The numbers of disabled children aged 18 and over of retired-worker beneficiaries were projected from the adult population in a similar manner, with the inclusion of a factor representing the probability of being disabled since childhood.

In the short-range period, the numbers of young-spouse beneficiaries were projected as a proportion of the projected numbers of child beneficiaries who are either under age 16 or disabled. In the long-range period, young-spouse beneficiaries were projected as a proportion of the projected numbers of child beneficiaries of retired workers, taking into account projected changes in average family size.

The numbers of aged-widow(er) beneficiaries were projected from the population by age and sex. In the short-range period, a regression equation projected the number of aged-widow(er) beneficiaries, as a proportion of the aged female or male population not receiving retired-worker or aged-spouse benefits. In the long-range period, aged-widow(er) beneficiaries were projected from the population by age, sex, and marital status. Four factors were applied to the numbers of widow(er)s in the population aged 60 and over. These factors represent the probabilities that (1) the deceased wage earner was fully

Actuarial Analysis

insured at death, (2) the widow(er) is not receiving a benefit for the care of an entitled child, (3) the widow(er) is not fully insured, and (4) the widow(er)'s benefits are not withheld because of receipt of a significant government pension based on earnings in noncovered employment. In addition, some insured widow(er)s who had not applied for their retired-worker benefits are assumed to receive widow(er) benefits. Also, the same factors were applied to the numbers of divorced persons aged 60 and over in the population, with additional factors representing the probability that the person's former wage-earner spouse is deceased and that the marriage was at least 10 years in duration. In the short-range period, the numbers of disabled-widow(er) beneficiaries were estimated as a proportion of the female or male population aged 50-64. In the long-range period, the numbers were projected for each age 50 through 64 as a percentage of the widowed and divorced populations, adjusted for the insured status of the deceased spouse and the prevalence of disability.

The projected numbers of children under age 18, and students aged 18, who are eligible for benefits as survivors of deceased workers, were based on the projected numbers of children in the population whose mothers or fathers are deceased. In the short-range period, a regression equation was used to project the number of minor-child-survivor beneficiaries as a percentage of such orphaned children. In the long-range period, the numbers of child-survivor beneficiaries were 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 being replaced by a factor that represented the probability that the parent is deceased.

In the short-range period, the numbers of mother-survivor and father-survivor beneficiaries were projected from the numbers of child-survivor beneficiaries who are either under age 16 or disabled. In the long-range period, mother-survivor and father-survivor beneficiaries were estimated from the numbers of child-survivor beneficiaries, taking into account projected changes in average family size.

The numbers of parent-survivor beneficiaries were projected based on the historical pattern of the numbers of such beneficiaries.

Table II.H.2 shows the projected numbers of beneficiaries under the OASI program. Included among the beneficiaries who receive retired-worker benefits are some persons who also receive a residual

Assumptions & Methods

benefit consisting of the excess of an auxiliary benefit over their retired-worker benefit. Estimates of the numbers of such residual payments were made separately for spouses and widow(er)s.

TABLE II.H.2.—OASI BENEFICIARIES WITH MONTHLY BENEFITS IN CURRENT-PAYMENT STATUS AS OF DECEMBER 31 BY ALTERNATIVE, CALENDAR YEARS 1945-2070

Calendar year	Retired workers and auxiliaries			Survivors				Total
	Worker	Wife-husband	Child	Widow-widower	Mother-father	Child	Parent	
	[In thousands]							
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	16,588	2,867	643	3,889	582	2,919	21	27,509
1980	19,562	3,016	639	4,411	562	2,610	15	30,814
1985	22,432	3,069	457	4,863	372	1,917	10	33,120
1986	22,987	3,088	450	4,931	350	1,875	9	33,690
1987	23,440	3,090	440	4,984	329	1,836	8	34,126
1988	23,858	3,086	432	5,029	318	1,810	7	34,539
1989	24,327	3,093	423	5,071	312	1,780	6	35,012
1990	24,838	3,101	422	5,111	304	1,776	6	35,559
1991	25,289	3,104	426	5,158	301	1,791	5	36,074
1992	25,758	3,112	432	5,205	294	1,808	5	36,614
Alternative I:								
1995	26,628	3,122	447	5,375	301	1,878	4	37,754
2000	27,753	3,095	505	5,570	312	2,002	3	39,239
2005	29,153	2,918	563	5,688	290	2,091	3	40,706
2010	32,209	2,685	625	5,810	278	2,111	3	43,720
2015	37,771	2,466	704	5,937	266	2,135	3	49,282
2020	44,570	2,357	783	6,066	258	2,182	3	56,219
2025	50,795	2,331	840	6,195	262	2,254	3	62,679
2030	55,406	2,276	886	6,238	268	2,330	3	67,407
2035	58,002	2,203	926	6,205	273	2,392	3	70,003
2040	58,636	2,111	948	6,133	277	2,437	3	70,545
2045	59,100	2,076	976	6,081	280	2,483	3	71,000
2050	60,215	2,090	1,009	6,046	286	2,537	3	72,186
2055	62,229	2,162	1,057	6,048	293	2,595	3	74,387
2060	64,473	2,235	1,100	6,082	299	2,652	3	76,845
2065	66,448	2,292	1,134	6,163	305	2,705	3	79,051
2070	68,353	2,344	1,164	6,292	310	2,758	3	81,224
Alternative II:								
1995	26,674	3,119	445	5,372	301	1,877	4	37,793
2000	28,021	3,111	501	5,602	309	1,986	3	39,532
2005	29,792	3,018	561	5,696	294	2,009	3	41,373
2010	33,193	2,832	618	5,811	277	1,939	3	44,673
2015	39,126	2,660	687	5,927	267	1,878	3	50,548
2020	46,377	2,586	750	6,041	264	1,849	3	57,871
2025	53,111	2,593	789	6,164	267	1,848	3	64,775
2030	58,359	2,568	815	6,221	267	1,853	3	70,086
2035	61,566	2,516	835	6,230	264	1,853	3	73,266
2040	62,696	2,431	836	6,223	259	1,841	3	74,287
2045	63,460	2,405	838	6,242	254	1,823	3	75,025
2050	64,773	2,432	845	6,264	250	1,808	3	76,374
2055	66,887	2,532	866	6,288	247	1,793	3	78,616
2060	69,078	2,630	883	6,296	244	1,778	3	80,911
2065	70,736	2,696	891	6,321	240	1,760	3	82,645
2070	72,054	2,737	895	6,375	236	1,742	3	84,041

TABLE II.H.2.—OASI BENEFICIARIES WITH MONTHLY BENEFITS IN CURRENT-PAYMENT STATUS AS OF DECEMBER 31 BY ALTERNATIVE, CALENDAR YEARS 1945-2070 (Cont.)

[In thousands]

Calendar year	Retired workers and auxiliaries			Survivors				Total
	Worker	Wife-husband	Child	Widow-widower	Mother-father	Child	Parent	
Alternative III:								
1995	26,733	3,119	445	5,374	300	1,871	4	37,845
2000	28,290	3,120	498	5,625	308	1,975	3	39,818
2005	30,377	3,115	559	5,711	313	1,986	3	42,065
2010	34,062	2,982	608	5,824	290	1,839	3	45,607
2015	40,341	2,869	666	5,928	266	1,677	3	51,750
2020	48,060	2,844	715	6,020	252	1,563	3	59,456
2025	55,332	2,897	734	6,127	246	1,501	3	66,840
2030	61,381	2,931	741	6,180	238	1,462	3	72,936
2035	65,495	2,936	742	6,211	228	1,430	3	77,046
2040	67,514	2,895	724	6,251	216	1,391	3	78,993
2045	68,976	2,914	705	6,325	204	1,343	3	80,469
2050	70,892	2,990	690	6,386	193	1,294	3	82,447
2055	73,460	3,154	690	6,414	183	1,246	3	85,149
2060	75,922	3,307	688	6,374	173	1,199	3	87,667
2065	77,507	3,402	679	6,321	163	1,152	3	89,227
2070	78,410	3,440	667	6,286	154	1,107	3	90,068

Note: The numbers of beneficiaries do not include certain uninsured persons, most of whom both attained age 72 before 1968 and have fewer than 3 quarters of coverage, in which cases the costs are reimbursed by the general fund of the Treasury. The number of such uninsured persons was 3,682 as of December 31, 1992, and is estimated to be fewer than 500 by the turn of the century. Totals do not necessarily equal the sums of rounded components.

7. Disability Insurance Beneficiaries

The numbers of DI beneficiaries were projected for each type of benefit separately, by the sex of the worker on whose earnings the benefits are based, and the age of the beneficiary. The numbers of disabled-worker beneficiaries were projected from the estimated numbers of such beneficiaries entitled on December 31, 1991, by adding new entitlements and subtracting terminations. The starting numbers of entitled disabled-worker beneficiaries were estimated by age, sex, and duration of entitlement, from the tabulated number of disabled-worker beneficiaries in current-payment status on December 31, 1991. The numbers of new entitlements during each year were projected by applying assumed disability incidence rates. Incidence rates by age and sex were applied to the projected disability insured population (excluding those already entitled to disabled-worker benefits) to obtain new entitlements. The numbers of terminations were projected by applying assumed termination rates to the disabled-worker population. In the short-range period, the numbers of terminations were projected by applying assumed termination rates by reason—death, recovery, and all other—and by age and sex, to the entitled disabled-worker population. In the long-range period, the

numbers of terminations were projected by applying assumed death rates and recovery rates, by age, sex, and duration of entitlement, to the entitled disabled-worker population. The numbers of terminations were then increased, in both the short-range and long-range periods, by the numbers of disabled-worker beneficiaries who would be automatically converted to retired-worker beneficiaries at the normal retirement age (currently, age 65).

Disability incidence rates declined rapidly from historically high levels for 1974-75 to a level less than half as large by the year 1982. From 1982 through 1986, incidence rates increased steadily, regaining about one-fifth of the decline from the prior period. Between 1986 and 1989, incidence rates remained fairly steady. From 1989 to 1992, incidence rates again increased at a rapid pace, reaching a level about midway between the high rates of 1974-75 and the low rates for 1982.

Assumed future levels for disability incidence rates are determined in two stages: (1) rates are first projected from recent levels based on past trends and future expectations, as if the increases scheduled in present law for the normal retirement age (NRA) would not occur, and (2) rates for the year 2000 and later are then adjusted to reflect the scheduled increase in the NRA, which tends to increase incidence rates for persons aged 60 through 64 established in the first stage as well as establishing incidence rates up to the scheduled NRA (ultimately 67).

For the intermediate alternative II assumptions, age-sex-adjusted incidence rates are projected to increase slightly before declining toward their historical average. On a gross basis, the incidence rates are projected to continue increasing over the next 10 years due to the growing proportion of insured workers at the higher ages. Gross rates projected under the first stage increase from 1992 levels by about 10 percent over the next 10 years, reaching a level of about 5.9 per thousand persons exposed (defined as the number of persons who are disability insured but are not currently entitled to disabled worker benefits).

Further increases in incidence rates over age 60 along with rates assumed for persons aged 66 and 67, due to the scheduled increase in the NRA are reflected in the second stage. These adjustments contribute to the overall rise in the gross disability incidence rate

Actuarial Analysis

from a level of 5.3 per thousand exposed for 1992 to an ultimate rate of 6.9 per thousand exposed by the year 2026, at which time the scheduled increase in the NRA will be complete.

For alternative I, the gross disability incidence rate is assumed to decline by about 8 percent over the next 10 years. The 2026 gross incidence rate is assumed to be 5.8 per thousand exposed. For alternative III, the gross disability incidence rate is assumed to increase by about 36 percent over the next 10 years, to a level comparable to the peak experience for 1974-75. The gross incidence rate under alternative III is assumed to reach about 8.8 per thousand exposed by 2026.

In the short-range period, the termination rates were projected by reason—death, recovery, and all other—and by age and sex. For alternative II, the death rates were projected to remain constant, while the rates for recovery and all other terminations were projected to increase from the relatively low levels of 1990-92, by about 30 percent. For alternative III, the death rates decline by about 10 percent, while the rates for recovery and all other terminations increase more slowly and to lower levels. For alternative I, the death rates increase by about 10 percent, while the rates for recovery and all other terminations increase more quickly and to higher levels.

In the long-range period, the death rates and recovery rates were projected by age, sex, and duration of entitlement. For all alternatives, the death rates are assumed to decline steadily throughout the 75-year projection period. For alternative II, they reach levels in 2070 approximately 30 percent lower for males and approximately 20 percent lower for females than those experienced by disabled-worker beneficiaries during 1977-80, the most recent period for which detailed data are available. The recovery rates are assumed to increase from 1990 levels until 2008, when they attain ultimate levels about 5 percent higher than those experienced during the period 1977-80, thereby reflecting the estimated effect of the periodic reviews required by provisions of law first enacted in 1980, and amended in 1983, 1984, and 1990.

For alternative I, the death rates in 2070 are assumed to be roughly 20 percent lower for males and approximately 10 percent lower for females than those experienced by disabled-worker beneficiaries during 1977-80, and the recovery rates are assumed to increase to levels

Assumptions & Methods

25 percent higher than those of the same period. For alternative III, the death rates in 2070 are assumed to be about 45 percent lower for males and approximately 35 percent lower for females than those experienced during 1977-80, and recovery rates are assumed to be 15 percent lower than those experienced during 1977-80.

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

In the long-range period, the projected numbers of minor child and student beneficiaries were based on the projected numbers of children in the population by age. To these numbers of children were applied factors representing the probability that either of their parents is insured and disabled. The numbers of disabled children aged 18 and over were projected as a function of the numbers of disabled-worker beneficiaries and the size of the adult population.

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

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

Table II.H.3 shows the projected numbers of beneficiaries under the DI program.

Actuarial Analysis

TABLE II.H.3.—DI BENEFICIARIES WITH MONTHLY BENEFITS IN CURRENT-PAYMENT STATUS AS OF DECEMBER 31 BY ALTERNATIVE, CALENDAR YEARS 1960-2070

[In thousands]

Calendar year	Disabled worker	Auxiliaries		Total
		Wife-husband	Child	
Historical data:				
1960	455	77	155	687
1965	988	193	558	1,739
1970	1,493	283	889	2,665
1975	2,489	453	1,411	4,352
1980	2,859	462	1,358	4,678
1985	2,656	306	945	3,907
1986	2,727	301	965	3,993
1987	2,786	291	968	4,045
1988	2,830	281	963	4,074
1989	2,895	271	962	4,129
1990	3,011	266	989	4,266
1991	3,195	266	1,052	4,513
1992	3,468	271	1,151	4,890
Alternative I:				
1995	4,100	270	1,305	5,675
2000	4,864	265	1,395	6,524
2005	6,276	301	1,722	8,299
2010	6,852	283	1,590	8,724
2015	6,888	243	1,434	8,566
2020	6,726	221	1,339	8,287
2025	6,810	227	1,326	8,363
2030	6,661	220	1,353	8,235
2035	6,564	217	1,389	8,170
2040	6,648	215	1,426	8,289
2045	7,027	225	1,471	8,722
2050	7,304	233	1,521	9,058
2055	7,563	243	1,578	9,385
2060	7,693	249	1,634	9,576
2065	7,907	255	1,688	9,850
2070	8,204	262	1,740	10,206
Alternative II:				
1995	4,317	285	1,374	5,976
2000	5,548	302	1,576	7,426
2005	6,725	342	1,824	8,890
2010	7,560	341	1,708	9,609
2015	7,826	316	1,554	9,697
2020	7,810	307	1,451	9,568
2025	7,985	324	1,419	9,728
2030	7,834	320	1,420	9,575
2035	7,709	316	1,433	9,458
2040	7,781	312	1,443	9,535
2045	8,185	324	1,452	9,961
2050	8,427	331	1,463	10,221
2055	8,591	342	1,478	10,411
2060	8,526	342	1,491	10,360
2065	8,539	342	1,503	10,383
2070	8,637	344	1,510	10,491

TABLE II.H.3.—DI BENEFICIARIES WITH MONTHLY BENEFITS IN CURRENT-PAYMENT STATUS AS OF DECEMBER 31 BY ALTERNATIVE, CALENDAR YEARS 1960-2070 (Cont.)

[In thousands]

Calendar year	Disabled worker	Auxiliaries		Total
		Wife-husband	Child	
Alternative III:				
1995	4,519	299	1,438	6,256
2000	6,390	352	1,806	8,548
2005	7,426	412	2,004	9,841
2010	8,710	446	1,929	11,084
2015	9,411	449	1,793	11,654
2020	9,719	461	1,690	11,870
2025	10,121	497	1,638	12,256
2030	10,019	496	1,610	12,126
2035	9,890	489	1,595	11,974
2040	9,964	478	1,573	12,015
2045	10,426	489	1,541	12,457
2050	10,610	494	1,505	12,609
2055	10,618	502	1,475	12,595
2060	10,235	489	1,444	12,167
2065	9,936	474	1,414	11,823
2070	9,749	463	1,382	11,594

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

8. Average Benefits

Average benefits were projected by type of benefit based on recent historical averages, projected average Primary Insurance Amounts (PIAs), and projected ratios of average benefits to average PIAs. Average PIAs were calculated from projected distributions of beneficiaries by duration from year of award, average awarded PIAs, and increases thereto since the year of award, reflecting automatic benefit increases, recomputations to reflect additional covered earnings, and other factors. Average awarded PIAs were calculated from projected earnings histories, which were developed from the actual earnings histories associated with a sample of awards made in 1988.

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

9. Benefit Payments

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

Actuarial Analysis

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

Lump-sum death payments were calculated as the product of (1) the number of such payments, which was projected on the basis of the assumed death rates, the projected fully insured population, and the estimated percentage of the fully insured population that would qualify for benefits, and (2) the amount of the lump-sum death payment, which is \$255 (unindexed in future years).

10. Administrative Expenses

The projection of administrative expenses through 2002 was based on assumed increases in average wages, increases in the CPI, and increases in the number of beneficiaries. For years after 2002, administrative expenses are assumed to increase because of increases in the numbers of beneficiaries and increases in average wages which will more than offset assumed improvements in administrative productivity.

11. Railroad Retirement Financial Interchange

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

The effect of the financial interchange with the Railroad Retirement program was evaluated on the basis of trends similar to those used in estimating the cost of OASDI benefits. The resulting effect was

annual short-range costs of about \$3-5 billion and a long-range summarized cost of 0.03 percent of taxable payroll to the OASDI program.

12. Benefits to Uninsured Persons

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

13. Military-Service Transfers

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

14. Income From Taxation of Benefits

Under present law, the OASI and DI Trust Funds are credited with the additional income taxes attributable to the partial taxation of

Actuarial Analysis

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

III. APPENDICES

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

In this appendix, long-range actuarial estimates for the OASDI and Hospital Insurance (HI) programs are combined to facilitate analysis of the adequacy of the combined income and assets of the trust funds relative to their combined expenditures. Combining cost and income rates as percentages of taxable payroll requires a note of caution. The taxable payrolls for the HI program are larger than those estimated for the OASDI program because of a larger contribution and benefit base beginning in 1991 and more extensive coverage of government and railroad employment. Therefore a cost rate of a given size represents more cost in dollars under the HI program than under the OASDI program. Even with this difference, combined OASDI and HI rates shown in this appendix are computed by adding the separately derived rates for the programs. The resulting combined rates may be interpreted as those applicable to the taxable payroll in the amount of the OASDI payroll, with the separate HI rates being additionally applicable to the excess of the HI payroll over the OASDI payroll.

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

As with the OASI and DI Trust Funds, income to the HI Trust Fund comes primarily from contributions paid by employees, employers, and self-employed persons. The combined OASDI and HI contribution rate for employees and their employers is often referred to as the FICA tax, because it is authorized by the Federal Insurance Contributions Act. Contribution rates for the OASDI and HI programs are shown in table III.A.1.

Appendices

TABLE III.A.1.—CONTRIBUTION RATES FOR THE OASDI AND HI PROGRAMS

[In percent]

Calendar years	Employees and employers, each			Self employed		
	OASDI	HI	Com- bined	OASDI	HI	Com- bined
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 ¹	5.70	1.35	7.05	11.40	2.70	14.10
1986-87 ¹	5.70	1.45	7.15	11.40	2.90	14.30
1988-89 ¹	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

¹See section entitled "Description of the Trust Funds" for description of tax credits allowed against the combined OASDI and HI taxes on net earnings from self-employment in 1984-89.

Table III.A.2 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 sets of assumptions, alternatives I, II, and III, described earlier in this report. Income rates exclude interest earned on trust fund assets. Table III.A.2 also shows the difference between income rates and cost rates, called balances. Estimates shown for the combined trust funds are theoretical because no authority currently exists for transferring assets from one trust fund to another.

Under all three sets of assumptions, combined OASDI and HI cost rates are projected to rise above current levels, with the sharpest increase occurring during the period 2010-2030. Under the more pessimistic set of assumptions, alternative III, annual deficits are projected to occur within the next 3 years, and to continue for the remainder of the 75-year projection period. Cost rates are projected to rise to about three and one-half times their current level by the end of the projection period. Under the intermediate alternative II assumptions, annual deficits begin by the year 1998, with cost rates doubling by the end of the projection period. Under the more optimistic assumptions, alternative I, cost rates are projected to increase by about 30 percent, with annual deficits beginning before the year 2020.

TABLE III.A.2.—COMPARISON OF ESTIMATED INCOME RATES AND COST RATES¹ FOR OASDI AND HI BY ALTERNATIVE, CALENDAR YEARS 1993-2070

[As a percentage of taxable payroll¹]

Calendar year	OASDI			HI			Combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative I:									
1993....	12.63	11.48	1.15	2.90	3.17	-0.27	15.53	14.66	0.87
1994....	12.63	11.26	1.37	2.90	3.32	-0.42	15.53	14.58	.95
1995....	12.58	11.05	1.54	2.90	3.44	-.54	15.48	14.49	.99
1996....	12.62	10.87	1.74	2.90	3.55	-.65	15.52	14.43	1.09
1997....	12.61	10.72	1.89	2.90	3.62	-.72	15.51	14.34	1.17
1998....	12.61	10.58	2.03	2.90	3.68	-.78	15.51	14.26	1.24
1999....	12.60	10.47	2.13	2.90	3.75	-.85	15.50	14.22	1.28
2000....	12.60	10.37	2.23	2.90	3.81	-.91	15.50	14.18	1.32
2001....	12.60	10.26	2.33	2.90	3.87	-.97	15.50	14.14	1.36
2002....	12.60	10.17	2.43	2.90	3.93	-1.03	15.50	14.09	1.40
2005....	12.67	10.02	2.65	2.90	4.07	-1.17	15.57	14.09	1.48
2010....	12.80	10.13	2.67	2.90	4.21	-1.31	15.70	14.34	1.36
2015....	12.89	10.84	2.05	2.90	4.51	-1.61	15.79	15.34	.45
2020....	12.94	11.87	1.07	2.90	4.69	-1.79	15.84	16.56	-.72
2025....	12.99	12.77	.22	2.90	4.92	-2.02	15.89	17.69	-1.80
2030....	13.01	13.21	-.20	2.90	5.20	-2.30	15.91	18.41	-2.50
2035....	13.01	13.17	-.16	2.90	5.42	-2.52	15.91	18.59	-2.68
2040....	12.99	12.79	.21	2.90	5.61	-2.71	15.89	18.39	-2.50
2045....	12.98	12.48	.50	2.90	5.78	-2.88	15.88	18.25	-2.38
2050....	12.97	12.34	.63	2.90	5.90	-3.00	15.87	18.24	-2.37
2055....	12.97	12.37	.60	2.90	6.05	-3.15	15.87	18.42	-2.55
2060....	12.97	12.42	.55	2.90	6.24	-3.34	15.87	18.67	-2.79
2065....	12.97	12.41	.56	2.90	6.47	-3.57	15.87	18.88	-3.01
2070....	12.97	12.39	.58	2.90	6.71	-3.81	15.87	19.10	-3.23
Alternative II:									
1993....	12.63	11.63	1.00	2.90	3.21	-.31	15.53	14.84	.69
1994....	12.63	11.56	1.07	2.90	3.41	-.51	15.53	14.98	.56
1995....	12.61	11.53	1.08	2.90	3.60	-.70	15.51	15.14	.38
1996....	12.63	11.54	1.09	2.90	3.78	-.88	15.53	15.32	.21
1997....	12.63	11.55	1.08	2.90	3.91	-1.01	15.53	15.46	.06
1998....	12.62	11.57	1.05	2.90	4.05	-1.15	15.52	15.62	-.10
1999....	12.62	11.59	1.03	2.90	4.19	-1.29	15.52	15.78	-.25
2000....	12.62	11.61	1.02	2.90	4.32	-1.42	15.52	15.93	-.41
2001....	12.62	11.62	1.00	2.90	4.46	-1.56	15.52	16.08	-.56
2002....	12.62	11.62	1.00	2.90	4.59	-1.69	15.52	16.21	-.69
2005....	12.71	11.58	1.13	2.90	4.99	-2.09	15.61	16.57	-.96
2010....	12.86	11.79	1.08	2.90	5.57	-2.67	15.76	17.36	-1.59
2015....	12.97	12.68	.29	2.90	6.44	-3.54	15.87	19.11	-3.25
2020....	13.04	14.04	-1.00	2.90	7.31	-4.41	15.94	21.35	-5.41
2025....	13.10	15.35	-2.25	2.90	8.30	-5.40	16.00	23.65	-7.65
2030....	13.15	16.25	-3.10	2.90	9.31	-6.41	16.05	25.56	-9.52
2035....	13.17	16.63	-3.46	2.90	10.10	-7.20	16.07	26.73	-10.67
2040....	13.17	16.60	-3.43	2.90	10.61	-7.71	16.07	27.21	-11.14
2045....	13.17	16.63	-3.47	2.90	10.93	-8.03	16.07	27.57	-11.50
2050....	13.17	16.84	-3.67	2.90	11.17	-8.27	16.07	28.02	-11.94
2055....	13.19	17.26	-4.07	2.90	11.45	-8.55	16.09	28.71	-12.62
2060....	13.22	17.67	-4.46	2.90	11.81	-8.91	16.12	29.48	-13.37
2065....	13.23	17.95	-4.72	2.90	12.24	-9.34	16.13	30.19	-14.06
2070....	13.24	18.18	-4.94	2.90	12.72	-9.82	16.14	30.90	-14.76

Appendices

TABLE III.A.2.—COMPARISON OF ESTIMATED INCOME RATES AND COST RATES¹ FOR OASDI AND HI BY ALTERNATIVE, CALENDAR YEARS 1993-2070 (Cont.)

[As a percentage of taxable payroll¹]

Calendar year	OASDI			HI			Combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative III:									
1993 . . .	12.63	11.71	0.92	2.90	3.23	-0.33	15.53	14.94	0.60
1994 . . .	12.64	11.96	.68	2.90	3.50	-.60	15.54	15.46	.08
1995 . . .	12.66	12.11	.55	2.90	3.77	-.87	15.56	15.88	-.32
1996 . . .	12.64	12.20	.44	2.90	3.97	-1.07	15.54	16.17	-.63
1997 . . .	12.65	12.72	-.07	2.90	4.21	-1.31	15.55	16.92	-1.38
1998 . . .	12.65	13.02	-.37	2.90	4.44	-1.54	15.55	17.46	-1.91
1999 . . .	12.65	13.13	-.48	2.90	4.65	-1.75	15.55	17.78	-2.23
2000 . . .	12.65	13.18	-.53	2.90	4.87	-1.97	15.55	18.04	-2.49
2001 . . .	12.65	13.26	-.61	2.90	5.10	-2.20	15.55	18.36	-2.81
2002 . . .	12.65	13.36	-.71	2.90	5.33	-2.43	15.55	18.69	-3.14
2005 . . .	12.76	13.46	-.70	2.90	6.08	-3.18	15.66	19.54	-3.88
2010 . . .	12.94	13.75	-.81	2.90	7.36	-4.46	15.84	21.10	-5.27
2015 . . .	13.06	14.81	-1.76	2.90	9.25	-6.35	15.96	24.07	-8.11
2020 . . .	13.14	16.54	-3.39	2.90	11.51	-8.61	16.04	28.04	-12.00
2025 . . .	13.23	18.35	-5.12	2.90	14.15	-11.25	16.13	32.49	-16.37
2030 . . .	13.30	19.82	-6.52	2.90	16.84	-13.94	16.20	36.66	-20.46
2035 . . .	13.35	20.86	-7.50	2.90	18.96	-16.06	16.25	39.81	-23.56
2040 . . .	13.38	21.52	-8.13	2.90	20.26	-17.36	16.28	41.77	-25.49
2045 . . .	13.41	22.25	-8.84	2.90	20.92	-18.02	16.31	43.17	-26.85
2050 . . .	13.46	23.23	-9.77	2.90	21.38	-18.48	16.36	44.61	-28.25
2055 . . .	13.52	24.50	-10.98	2.90	21.90	-19.00	16.42	46.40	-29.98
2060 . . .	13.58	25.73	-12.14	2.90	22.61	-19.71	16.48	48.33	-31.85
2065 . . .	13.63	26.75	-13.12	2.90	23.43	-20.53	16.53	50.19	-33.65
2070 . . .	13.67	27.62	-13.95	2.90	24.28	-21.38	16.57	51.90	-35.33

¹The taxable payroll for HI is somewhat larger than the taxable payroll for OASDI because the HI taxable maximum amount is significantly higher than the taxable maximum for OASDI beginning 1991, 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 as a percent of taxable payroll are computed as the sum of the rates for the separate programs.

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.

Table III.A.3 shows the estimates of summarized OASDI and HI income rates, cost rates and balances for various time periods, based on all three sets of assumptions. Values are summarized over the three 25-year subperiods (excluding the beginning fund balances and the cost of reaching and maintaining ending fund targets) as well as the 25-year, 50-year, and 75-year valuation periods (for which beginning fund balances are included in the summarized income rates, and the costs of reaching and maintaining an ending fund balance equal to 100 percent of annual expenditures by the end of the period are included in the summarized cost rates). Estimates shown for the combined trust funds are theoretical because no authority currently exists for transferring assets from one trust fund to another.

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

Appendices

TABLE III.A.3.—COMPARISON OF SUMMARIZED INCOME RATES AND COST RATES¹ FOR OASDI AND HI BY ALTERNATIVE, CALENDAR YEARS 1993-2067

[As a percentage of taxable payroll ¹]									
Calendar year period	OASDI			HI			Combined		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative I:									
25-year subperiods: ²									
1993-2017	12.68	10.53	2.15	2.90	3.99	-1.09	15.58	14.51	1.07
2018-2042	12.97	12.76	.21	2.90	5.15	-2.25	15.87	17.91	-2.04
2043-2067	12.96	12.44	.52	2.90	6.08	-3.18	15.86	18.51	-2.66
Valuation periods: ³									
25-year:									
1993-2017 . .	13.24	10.96	2.28	3.09	4.16	-1.07	16.33	15.12	1.21
50-year:									
1993-2042 . .	13.12	11.75	1.36	3.00	4.61	-1.61	16.12	16.36	-.24
75-year:									
1993-2067 . .	13.07	11.91	1.16	2.98	5.01	-2.03	16.05	16.92	-.87
Alternative II:									
25-year subperiods: ²									
1993-2017	12.72	11.87	.86	2.90	4.92	-2.02	15.62	16.79	-1.17
2018-2042	13.10	15.73	-2.63	2.90	9.04	-6.14	16.00	24.77	-8.77
2043-2067	13.18	17.28	-4.10	2.90	11.48	-8.58	16.08	28.76	-12.68
Valuation periods: ³									
25-year:									
1993-2017 . .	13.31	12.37	.95	3.10	5.18	-2.08	16.41	17.55	-1.14
50-year:									
1993-2042 . .	13.22	13.84	-.62	3.01	6.92	-3.91	16.23	20.76	-4.53
75-year:									
1993-2067 . .	13.21	14.67	-1.46	2.98	8.06	-5.07	16.19	22.73	-6.53
Alternative III:									
25-year subperiods: ²									
1993-2017	12.77	13.46	-.69	2.90	6.13	-3.23	15.67	19.59	-3.92
2018-2042	13.26	19.32	-6.07	2.90	16.09	-13.19	16.16	35.42	-19.26
2043-2067	13.50	24.39	-10.89	2.90	21.96	-19.06	16.40	46.35	-29.95
Valuation periods: ³									
25-year:									
1993-2017 . .	13.39	14.04	-.66	3.11	6.53	-3.42	16.50	20.57	-4.07
50-year:									
1993-2042 . .	13.33	16.40	-3.07	3.02	10.89	-7.87	16.35	27.29	-10.94
75-year:									
1993-2067 . .	13.37	18.33	-4.96	2.99	13.57	-10.58	16.36	31.90	-15.54

¹The taxable payroll for HI is considerably larger than the taxable payroll for OASDI because the HI taxable maximum amount is significantly higher than the taxable maximum for OASDI beginning 1991, 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.

²Income rates do not include beginning trust fund balances and cost rates do not include the cost of reaching ending fund targets.

³Income rates include beginning trust fund balances and cost rates include an ending fund target equal to 100 percent of annual expenditures by the end of the period.

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

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

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

The selection of a particular index for adjustment of current dollars depends upon the analyst's decision as to which index provides the most useful standard for adjusting dollar amounts, over time, to create values that are appropriately comparable. Table III.B.1 presents five such indices for adjustment.

One of the most common forms of standardization is based on some measure of change in the prices of consumer goods. One such price index is the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W, hereafter referred to as "CPI"), which is published by the Bureau of Labor Statistics, Department of Labor. This is the index used to determine annual increases in OASDI monthly benefits payable after the year of initial eligibility. The CPI is assumed to increase ultimately at annual rates of 3.0, 4.0, and 5.0 percent for alternatives I, II, and III, respectively. Constant-dollar values (those adjusted by the CPI) are provided in table III.B.2.

Another type of standardization combines the effects of price inflation with 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 4.7, 5.1, and 5.6 percent under alternatives I, II, and III, respectively.

The taxable payroll index adjusts for the effects of changes in the number of workers and changes in the proportion of earnings that are taxable, as well as for the effects of price inflation and real-wage

Appendices

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

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

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

TABLE III.B.1.—SELECTED ECONOMIC VARIABLES BY ALTERNATIVE, CALENDAR YEARS 1992-2070

[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
Alternative I:					
1992.....	97.31	22,664.02	2,532	5,949	0.9328
1993.....	100.00	23,586.64	2,683	6,316	1.0000
1994.....	102.82	24,674.96	2,868	6,737	1.0635
1995.....	105.90	25,906.27	3,061	7,189	1.1264
1996.....	109.07	27,141.33	3,261	7,649	1.1936
1997.....	112.34	28,433.96	3,468	8,120	1.2657
1998.....	115.71	29,766.82	3,682	8,609	1.3428
1999.....	119.17	31,144.96	3,900	9,111	1.4246
2000.....	122.76	32,622.59	4,131	9,641	1.5114
2001.....	126.43	34,178.15	4,373	10,205	1.6041
2002.....	130.22	35,859.14	4,631	10,805	1.7038
2005.....	142.30	41,156.64	5,485	12,804	2.0369
2010.....	164.96	51,781.34	7,194	16,859	2.7374
2015.....	191.23	65,148.85	9,309	21,903	3.6789
2020.....	221.69	81,967.21	11,948	28,243	4.9441
2025.....	257.00	103,127.28	15,313	36,372	6.6445
2030.....	297.93	129,749.88	19,748	47,133	8.9296
2035.....	345.39	163,245.19	25,605	61,405	12.0006
2040.....	400.40	205,387.39	33,226	80,066	16.1278
2045.....	464.17	258,408.73	43,023	104,174	21.6745
2050.....	538.10	325,117.69	55,650	135,397	29.1287
2055.....	623.81	409,047.75	71,994	176,006	39.1465
2060.....	723.17	514,644.59	93,284	229,151	52.6096
2065.....	838.35	647,501.56	120,909	298,439	70.7029
2070.....	971.87	814,655.94	156,600	388,391	95.0188

**TABLE III.B.1.—SELECTED ECONOMIC VARIABLES BY ALTERNATIVE,
CALENDAR YEARS 1992-2070 (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
Alternative II:					
1992.....	97.08	22,630.79	2,527	5,946	0.9328
1993.....	100.00	23,431.82	2,658	6,276	1.0000
1994.....	103.10	24,443.84	2,817	6,655	1.0635
1995.....	106.42	25,526.64	2,975	7,042	1.1268
1996.....	109.97	26,599.36	3,137	7,435	1.1942
1997.....	113.79	27,763.31	3,309	7,845	1.2669
1998.....	117.96	29,017.51	3,488	8,281	1.3445
1999.....	122.56	30,413.96	3,683	8,766	1.4281
2000.....	127.46	31,921.18	3,897	9,294	1.5192
2001.....	132.56	33,531.26	4,127	9,867	1.6176
2002.....	137.86	35,274.95	4,375	10,481	1.7242
2005.....	155.07	40,951.95	5,211	12,548	2.0788
2010.....	188.67	52,515.58	6,914	16,796	2.8337
2015.....	229.55	67,344.44	9,053	22,186	3.8627
2020.....	279.28	86,360.53	11,720	28,990	5.2655
2025.....	339.79	110,746.21	15,111	37,740	7.1776
2030.....	413.40	142,017.69	19,535	49,258	9.7842
2035.....	502.97	182,119.33	25,340	64,511	13.3374
2040.....	611.94	233,544.48	32,842	84,419	18.1810
2045.....	744.52	299,490.59	42,354	109,916	24.7834
2050.....	905.82	384,057.97	54,505	142,812	33.7836
2055.....	1,102.07	492,504.66	70,039	185,281	46.0523
2060.....	1,340.83	631,573.56	90,074	240,575	62.7764
2065.....	1,631.33	809,911.44	115,964	312,704	85.5738
2070.....	1,984.76	1,038,606.63	149,157	406,083	116.6503
Alternative III:					
1992.....	96.42	22,549.63	2,521	5,942	.9328
1993.....	100.00	23,365.85	2,647	6,273	1.0000
1994.....	103.97	24,267.53	2,763	6,512	1.0654
1995.....	109.60	25,479.71	2,903	6,891	1.1330
1996.....	116.62	27,230.46	3,119	7,492	1.2134
1997.....	122.36	28,248.08	3,259	7,716	1.3091
1998.....	128.43	29,625.19	3,408	8,134	1.4151
1999.....	134.86	31,256.46	3,627	8,768	1.5255
2000.....	141.60	32,932.57	3,876	9,408	1.6348
2001.....	148.68	34,744.14	4,126	10,046	1.7497
2002.....	156.11	36,681.81	4,383	10,704	1.8705
2005.....	180.72	43,195.90	5,254	12,974	2.2683
2010.....	230.65	56,723.38	7,094	17,752	3.1188
2015.....	294.37	74,487.21	9,464	24,005	4.2881
2020.....	375.70	97,814.06	12,447	32,018	5.8957
2025.....	479.50	128,446.09	16,233	42,363	8.1061
2030.....	611.97	168,671.02	21,185	56,086	11.1453

Appendices

**TABLE III.B.1.—SELECTED ECONOMIC VARIABLES BY ALTERNATIVE,
CALENDAR YEARS 1992-2070 (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
Alternative III:(Cont.)					
2035.....	781.05	221,493.03	27,641	74,236	15.3238
2040.....	996.84	290,857.09	35,913	97,850	21.0690
2045.....	1,272.24	381,943.59	46,355	128,129	28.9681
2050.....	1,623.74	501,555.31	59,492	166,817	39.8288
2055.....	2,072.35	658,625.31	76,137	216,579	54.7613
2060.....	2,644.91	864,884.31	97,492	281,336	75.2923
2065.....	3,375.64	1,135,736.50	124,913	365,682	103.5207
2070.....	4,308.27	1,491,410.50	159,992	475,147	142.3324

¹The 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 1993, and multiplying the result by 100, thereby initializing the CPI at 100 for 1993.

²The "SSA average wage index" is defined in section 215(j)(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.

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

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

Table III.B.2 shows estimated operations of the combined OASI and DI Trust Funds in constant 1993 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 three sets of assumptions I, II, and III described earlier in this report.

TABLE III.B.2.—ESTIMATED OPERATIONS OF THE COMBINED OASI AND DI TRUST FUNDS IN CONSTANT 1993 DOLLARS¹ BY ALTERNATIVE, CALENDAR YEARS 1993-2070

[In billions]

Calendar year	Income excluding interest	Interest income	Total income	Outgo	Assets at end of year
Alternative I:					
1993	\$330.9	\$28.1	\$359.0	\$308.1	\$382.3
1994	351.7	30.4	382.1	314.0	439.9
1995	362.3	33.2	395.4	319.3	503.2
1996	376.6	36.4	413.0	325.1	576.5
1997	387.4	40.3	427.7	330.9	656.5
1998	399.6	44.6	444.2	336.7	744.9
1999	411.1	49.4	460.6	342.7	841.1
2000	422.8	54.8	477.6	348.8	945.4
2001	434.8	61.0	495.8	355.0	1,058.6
2002	446.6	67.6	514.2	361.6	1,180.4
2005	488.9	90.0	576.9	386.4	1,597.9
2010	556.7	137.8	694.5	441.8	2,463.0
2015	625.7	194.4	820.1	527.4	3,442.6
2020	695.7	250.2	945.9	639.9	4,395.7
2025	771.8	300.3	1,072.1	760.9	5,249.7
2030	860.0	346.3	1,206.4	875.7	6,040.9
2035	961.9	395.7	1,357.5	976.0	6,903.1
2040	1,075.2	458.0	1,533.1	1,060.9	8,003.2
2045	1,199.5	539.9	1,739.4	1,156.4	9,445.7
2050	1,337.7	642.5	1,980.2	1,276.1	11,244.8
2055	1,492.9	764.9	2,257.8	1,427.7	13,381.1
2060	1,669.0	907.2	2,576.2	1,602.3	15,864.0
2065	1,866.0	1,073.7	2,939.7	1,790.2	18,772.3
2070	2,084.6	1,270.3	3,354.9	1,997.2	22,206.2
Alternative II:					
1993	327.9	28.0	355.8	309.1	378.3
1994	344.8	29.8	374.6	315.9	425.5
1995	351.3	31.7	383.0	322.5	472.8
1996	359.9	33.9	393.8	329.2	522.1
1997	365.4	36.1	401.5	335.9	570.2
1998	371.9	38.3	410.2	342.1	618.1
1999	378.2	40.7	418.9	348.3	665.5
2000	384.8	43.2	428.0	354.9	713.1
2001	392.1	46.0	438.1	361.8	762.0
2002	399.3	48.9	448.1	368.7	812.2
2005	425.6	58.1	483.7	389.2	979.7
2010	470.0	77.1	547.1	431.9	1,308.8
2015	510.0	95.0	605.1	500.0	1,595.6
2020	545.6	101.2	646.8	589.2	1,673.9
2025	581.1	89.2	670.3	682.8	1,448.8
2030	619.5	58.1	677.6	767.9	909.4
2035 ²	661.5	11.0	672.5	837.7	114.0
Alternative III:					
1993	326.6	28.0	354.5	310.0	376.1
1994	336.1	29.4	365.5	317.8	409.4
1995	334.0	30.4	364.4	320.8	432.0
1996	337.5	31.6	369.1	326.4	448.7
1997	335.8	32.9	368.7	338.7	457.7
1998	334.1	33.2	367.4	345.6	457.8
1999	338.9	32.8	371.7	353.2	454.6
2000	345.2	32.1	377.3	360.7	449.5
2001	350.2	31.3	381.5	368.0	441.6
2002	354.0	30.3	384.3	375.2	429.7
2005	369.6	25.4	395.0	391.3	385.7
2010	396.6	18.3	414.8	422.8	290.8
2015 ²	418.5	6.6	425.1	476.3	87.9

¹The adjustment from current to constant dollars is by the CPI indexing series shown in table III.B.1.

²Estimates for later years are not shown because the combined OASI and DI Trust Funds are estimated to become exhausted in 2036 under alternative II and in 2017 under alternative III.

Appendices

Figure III.B.1 provides a comparison of outgo with total annual income (including interest) and annual income excluding interest, for the OASDI program under alternative II assumptions. All values are expressed in constant dollars, as shown in table III.B.2. 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 a portion of annual interest income for years 2017 through 2024, and (3) current tax income, annual interest income, plus a portion of the principal balance in the trust funds for years 2025 through 2036, i.e., through the year of exhaustion.

FIGURE III.B.1.--ESTIMATED OASDI INCOME AND OUTGO
IN CONSTANT DOLLARS, BASED ON ALTERNATIVE II,
CALENDAR YEARS 1993-2036

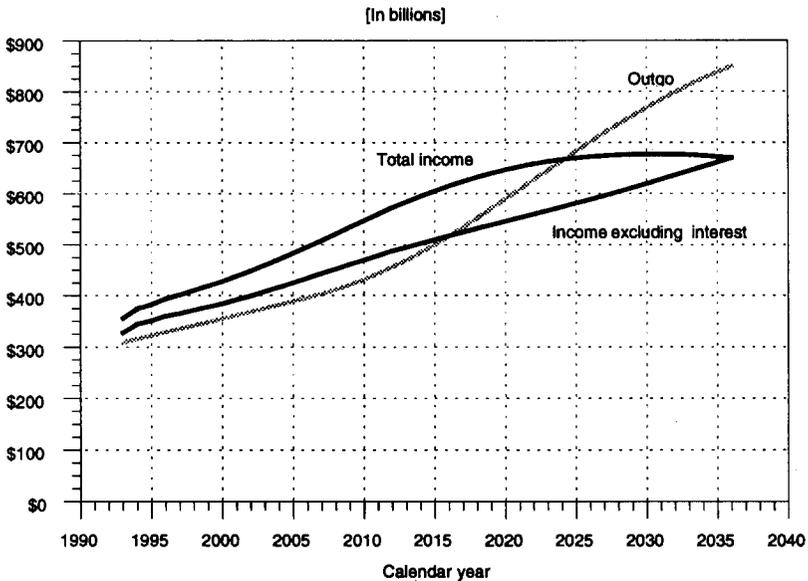


Table III.B.3 shows estimated operations of the combined OASI and DI Trust Funds in current dollars—that is in dollars unadjusted for inflation. Items included in the table are: income excluding interest, interest income, total income, total outgo, and assets at the end of the year. These estimates, based on the three sets of economic and demographic assumptions I, II, and III described earlier in this report, are presented to facilitate independent analysis.

TABLE III.B.3.—ESTIMATED OPERATIONS OF THE COMBINED OASI AND DI TRUST FUNDS IN CURRENT DOLLARS BY ALTERNATIVE, CALENDAR YEARS 1993-2070

[In billions]

Calendar year	Income excluding interest	Interest income	Total income	Outgo	Assets at end of year
Alternative I:					
1993	\$330.9	\$28.1	\$359.0	\$308.1	\$382.3
1994	361.6	31.2	392.9	322.9	452.3
1995	383.6	35.1	418.7	338.2	532.9
1996	410.8	39.7	450.5	354.6	628.9
1997	435.2	45.3	480.4	371.8	737.5
1998	462.4	51.6	514.0	389.6	861.9
1999	490.0	58.9	548.9	408.4	1,002.4
2000	519.0	67.3	586.3	428.2	1,160.5
2001	549.8	77.1	626.9	448.9	1,338.5
2002	581.5	88.1	669.6	470.9	1,537.2
2005	692.8	128.0	820.8	549.8	2,273.8
2010	918.3	227.3	1,145.6	728.7	4,062.9
2015	1,196.6	371.8	1,568.3	1,008.6	6,583.5
2020	1,542.3	554.6	2,096.9	1,418.7	9,744.8
2025	1,983.6	771.7	2,755.3	1,955.6	13,491.9
2030	2,562.4	1,031.8	3,594.2	2,609.0	17,998.0
2035	3,322.1	1,368.6	4,688.7	3,371.1	23,842.3
2040	4,304.9	1,833.6	6,138.6	4,248.0	32,044.6
2045	5,567.7	2,506.0	8,073.6	5,367.7	43,844.4
2050	7,198.0	3,457.4	10,655.5	6,866.9	60,508.5
2055	9,312.9	4,771.5	14,084.4	8,906.2	83,472.7
2060	12,069.6	6,560.7	18,630.3	11,587.5	114,723.1
2065	15,643.5	9,001.5	24,645.0	15,008.3	157,376.8
2070	20,260.0	12,345.8	32,605.8	19,410.2	215,815.9
Alternative II:					
1993	327.9	28.0	355.8	309.1	378.3
1994	355.5	30.7	386.2	325.7	438.7
1995	373.9	33.8	407.6	343.2	503.2
1996	395.8	37.2	433.0	362.0	574.2
1997	415.8	41.0	456.9	382.2	648.8
1998	438.7	45.2	483.9	403.6	729.1
1999	463.5	49.9	513.4	426.8	815.7
2000	490.5	55.1	545.6	452.3	908.9
2001	519.8	61.0	580.8	479.6	1,010.2
2002	550.4	67.4	617.8	508.3	1,119.6
2005	660.1	90.1	750.1	603.5	1,519.3
2010	886.7	145.4	1,032.2	814.9	2,469.3
2015	1,170.7	218.2	1,388.9	1,147.8	3,662.7
2020	1,523.8	282.6	1,806.4	1,645.6	4,674.9
2025	1,974.4	303.2	2,277.6	2,320.1	4,922.9
2030	2,561.0	240.0	2,801.1	3,174.3	3,759.6
2035 ¹	3,327.2	55.3	3,382.5	4,213.6	573.4
Alternative III:					
1993	326.6	28.0	354.5	310.0	376.1
1994	349.5	30.5	380.0	330.4	425.7
1995	366.0	33.3	399.4	351.6	473.5
1996	393.5	36.9	430.4	380.6	523.3
1997	410.9	40.3	451.2	414.4	560.0
1998	429.1	42.7	471.8	443.8	588.0
1999	457.1	44.2	501.3	476.3	613.1
2000	488.8	45.5	534.3	510.8	636.5
2001	520.7	46.6	567.3	547.2	656.6
2002	552.6	47.2	599.9	585.7	670.7
2005	667.9	45.9	713.8	707.2	697.0
2010	914.7	42.1	956.8	975.2	670.7
2015 ¹	1,231.9	19.4	1,251.4	1,402.0	258.8

¹Estimates for later years are not shown because the combined OASI and DI Trust Funds are estimated to become exhausted in 2036 under alternative II and in 2017 under alternative III.

Appendices

Table III.B.4 shows estimated income excluding interest and estimated total outgo 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 three sets of assumptions I, II, and III described earlier in this report. For OASDI, income excluding interest consists of payroll-tax contributions, proceeds from taxation of 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 contributions (including contributions from railroad employment) and payments from the general fund of the Treasury for contributions on deemed wage credits for military service. Total outgo consists of outlays (benefits and administrative expenses) for insured beneficiaries. Income and outgo estimates are shown on a cash basis for the OASDI program and on an incurred basis for the HI program.

Table III.B.4 also shows the difference between income excluding interest and outgo, which is called the balance. The balance indicates the size of the net cash flow from tax income and expenditures to the funds.

TABLE III.B.4.—ESTIMATED OASDI AND HI INCOME EXCLUDING INTEREST, OUTGO, AND BALANCE IN CURRENT DOLLARS BY ALTERNATIVE, CALENDAR YEARS 1993-2070

Calendar year	[In billions]								
	OASDI			HI			Combined		
	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance
Alternative I:									
1993	\$331	\$308	\$23	\$87	\$95	-\$8	\$418	\$404	\$15
1994	362	323	39	93	107	-13	455	429	25
1995	384	338	45	99	118	-19	483	456	27
1996	411	355	56	106	130	-24	517	484	32
1997	435	372	63	112	140	-28	548	512	36
1998	462	390	73	119	151	-32	582	541	41
1999	490	408	82	126	163	-37	616	572	45
2000	519	428	91	133	175	-42	652	604	49
2001	550	449	101	141	189	-47	691	638	53
2002	582	471	111	150	202	-53	731	673	58
2005	693	550	143	177	249	-71	870	798	72
2010	918	729	190	233	338	-105	1,151	1,066	84
2015	1,197	1,009	188	301	468	-167	1,498	1,477	21
2020	1,542	1,419	124	387	626	-239	1,929	2,045	-115
2025	1,984	1,956	28	497	842	-345	2,480	2,797	-317
2030	2,562	2,609	-47	640	1,148	-507	3,203	3,757	-554
2035	3,322	3,371	-49	830	1,553	-723	4,152	4,924	-772
2040	4,305	4,248	57	1,078	2,083	-1,006	5,383	6,331	-949
2045	5,568	5,368	200	1,396	2,780	-1,384	6,963	8,147	-1,184
2050	7,198	6,867	331	1,805	3,676	-1,870	9,003	10,542	-1,539
2055	9,313	8,906	407	2,336	4,871	-2,535	11,649	13,777	-2,128
2060	12,070	11,588	482	3,027	6,517	-3,490	15,096	18,104	-3,008
2065	15,644	15,008	635	3,924	8,756	-4,832	19,567	23,764	-4,197
2070	20,260	19,410	850	5,083	11,753	-6,670	25,343	31,163	-5,820
Alternative II:									
1993	328	309	19	86	96	-9	414	405	10
1994	355	326	30	92	108	-16	447	433	14
1995	374	343	31	97	120	-23	471	463	7
1996	396	362	34	102	133	-31	498	495	3
1997	416	382	34	107	145	-37	523	527	-4
1998	439	404	35	113	158	-45	552	562	-10
1999	464	427	37	119	172	-53	583	599	-16
2000	491	452	38	126	188	-62	617	641	-24
2001	520	480	40	134	206	-72	654	685	-32
2002	550	508	42	142	224	-83	692	733	-41
2005	660	604	57	169	290	-121	829	894	-65
2010	887	815	72	224	431	-206	1,111	1,246	-135
2015	1,171	1,148	23	294	652	-358	1,465	1,800	-336
2020	1,524	1,646	-122	381	960	-579	1,905	2,606	-701
2025	1,974	2,320	-346	492	1,408	-916	2,466	3,728	-1,262
2030	2,561	3,174	-613	636	2,042	-1,406	3,197	5,216	-2,019
2035	3,327	4,214	-886	825	2,875	-2,050	4,152	7,088	-2,936
2040	4,312	5,452	-1,140	1,070	3,913	-2,843	5,382	9,364	-3,983
2045	5,561	7,045	-1,484	1,380	5,202	-3,822	6,941	12,246	-5,305
2050	7,162	9,179	-2,018	1,776	6,843	-5,067	8,938	16,023	-7,085
2055	9,217	12,090	-2,873	2,283	9,012	-6,729	11,499	21,102	-9,602
2060	11,872	15,918	-4,046	2,937	11,958	-9,022	14,809	27,876	-13,067
2065	15,300	20,818	-5,517	3,782	15,957	-12,176	19,082	36,775	-17,693
2070	19,697	27,116	-7,420	4,866	21,338	-16,472	24,562	48,454	-23,892

Appendices

TABLE III.B.4.—ESTIMATED OASDI AND HI INCOME EXCLUDING INTEREST, OUTGO, AND BALANCE IN CURRENT DOLLARS BY ALTERNATIVE, CALENDAR YEARS 1993-2070 (Cont.)

[In billions]

Calendar year	OASDI			HI			Combined		
	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance	Income excluding interest	Outgo	Balance
Alternative III:									
1993	\$327	\$310	\$17	\$86	\$96	-\$10	\$413	\$406	\$7
1994	349	330	19	90	109	-19	439	439	(1)
1995	366	352	14	95	123	-28	461	474	-14
1996	394	381	13	102	139	-38	495	520	-25
1997	411	414	-4	106	154	-48	517	568	-51
1998	429	444	-15	111	170	-59	540	613	-74
1999	457	476	-19	118	189	-71	575	666	-91
2000	489	511	-22	126	211	-85	615	722	-107
2001	521	547	-26	134	236	-101	655	783	-128
2002	553	586	-33	142	262	-119	695	847	-152
2005	668	707	-39	171	358	-187	839	1,065	-226
2010	915	975	-61	231	585	-355	1,145	1,560	-415
2015	1,232	1,402	-170	308	983	-675	1,540	2,385	-845
2020	1,631	2,058	-427	406	1,610	-1,204	2,037	3,668	-1,631
2025	2,141	2,978	-837	530	2,585	-2,055	2,671	5,563	-2,892
2030	2,810	4,199	-1,390	692	4,015	-3,324	3,501	8,215	-4,713
2035	3,680	5,765	-2,084	903	5,900	-4,997	4,583	11,665	-7,082
2040	4,793	7,727	-2,934	1,173	8,196	-7,023	5,966	15,923	-9,957
2045	6,202	10,314	-4,113	1,515	10,927	-9,412	7,716	21,241	-13,524
2050	7,986	13,822	-5,836	1,945	14,340	-12,395	9,932	28,163	-18,231
2055	10,267	18,652	-8,386	2,490	18,806	-16,316	12,757	37,459	-24,701
2060	13,206	25,080	-11,874	3,191	24,873	-21,682	16,396	49,953	-33,557
2065	16,984	33,418	-16,434	4,090	33,049	-28,959	21,074	66,467	-45,393
2070	21,821	44,189	-22,368	5,241	43,885	-38,644	27,062	88,074	-61,012

¹Negligible, i.e., between -0.005 and 0.005 percent of taxable payroll.

Note: Annual figures are available from the Office of the Actuary, Social Security Administration.

Table III.B.5 shows estimated future benefit amounts payable to persons attaining age 65 in various years based on retirement at the normal retirement age and at age 65, for various steady levels of pre-retirement earnings, based on alternative II assumptions. The benefit amount is shown in current dollars, constant dollars (adjusted by the CPI indexing series shown in table III.B.1), and as a percentage of earnings in the 12-month period preceding retirement. The normal retirement age is currently 65, and is scheduled to increase to age 66 during the period 2000-2005 (at a rate of 2 months per year as workers attain age 62), and to age 67 during the period 2017-2022 (also by 2 months per year as workers attain age 62). The pre-retirement earnings levels shown are: low (earnings at 45 percent of the projected SSA average wage index), average (earnings at the amount of the projected SSA average wage index), and maximum (earnings at the amount of the projected SSA contribution and benefit base).

TABLE III.B.5.—ESTIMATED AVERAGE BENEFIT AMOUNT PAYABLE¹ TO RETIRED WORKERS WITH VARIOUS STEADY PRE-RETIREMENT EARNINGS LEVELS BASED ON ALTERNATIVE II ASSUMPTIONS, CALENDAR YEARS 1992-2070

Year attain age 65 ³	Age at retirement	Current dollars			Constant 1992 dollars ²			Percent of earnings		
		Low ⁴	Average	Maximum ⁵	Low ⁴	Average	Maximum ⁵	Low ⁴	Average	Maximum ⁵
Retirement at normal retirement age:										
1993	65:0	\$5,967	\$9,853	\$13,570	\$5,967	\$9,853	\$13,570	58.6	43.5	24.5
1995	65:0	6,305	10,408	14,523	5,924	9,780	13,647	57.3	42.6	24.3
2000	65:0	7,814	12,907	18,746	6,130	10,126	14,707	57.1	42.4	25.6
2005	65:6	10,071	16,638	25,056	6,368	10,521	15,844	56.0	41.6	26.3
2010	66:0	13,232	21,889	34,025	6,743	11,155	17,340	56.0	41.7	27.3
2015	66:0	16,976	28,077	44,379	7,111	11,761	18,590	56.0	41.7	27.8
2020	66:2	21,912	36,249	57,450	7,495	12,399	19,651	55.9	41.6	27.8
2025	67:0	29,185	48,353	76,514	7,941	13,157	20,819	55.7	41.5	27.6
2030	67:0	37,420	62,006	98,113	8,369	13,867	21,942	55.7	41.5	27.6
2035	67:0	47,992	79,524	125,734	8,822	14,618	23,112	55.7	41.5	27.6
2040	67:0	61,548	101,979	160,987	9,299	15,408	24,323	55.7	41.5	27.5
2045	67:0	78,934	130,779	206,318	9,802	16,240	25,621	55.7	41.5	27.5
2050	67:0	101,220	167,705	264,627	10,331	17,117	27,010	55.7	41.5	27.5
2055	67:0	129,804	215,071	339,455	10,890	18,043	28,478	55.7	41.5	27.5
2060	67:0	166,465	275,801	435,403	11,478	19,018	30,023	55.7	41.5	27.5
2065	67:0	213,481	353,687	558,439	12,099	20,045	31,650	55.7	41.6	27.5
2070	67:0	273,754	453,559	716,188	12,752	21,128	33,362	55.7	41.6	27.5
Retirement at age 65:										
1993	65:0	\$5,967	\$9,853	\$13,570	\$5,967	\$9,853	\$13,570	58.6	43.5	24.5
1995	65:0	6,305	10,408	14,523	5,924	9,780	13,647	57.3	42.6	24.3
2000	65:0	7,814	12,907	18,746	6,130	10,126	14,707	57.1	42.4	25.6
2005	65:0	9,548	15,772	23,731	6,157	10,171	15,303	54.5	40.5	25.6
2010	65:0	11,824	19,529	30,280	6,267	10,351	16,049	52.6	39.1	25.5
2015	65:0	15,170	25,055	39,588	6,609	10,915	17,246	52.6	39.1	26.0
2020	65:0	19,227	31,749	50,399	6,884	11,368	18,046	52.0	38.6	25.8
2025	65:0	23,165	38,263	60,765	6,817	11,261	17,883	48.9	36.3	24.2
2030	65:0	29,702	49,063	77,911	7,185	11,868	18,846	48.8	36.3	24.2
2035	65:0	38,095	62,921	99,847	7,574	12,510	19,852	48.9	36.3	24.2
2040	65:0	48,858	80,692	127,840	7,984	13,186	20,891	48.9	36.3	24.1
2045	65:0	62,656	103,472	163,828	8,416	13,898	22,005	48.9	36.3	24.1
2050	65:0	80,343	132,693	210,134	8,870	14,649	23,198	48.9	36.3	24.1
2055	65:0	103,039	170,173	269,540	9,350	15,441	24,458	48.9	36.3	24.1
2060	65:0	132,139	218,225	345,753	9,855	16,275	25,786	48.9	36.3	24.1
2065	65:0	169,451	279,846	443,457	10,387	17,154	27,184	48.9	36.3	24.1
2070	65:0	217,298	358,864	568,745	10,948	18,081	28,656	48.9	36.3	24.1

¹Annual benefit amount is the benefit payable for the 12-month period starting with the month of retirement.

²The adjustment from current to constant dollars is made using the CPI indexing series shown in table III.B.1.

³Assumed to attain age 65 in January of the year.

⁴Earnings equal to 45 percent of average.

⁵Earnings equal to the contribution and benefit base.

**C. LONG-RANGE ESTIMATES OF SOCIAL SECURITY
TRUST FUND OPERATIONS AS A PERCENTAGE
OF THE GROSS DOMESTIC PRODUCT**

This appendix presents long-range projections of the operations of the combined Old-Age and Survivors Insurance and Disability Insurance (OASI and DI) Trust Funds and of the Hospital Insurance (HI) Trust Fund expressed as a percentage of the gross domestic product (GDP). While expressing these fund operations as a percentage of taxable payroll is the most useful approach for assessing the financial status of the programs, (see table II.F.12 and section III.A), analyzing them as a percentage of GDP provides an additional perspective on these fund operations in relation to the total value of goods and services produced in the United States.

Table III.C.1 shows estimated income excluding interest, total outgo, and the resulting balance of the combined OASI and DI Trust Funds, of the HI Trust Fund, and of the combined OASI, DI, and HI Trust Funds, expressed as percentages of GDP on the basis of each of the three alternative sets of assumptions. The estimated GDP on which these percentages are based is also shown in table III.C.1. 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 contributions (including contributions from railroad employment) and payments from the general fund of the Treasury for contributions on deemed wage credits for military service. Total outgo consists of outlays (benefits and administrative expenses) for insured beneficiaries. Both the HI income and outgo are on an incurred basis.

For the next 13 years (through 2005), the OASDI balance (income excluding interest less outgo) as a percentage of GDP is projected to increase on the basis of alternatives I and II, and to decline on the basis of alternative III. The projected HI balance as a percentage of GDP, however, decreases through 2005 under all three alternatives. The combined OASDI and HI balance as a percentage of GDP is projected, for the next 13 years, to increase under alternative I, and to decline under alternatives II and III. Between 2005 and about

2030, under all three alternatives, both the OASDI and HI balances as percentages of GDP are projected to decline substantially because the "baby-boom" generation reaches retirement age during these years. By 2020, balances are projected to become permanently negative in each case except for the OASDI program under alternative I. After 2020, both the HI and OASDI deficits (negative balances) as percentages of GDP are projected to continue to increase in size, except for OASDI under alternative I, for which the balance as a percentage of GDP is projected to be negative for a brief period and a small positive thereafter.

By the year 2070, the combined OASDI and HI balances as percentages of GDP, based on the three alternatives, are projected to differ by a relatively large amount: from a deficit of 1.50 percent for alternative I to a deficit of 12.84 percent for alternative III. Projected balances differ by a much smaller amount by the year 2005: from a positive balance of 0.56 percent for alternative I to a deficit of 1.74 percent for alternative III. In addition, the summarized long-range (75-year) balance as a percentage of GDP varies by a relatively large amount (from a deficit of 0.46 percent, based on alternative I, to a deficit of 6.45 percent, based on alternative III), while the 25-year summarized balance varies by a smaller amount (from a positive of 0.46 percent to a deficit of 1.83 percent). Summarized rates are calculated on the present-value basis including the trust fund balances on January 1, 1993 and the cost of reaching and maintaining a target trust fund level equal to 100 percent of annual expenditures by the end of the period. (See section II.F for further explanation.)

Appendices

TABLE III.C.1.—ESTIMATED OASDI AND HI INCOME EXCLUDING INTEREST, OUTGO, AND BALANCE AS A PERCENTAGE OF GDP BY ALTERNATIVE, CALENDAR YEARS 1993-2070

Calendar year	Percentage of GDP									GDP in dollars (billions)
	OASDI			HI			Combined			
	In-come ¹	Out-go	Bal-ance	In-come ¹	Out-go	Bal-ance	In-come ¹	Out-go	Bal-ance	
Alternative I:										
1993	5.24	4.88	0.36	1.38	1.51	-0.13	6.62	6.39	0.23	6,316
1994	5.37	4.79	.58	1.38	1.58	-.20	6.75	6.37	.38	6,737
1995	5.34	4.70	.63	1.38	1.64	-.26	6.72	6.35	.37	7,189
1996	5.37	4.64	.73	1.38	1.69	-.31	6.75	6.33	.42	7,649
1997	5.36	4.58	.78	1.38	1.73	-.34	6.74	6.30	.44	8,120
1998	5.37	4.53	.84	1.38	1.76	-.37	6.75	6.28	.47	8,609
1999	5.38	4.48	.90	1.38	1.79	-.41	6.76	6.27	.49	9,111
2000	5.38	4.44	.94	1.38	1.82	-.44	6.77	6.26	.51	9,641
2001	5.39	4.40	.99	1.38	1.85	-.47	6.77	6.25	.52	10,205
2002	5.38	4.36	1.02	1.38	1.87	-.49	6.77	6.23	.53	10,805
2005	5.41	4.29	1.12	1.38	1.94	-.56	6.79	6.23	.56	12,804
2010	5.45	4.32	1.12	1.38	2.00	-.62	6.83	6.33	.50	16,859
2015	5.46	4.60	.86	1.38	2.14	-.76	6.84	6.74	.10	21,903
2020	5.46	5.02	.44	1.37	2.22	-.85	6.83	7.24	-.41	28,243
2025	5.45	5.38	.08	1.37	2.31	-.95	6.82	7.69	-.87	36,372
2030	5.44	5.54	-.10	1.36	2.43	-1.08	6.80	7.97	-1.18	47,133
2035	5.41	5.49	-.08	1.35	2.53	-1.18	6.76	8.02	-1.26	61,405
2040	5.38	5.31	.07	1.35	2.60	-1.26	6.72	7.91	-1.18	80,066
2045	5.34	5.15	.19	1.34	2.67	-1.33	6.68	7.82	-1.14	104,174
2050	5.32	5.07	.24	1.33	2.71	-1.38	6.65	7.79	-1.14	135,397
2055	5.29	5.06	.23	1.33	2.77	-1.44	6.62	7.83	-1.21	176,006
2060	5.27	5.06	.21	1.32	2.84	-1.52	6.59	7.90	-1.31	229,151
2065	5.24	5.03	.21	1.31	2.93	-1.62	6.56	7.96	-1.41	298,439
2070	5.22	5.00	.22	1.31	3.03	-1.72	6.53	8.02	-1.50	388,391
Summarized rates:²										
25-year:										
1993-2017	5.65	4.68	.97	1.47	1.98	-.51	7.13	6.66	.46	---
50-year:										
1993-2042	5.56	4.98	.58	1.42	2.18	-.76	6.98	7.16	-.18	---
75-year:										
1993-2067	5.48	5.00	.49	1.39	2.35	-.95	6.88	7.34	-.46	---
Alternative II:										
1993	5.22	4.92	.30	1.38	1.52	-.15	6.60	6.45	.15	6,276
1994	5.34	4.89	.45	1.38	1.62	-.24	6.72	6.51	.21	6,655
1995	5.31	4.87	.44	1.37	1.71	-.33	6.68	6.58	.10	7,042
1996	5.32	4.87	.45	1.37	1.79	-.41	6.69	6.65	.04	7,435
1997	5.30	4.87	.43	1.37	1.85	-.48	6.67	6.72	-.05	7,845
1998	5.30	4.87	.42	1.37	1.91	-.54	6.66	6.78	-.12	8,281
1999	5.29	4.87	.42	1.36	1.97	-.60	6.65	6.84	-.19	8,766
2000	5.28	4.87	.41	1.36	2.03	-.67	6.64	6.89	-.26	9,294
2001	5.27	4.86	.41	1.36	2.08	-.73	6.62	6.95	-.32	9,867
2002	5.25	4.85	.40	1.35	2.14	-.79	6.60	6.99	-.39	10,481
2005	5.26	4.81	.45	1.35	2.31	-.97	6.61	7.12	-.52	12,548
2010	5.28	4.85	.43	1.34	2.56	-1.23	6.62	7.42	-.80	16,796
2015	5.28	5.17	.10	1.33	2.94	-1.62	6.60	8.11	-1.51	22,186
2020	5.26	5.68	-.42	1.31	3.31	-2.00	6.57	8.99	-2.42	28,990
2025	5.23	6.15	-.92	1.30	3.73	-2.43	6.53	9.88	-3.34	37,740
2030	5.20	6.44	-1.25	1.29	4.15	-2.85	6.49	10.59	-4.10	49,258
2035	5.16	6.53	-1.37	1.28	4.46	-3.18	6.44	10.99	-4.55	64,511
2040	5.11	6.46	-1.35	1.27	4.63	-3.37	6.38	11.09	-4.72	84,419
2045	5.06	6.41	-1.35	1.26	4.73	-3.48	6.31	11.14	-4.83	109,916
2050	5.01	6.43	-1.41	1.24	4.79	-3.55	6.26	11.22	-4.96	142,812
2055	4.97	6.53	-1.55	1.23	4.86	-3.63	6.21	11.39	-5.18	185,281
2060	4.93	6.62	-1.68	1.22	4.97	-3.75	6.16	11.59	-5.43	240,575
2065	4.89	6.66	-1.76	1.21	5.10	-3.89	6.10	11.76	-5.66	312,704
2070	4.85	6.68	-1.83	1.20	5.25	-4.06	6.05	11.93	-5.88	406,083

TABLE III.C.1.—ESTIMATED OASDI AND HI INCOME EXCLUDING INTEREST, OUTGO, AND BALANCE AS A PERCENTAGE OF GDP BY ALTERNATIVE, CALENDAR YEARS 1993-2070 (Cont.)

Calendar year	Percentage of GDP									GDP in dollars (billions)
	OASDI			HI			Combined			
	In-come ¹	Out-go	Balance	In-come ¹	Out-go	Balance	In-come ¹	Out-go	Balance	
Alternative II: (Cont.)										
Summarized rates: ²										
25-year:										
1993-2017	5.54	5.14	0.39	1.44	2.41	-0.97	6.98	7.55	-0.57	---
50-year:										
1993-2042	5.38	5.64	-0.25	1.37	3.16	-1.78	6.76	8.79	-2.04	---
75-year:										
1993-2067	5.28	5.86	-0.58	1.34	3.61	-2.27	6.62	9.47	-2.86	---
Alternative III:										
1993	5.21	4.94	.26	1.37	1.53	-.16	6.58	6.47	.11	6,273
1994	5.37	5.07	.29	1.38	1.67	-.29	6.75	6.74	.01	6,512
1995	5.31	5.10	.21	1.37	1.78	-.41	6.68	6.89	-.20	6,891
1996	5.25	5.08	.17	1.36	1.86	-.50	6.61	6.94	-.33	7,492
1997	5.32	5.37	-.05	1.38	1.99	-.62	6.70	7.37	-.67	7,716
1998	5.28	5.46	-.18	1.36	2.08	-.72	6.64	7.54	-.90	8,134
1999	5.21	5.43	-.22	1.35	2.16	-.81	6.56	7.59	-1.03	8,768
2000	5.20	5.43	-.23	1.34	2.25	-.91	6.53	7.68	-1.14	9,408
2001	5.18	5.45	-.26	1.33	2.34	-1.01	6.52	7.79	-1.27	10,046
2002	5.16	5.47	-.31	1.33	2.44	-1.11	6.49	7.92	-1.42	10,704
2005	5.15	5.45	-.30	1.32	2.76	-1.44	6.46	8.21	-1.74	12,974
2010	5.15	5.49	-.34	1.30	3.30	-2.00	6.45	8.79	-2.34	17,752
2015	5.13	5.84	-.71	1.28	4.10	-2.81	6.42	9.94	-3.52	24,005
2020	5.09	6.43	-1.33	1.27	5.03	-3.76	6.36	11.46	-5.10	32,018
2025	5.05	7.03	-1.98	1.25	6.10	-4.85	6.30	13.13	-6.83	42,363
2030	5.01	7.49	-2.48	1.23	7.16	-5.93	6.24	14.65	-8.40	56,086
2035	4.96	7.77	-2.81	1.22	7.95	-6.73	6.17	15.71	-9.54	74,236
2040	4.90	7.90	-3.00	1.20	8.38	-7.18	6.10	16.27	-10.18	97,850
2045	4.84	8.05	-3.21	1.18	8.53	-7.35	6.02	16.58	-10.56	128,129
2050	4.79	8.29	-3.50	1.17	8.60	-7.43	5.95	16.88	-10.93	166,817
2055	4.74	8.61	-3.87	1.15	8.68	-7.53	5.89	17.30	-11.41	216,579
2060	4.69	8.91	-4.22	1.13	8.84	-7.71	5.83	17.76	-11.93	281,336
2065	4.64	9.14	-4.49	1.12	9.04	-7.92	5.76	18.18	-12.41	365,682
2070	4.59	9.30	-4.71	1.10	9.24	-8.13	5.70	18.54	-12.84	475,147
Summarized rates: ²										
25-year:										
1993-2017	5.45	5.72	-.27	1.42	2.98	-1.56	6.87	8.70	-1.83	---
50-year:										
1993-2042	5.25	6.46	-1.21	1.33	4.82	-3.48	6.59	11.28	-4.69	---
75-year:										
1993-2067	5.12	7.02	-1.90	1.29	5.84	-4.55	6.41	12.86	-6.45	---

¹Income excludes interest on the trust funds.

²Summarized rates are calculated on the present-value basis including the value of the trust funds on January 1, 1993 and the cost of reaching and maintaining a target trust fund level equal to 100 percent of annual expenditures by the end of the period.

The difference between trust fund operations expressed as percentages of taxable payroll and those expressed as percentages of GDP can be seen by analyzing the estimated ratios of taxable payroll to GDP, which are presented in table III.C.2. 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.

Projections of GDP for the first several years were based on assumed

Appendices

quarterly changes in real GDP and the GDP price deflator. Thereafter, projections of GDP were based on the projected increases in U.S. employment, labor productivity, and the GDP price deflator. Productivity projections are consistent with assumed changes in the level of average earnings, the ratio of earnings to worker compensation, the ratio of worker compensation to GDP, and average hours worked per year (see section II.H).

Projections of taxable payroll, which are described in detail in section II.H, were based on the projected increases in covered employment and average taxable earnings. Therefore, the projected increases in taxable payroll differ from projected increases in GDP primarily to the extent that average taxable earnings are assumed to increase more slowly than is productivity and to the extent that OASDI program coverage of employment changes over time.

TABLE III.C.2.—RATIO OF TAXABLE PAYROLL TO GDP BY ALTERNATIVE, CALENDAR YEARS 1993-2070

Calendar year	I	II	III
1993	0.425	0.423	0.422
1994	.426	.423	.424
1995	.426	.422	.421
1996	.426	.422	.416
1997	.427	.422	.422
1998	.428	.421	.419
1999	.428	.420	.414
2000	.428	.419	.412
2001	.429	.418	.411
2002	.429	.417	.409
2005	.428	.415	.405
2010	.427	.412	.400
2015	.425	.408	.394
2020	.423	.404	.389
2025	.421	.400	.383
2030	.419	.397	.378
2035	.417	.393	.372
2040	.415	.389	.367
2045	.413	.385	.362
2050	.411	.382	.357
2055	.409	.378	.352
2060	.407	.374	.347
2065	.405	.371	.342
2070	.403	.367	.337

The long-range trend in the ratio of taxable payroll to GDP reflects the assumed trend in the ratio of wages to total employee compensation—i.e., wages plus fringe benefits. The ratio of wages to total employee compensation declined at average annual rates of 0.34 percent for the 30 years 1962-91 and 0.36, 0.59, and 0.07 percent for the 10-year periods 1962-71, 1972-81, and 1982-91, respectively. Ultimate future annual rates of decline in the ratio of wages to employee compensation are assumed to be 0.1, 0.2, and 0.3 percent for

alternatives I, II, and III, respectively. An additional factor that has made the overall ratio of taxable payroll to GDP decline in recent years is the decline in the ratio of taxable earnings to covered earnings, as a result 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 the end of this century.

Between 1983 and 2015, however, the tendency toward decreases in the ratio of taxable payroll to GDP, discussed above, is at least partially offset by the gradually expanding OASDI coverage of Federal civilian employment resulting from the 1983 amendments.

For alternative I, the ratio of taxable payroll to GDP is projected to rise slowly through the year 2001, and then to decrease for the remainder of the long-range period. For alternatives II and III, the ratio of taxable payroll to GDP is projected to decrease essentially throughout the long-range period.

D. TEN YEAR HISTORY OF ACTUARIAL BALANCE ESTIMATES

This appendix chronicles the recent history of the primary measure of long-range actuarial status, namely the actuarial balance, as shown in the annual reports for 1983 and later. Actuarial balance is defined in detail in section II.F, Actuarial Estimates. Conceptually, the two basic components of actuarial balance are the summarized income rate and the summarized cost rate. Both rates are expressed as percentages of taxable payroll. For any given period, the actuarial balance is the difference between the present value of tax income for the period, and the present value of the outgo for the period, each divided by the present value of taxable payroll for all years in the period. Also included in the calculation of the actuarial balance are:

1. 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
2. The present value of a target trust fund balance equal to 100 percent of the amount of annual outgo to be reached and maintained by the end of the valuation period, as shown in the reports for 1991 and later.

It should be noted that the current method of calculating the actuarial balance based on present values, though used prior to the 1973 Annual Report, was not used for the annual reports of 1973-87. Instead, a simpler method that approximates the results of the present-value approach, called the "average-cost" method, was used during that period. Under the average-cost method, the sum of the annual cost rates (which are expressed as percentages of taxable payroll) over the 75-year projection period was divided by the total number of years, 75, to obtain the average cost rate per year. The average income rate was similarly calculated, and the difference between the average income rate and the average cost rate was called the actuarial balance.

In 1973, when the average-cost method was first used, the long-range financing of the program was more nearly on a pay-as-you-go basis. Also, based on the long-range economic and demographic assumptions then being used, the annual rate of growth in taxable payroll was about the same as the annual rate at which the trust funds earned interest. In either situation (i.e., pay-as-you-go financing,

where the annual income rate is the same as the annual cost rate, or an annual rate of growth in taxable payroll equal to the annual interest rate), the average-cost method produces the same result as the present-value method. However, by 1988, neither of these situations still existed.

As a result of legislation enacted in 1977 and in 1983, substantial increases in the trust funds were estimated to occur well into the next century, so that the program was partially "advance funded," rather than being funded on a pay-as-you-go basis. Also, because of declines in long-range fertility rates and average real-wage growth that were assumed in the annual reports over the period 1973-87, the annual rate of growth in taxable earnings assumed for the long range became significantly lower than the assumed interest rate. Therefore, during the period 1973-87, the results of the average-cost method and the present-value method began to diverge, and by 1988 they were quite different. While the average-cost method still accounted for most of the effects of the assumed interest rate, it no longer accounted for all of the interest effects. The present-value method, of course, does account for the full effect of the assumed interest rates. So, in 1988, the present-value method of calculating the actuarial balance was resumed.

A positive actuarial balance indicates that estimated income is more than sufficient to meet estimated trust fund obligations for the period as a whole. A negative actuarial balance indicates that estimated income is insufficient to meet estimated trust fund obligations for the entire period. An actuarial balance of zero indicates that the estimated income exactly matches estimated trust fund obligations for the period.

Table III.D.1 shows the estimated OASDI actuarial balances, as well as the summarized income and cost rates, for the last 10 annual reports (1983-1992), along with the estimates for the current report. The values shown are based on the intermediate alternative II assumptions, or alternative II-B for years prior to 1991.

Appendices

TABLE III.D.1.—LONG-RANGE ACTUARIAL BALANCES FOR THE OASDI PROGRAM AS SHOWN FOR THE INTERMEDIATE ASSUMPTIONS¹ IN THE TRUSTEES REPORTS ISSUED IN YEARS 1983-1993

[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	-1.18
1988.....	12.94	13.52	-.58	+0.04
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	-.00

¹Values shown are based on the intermediate alternative II assumptions for 1991-93, and on the intermediate alternative II-B assumptions for 1982-90.

For several of the years included in the table, significant legislative changes or definitional changes have affected the estimated actuarial balance. The Social Security Amendments of 1983 accounted for the largest single change in the past 10 years. 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 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 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. Changes affecting the actuarial balance shown for the 1993 report are described in section II.F.2 of this report.

**E. ACTUARIAL ANALYSIS OF BENEFIT DISBURSEMENTS
FROM THE FEDERAL OLD-AGE AND SURVIVORS
INSURANCE TRUST FUND WITH RESPECT TO
DISABLED BENEFICIARIES**

(Required by section 201(c) of the Social Security Act)

Effective January 1957, monthly benefits have been payable from the OASI Trust Fund to disabled children aged 18 and over of retired and deceased workers in those cases for which the disability began before age 18. The age before which disability is required to have begun was subsequently changed to age 22. Effective February 1968, reduced monthly benefits have been payable from this trust fund to disabled widows and widowers at ages 50 and above. Effective January 1991, the requirements for the disability of the widow or widower were made less restrictive.

On December 31, 1992, about 715,000 persons were receiving monthly benefits from the OASI Trust Fund because of their disabilities or the disabilities of children. This total includes 48,000 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 \$3,456 million in calendar year 1992. Table III.E.1 shows these and similar figures for selected calendar years during 1960-92, and estimated experience for 1993-2002 based on the intermediate set of assumptions.

Appendices

TABLE III.E.1.— BENEFIT DISBURSEMENTS FROM THE OASI TRUST FUND WITH RESPECT TO DISABLED BENEFICIARIES, SELECTED CALENDAR YEARS 1960-1992, AND ESTIMATED FUTURE DISBURSEMENTS DURING 1993-2002 BASED ON INTERMEDIATE ASSUMPTIONS

[Beneficiaries in thousands; benefit payments in millions]

Calendar year	Disabled beneficiaries, end of year			Amount of benefit payments ¹		
	Total	Children ²	Widows-widowers	Total	Children ²	Widows-widowers ³
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	2,043	1,860	183
1986.....	614	565	49	2,198	2,001	197
1987.....	629	580	49	2,314	2,111	203
1988.....	640	591	49	2,503	2,292	211
1989.....	651	602	49	2,669	2,448	221
1990.....	662	613	49	2,875	2,642	233
1991.....	687	627	61	3,175	2,870	304
1992.....	715	643	72	3,456	3,076	380
Estimates:						
1993.....	736	663	73	3,720	3,295	425
1994.....	755	684	72	3,962	3,527	434
1995.....	776	705	71	4,223	3,778	445
1996.....	798	728	70	4,511	4,051	460
1997.....	823	753	70	4,828	4,350	478
1998.....	847	778	70	5,177	4,680	498
1999.....	872	803	69	5,562	5,044	518
2000.....	897	829	68	5,984	5,445	539
2001.....	921	855	67	6,434	5,877	557
2002.....	946	881	65	6,906	6,337	569

¹Beginning in 1966, includes payments for vocational rehabilitation services.

²Also includes certain mothers and fathers (see text).

³In 1983 and prior years, reflects the offsetting effect of lower benefits payable to disabled widows and widowers who continue to receive benefits after attaining age 60 (62, for disabled widowers, prior to 1973) as compared to the higher nondisabled widow's and widower's benefits that would otherwise be payable. In 1984 and later years, only 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, therefore, they are not receiving benefits solely because of a disability.

Total benefit payments from the OASI Trust Fund with respect to disabled beneficiaries are estimated to increase from \$3,720 million in calendar year 1993 to \$6,906 million in calendar year 2002, based on alternative II.

In calendar year 1992, 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 \$34,580 million, of which \$3,456 million, or 10.0 percent, represented payments from the OASI Trust Fund. These and similar figures for selected calendar years during 1960-92 and estimates for calendar years 1993-2002 are presented

OASI Expenditures for Disabled

in table III.E.2.

TABLE III.E.2.—BENEFIT DISBURSEMENTS UNDER THE OASDI PROGRAM WITH RESPECT TO DISABLED BENEFICIARIES, BY TRUST FUND, SELECTED CALENDAR YEARS 1960-1992, AND ESTIMATED FUTURE DISBURSEMENTS DURING 1993-2002 BASED ON INTERMEDIATE ASSUMPTIONS

[Amounts in millions]

Calendar year	Total ¹	OASI Trust Fund		Percentage of total
		DI Trust Fund ²	Amount ³	
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.....	20,879	18,836	2,043	9.8
1986.....	22,054	19,856	2,198	10.0
1987.....	22,841	20,527	2,314	10.1
1988.....	24,211	21,708	2,503	10.3
1989.....	25,581	22,911	2,669	10.4
1990.....	27,710	24,835	2,875	10.4
1991.....	30,872	27,698	3,175	10.3
1992.....	34,580	31,124	3,456	10.0
Estimates:				
1993.....	38,150	34,431	3,720	9.8
1994.....	41,893	37,931	3,962	9.5
1995.....	45,765	41,542	4,223	9.2
1996.....	49,890	45,379	4,511	9.0
1997.....	54,425	49,597	4,828	8.9
1998.....	59,183	54,006	5,177	8.7
1999.....	64,255	58,693	5,562	8.7
2000.....	69,653	63,669	5,984	8.6
2001.....	75,430	68,996	6,434	8.5
2002.....	81,621	74,715	6,906	8.5

¹Beginning in 1966, includes payments for vocational rehabilitation services.

²Benefit payments to disabled workers and their children and spouses.

³Benefit payments to disabled children aged 18 and over, to certain mothers and fathers (see text), and to disabled widows and widowers (see footnote 3, table III.E.1).

F. FEDERAL REGISTER NOTICE

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Office of the Secretary

1993 Cost-of-Living Increase and Other Determinations

AGENCY: Social Security Administration, HHS.

ACTION: Notice.

SUMMARY: The Secretary has determined —

(1) A 3.0 percent cost-of-living increase in Social Security benefits under title II, effective for December 1992;

(2) An increase in the Federal Supplemental Security Income (SSI) monthly benefit amounts under title XVI for 1993 to \$434 for an eligible individual, \$652 for an eligible individual with an eligible spouse, and \$217 for an essential person;

(3) The average of the total wages for 1991 to be \$21,811.60;

(4) The Old-Age, Survivors, and Disability Insurance (OASDI) contribution and benefit base to be \$57,600 for remuneration paid in 1993 and self-employment income earned in taxable years beginning in 1993;

(5) The Hospital Insurance contribution base to be \$135,000 for remuneration paid in 1993 and self-employment income earned in taxable years beginning in 1993;

(6) The monthly exempt amounts under the Social Security retirement earnings test for taxable years ending in calendar year 1993 to be \$880 for beneficiaries age 65 through 69 and \$640 for beneficiaries under age 65;

(7) The dollar amounts ("bend points") used in the benefit formula for workers who become eligible for benefits in 1993 and in the formula for computing maximum family benefits;

(8) The amount of earnings a person must have to be credited with a quarter of coverage in 1993 to be \$590;

(9) The "old-law" contribution and benefit base to be \$42,900 for 1993; and

(10) The OASDI fund ratio to be 96.4 percent for 1992.

FOR FURTHER INFORMATION CONTACT: Jeffrey L. Kunkel, Office of the Actuary, Social Security Administration, 6401 Security Boulevard, Baltimore, MD 21235, (410) 965-3013. A summary of the information in this announcement is available in a recorded message by telephoning (410) 965-3053. This telephone message will be updated to reflect changes to the cost-of-living benefit increase and other determinations.

SUPPLEMENTARY INFORMATION: The Secretary is required by the Social Security Act (the Act) to publish within 45 days after the close of the third calendar quarter of 1992 the benefit increase percentage and the revised table of "special minimum" benefits (section 215(i)(2)(D)). Also, the Sec-

retary is required to publish before November 1 the average of the total wages for 1991 (section 215(i)(2)(C)(ii)) and the OASDI fund ratio for 1992 (section 215(i)(2)(C)(ii)). Finally, the Secretary is required to publish on or before November 1 the OASDI contribution and benefit base for 1993 (section 230(a)), the amount of earnings required to be credited with a quarter of coverage in 1993 (section 213(d)(2)), the monthly exempt amounts under the Social Security retirement earnings test for 1993 (section 203(f)(8)(A)), the formula for computing a primary insurance amount for workers who first become eligible for benefits or die in 1993 (section 215(a)(1)(D)), and the formula for computing the maximum amount of benefits payable to the family of a worker who first becomes eligible for old-age benefits or dies in 1993 (section 203(a)(2)(C)).

Cost-of-Living Increases

General. The cost-of-living increase is 3.0 percent for benefits under titles II and XVI of the Act.

Under title II, OASDI benefits will increase by 3.0 percent beginning with the December 1992 benefits, which are payable on December 31, 1992. This increase is based on the authority contained in section 215(i) of the Act (42 U.S.C. 415(i)).

Under title XVI, Federal SSI payment levels will also increase by 3.0 percent effective for payments made for the month of January 1993 but paid on December 31, 1992. This is based on the authority contained in section 1617 of the Act (42 U.S.C. 1382f). The percentage increase effective January 1993 is the same as the title II percentage increase and the annual payment amount is rounded, when not a multiple of \$12, to the next lower multiple of \$12.

Automatic Benefit Increase Computation. Under section 215(i) of the Act, the third calendar quarter of 1992 is a cost-of-living computation quarter for all the purposes of the Act. The Secretary is, therefore, required to increase benefits, effective with December 1992, for individuals entitled under section 227 or 228 of the Act, to increase primary insurance amounts of all other individuals entitled under title II of the Act, and to increase maximum benefits payable to a family. For December 1992, the benefit increase is the percentage increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers from the third quarter of 1991 through the third quarter of 1992.

Section 215(i)(1) of the Act provides that the Consumer Price Index for a cost-of-living computation quarter shall be the arithmetic mean of this index for the 3 months in that quarter. The Department of Labor's Consumer Price Index for Urban Wage Earners and Clerical Workers for each month in the quarter ending September 30, 1991, was: for July 1991, 134.3; for August 1991, 134.6; and for September 1991, 135.2. The arithmetic mean for this calendar quarter is 134.7 (after rounding to the

nearest 0.1). The corresponding Consumer Price Index for each month in the quarter ending September 30, 1992, was: for July 1992, 138.4; for August 1992, 138.8; and for September 1992, 139.1. The arithmetic mean for this calendar quarter is 138.8. Thus, because the Consumer Price Index for the calendar quarter ending September 30, 1992, exceeds that for the calendar quarter ending September 30, 1991 by 3.0 percent, a cost-of-living benefit increase of 3.0 percent is effective for benefits under title II of the Act beginning December 1992.

Title II Benefit Amounts. In accordance with section 215(i) of the Act, in the case of insured workers and family members for whom eligibility for benefits (i.e., the worker's attainment of age 62, or disability or death before age 62) occurred before 1993, benefits will increase by 3.0 percent beginning with benefits for December 1992 which are payable on December 31, 1992. In the case of first eligibility after 1992, the 3.0 percent increase will not apply.

For eligibility after 1978, benefits are generally determined by a benefit formula provided by the Social Security Amendments of 1977 (Pub. L. 95-216), as described later in this notice.

For eligibility before 1979, benefits are determined by means of a benefit table. In accordance with section 215(i)(4) of the Act, the primary insurance amounts and the maximum family benefits shown in this table are revised by (1) increasing by 3.0 percent the corresponding amounts established by the last cost-of-living

increase and the last extension of the benefit table made under section 215(i)(4) (to reflect the increase in the OASDI contribution and benefit base for 1992); and (2) by extending the table to reflect the higher monthly wage and related benefit amounts now possible under the increased contribution and benefit base for 1993, as described later in this notice. A copy of this table may be obtained by writing to: Social Security Administration, Office of Public Inquiries, 4100 Annex, Baltimore, MD 21235.

Section 215(i)(2)(D) of the Act also requires that, when the Secretary determines an automatic increase in Social Security benefits, the Secretary shall publish in the FEDERAL REGISTER a revision of the range of the primary insurance amounts and corresponding maximum family benefits based on the dollar amount and other provisions described in section 215(a)(1)(C)(i). These benefits are referred to as "special minimum" benefits and are payable to certain individuals with long periods of relatively low earnings. To qualify for such benefits, an individual must have at least 11 "years of coverage." To earn a year of coverage for purposes of the special minimum, a person must earn at least a certain proportion (25 percent for years before 1991, and 15 percent for years after 1990) of the "old-law" contribution and benefit base. In accordance with section 215(a)(1)(C)(i), the table below shows the revised range of primary insurance amounts and corresponding maximum family benefit amounts after the 3.0 percent benefit increase.

Appendices

SPECIAL MINIMUM PRIMARY INSURANCE AMOUNTS AND MAXIMUM FAMILY BENEFITS

Primary insurance amount payable for Dec. 1991	No. of years required minimum earnings level	Primary insurance amount payable for Dec. 1992	Maximum family benefit payable for Dec. 1992
\$23.80	11	\$24.50	\$36.90
47.50	12	48.90	73.80
71.60	13	73.70	111.00
95.50	14	98.30	147.70
119.40	15	122.90	184.40
143.30	16	147.50	221.80
167.20	17	172.20	258.70
191.20	18	196.90	295.60
215.10	19	221.50	332.50
238.90	20	246.00	369.30
263.10	21	270.90	406.60
286.80	22	295.40	443.40
310.90	23	320.20	480.90
334.80	24	344.80	517.70
358.60	25	369.30	554.30
382.80	26	394.20	591.90
406.70	27	418.90	628.70
430.40	28	443.30	665.40
454.30	29	467.90	702.60
478.20	30	492.50	739.30

Section 227 of the Act provides flat-rate benefits to a worker who became age 72 before 1969 and was not insured under the usual requirements, and to his or her spouse or surviving spouse. Section 228 of the Act provides similar benefits at age 72 for certain uninsured persons. The current monthly benefit amount of \$173.60 for an individual under sections 227 and 228 of the Act is increased by 3.0 percent to obtain the new amount of \$178.80. The present monthly benefit amount of \$86.90 for a spouse under section 227 is increased by 3.0 percent to \$89.50.

Title XVI Benefit Amounts. In accordance with section 1617 of the Act, Federal SSI benefit amounts for the aged, blind, and disabled are increased by 3.0 percent effective January 1993. Therefore, the yearly Federal SSI benefit amounts of \$5,064 for an eligible individual, \$7,596 for an eligible individual with an eligible spouse, and \$2,532 for an essential person, which became effective January 1992, are increased, effective January 1993, to \$5,208, \$7,824, and \$2,604, respectively, after rounding. The corresponding monthly amounts for 1993 are determined by dividing the yearly amounts by 12, giving \$434, \$652, and \$217, respectively. The monthly amount is reduced by subtracting monthly countable income. In the case of an eligible individual with an eligible spouse,

the amount payable is further divided equally between the two spouses.

Averages of the Total Wages for 1991

General. Under various provisions of the Act, several amounts are scheduled to increase automatically for 1993. These include (1) the OASDI contribution and benefit base, (2) the Hospital Insurance (HI) contribution base, (3) the retirement test exempt amounts, (4) the dollar amounts, or "bend points," in the primary insurance amount and maximum family benefit formulas, (5) the amount of earnings required for a worker to be credited with a quarter of coverage, and (6) the "old law" contribution and benefit base (as determined under section 230 of the Act as in effect before the 1977 amendments). These amounts are based on the increase in the average of the total wages.

The Omnibus Budget Reconciliation Act of 1989 required that the OASDI contribution and benefit bases (including the "old law" bases) be increased using a "transitional rule" for years 1990, 1991, and 1992. (The HI contribution base for 1992 was similarly determined as a result of later legislation.) The transitional rule required that a deemed average wage, rather than the average of the total wages, be used in updating these amounts. The transitional rule is no longer in effect and these contribution bases are now based on the increase in the average of the total wages, as noted above. The deemed average wage is no longer needed or determined.

Computation. The determination of the average wage figure for 1991 is based on the 1990 average wage figure of \$21,027.98 announced in the FEDERAL REGISTER on October 25, 1991 (56 FR 55325), along with the percentage increase in average wages from 1990 to 1991 measured by annual wage data tabulated by the Social Security Administration (SSA). The wage data tabulated by SSA include, for the first time, contributions to deferred compensation plans, as required by section 209(k) of the Act. The average amounts of wages calculated directly from this data were \$20,172.11 and \$20,923.84 for 1990 and 1991, respectively. To determine an average wage figure for 1991 at a level that is consistent with the series of average wages for 1951 through 1977 (published December 29, 1978, at 43 FR 61016), we multiplied the 1990 average wage figure of \$21,027.98 by the percentage increase in average wages from 1990 to 1991 (based on SSA-tabulated wage data) as follows (with the result rounded to the nearest cent):

Amount. Average wage for 1991 =
 $\$21,027.98 \times \$20,923.84 + \$20,172.11 =$

\$21,811.60. Therefore, the average wage for 1991 is determined to be \$21,811.60.

OASDI Contribution and Benefit Base

General. The OASDI contribution and benefit base is \$57,600 for remuneration paid in 1993 and self-employment income earned in taxable years beginning in 1993.

The OASDI contribution and benefit base serves two purposes:

(a) It is the maximum annual amount of earnings on which OASDI taxes are paid. The OASDI tax rate for remuneration paid in 1993 is set by statute at 6.2 percent for employees and employers, each. The OASDI tax rate for self-employment income earned in taxable years beginning in 1993 is 12.4 percent.

(b) It is the maximum annual amount used in determining a person's OASDI benefits.

Computation. Section 230(c) of the Act provides a table with the contribution and benefit base for each year 1978, 1979, 1980, and 1981. For years after 1981, section 230(b) of the Act contains a formula for determining the OASDI contribution and benefit base. Under the prescribed formula, the base for 1993 shall be equal to the 1992 base of \$55,500 multiplied by the ratio of (1) the average amount, per employee, of total wages for calendar year 1991 to (2) the average amount of those wages for calendar year 1990. Section 230(b) further provides that if the amount so determined is not a multiple of \$300, it shall be rounded to the nearest multiple of \$300.

Average Wages. The average wage for calendar year 1990 was previously determined to be \$21,027.98. The average wage for calendar year 1991 has been determined to be \$21,811.60, as stated above.

Amount. The ratio of the average wage for 1991, \$21,811.60, compared to the average wage for 1990, \$21,027.98, is 1.0372656. Multiplying the 1992 OASDI contribution and benefit base amount of \$55,500 by the ratio of 1.0372656 produces the amount of \$57,568.24 which must then be rounded to \$57,600. Accordingly, the OASDI contribution and benefit base is determined to be \$57,600 for 1993.

Hospital Insurance Contribution Base

General. The HI contribution base is \$135,000 for remuneration paid in 1993 and self-employment income earned in taxable years beginning in 1993. The HI base is the maximum annual amount of earnings on which HI taxes are paid. The HI tax rate for remuneration paid in 1993 is set by statute at 1.45 percent for employees and employers, each. The HI tax rate for

self-employment income earned in taxable years beginning in 1993 is 2.9 percent.

Computation. The HI contribution base for 1993 shall be equal to the 1992 base of \$130,200 multiplied by the ratio of (1) the average amount, per employee, of total wages for calendar year 1991 to (2) the average amount of those wages for calendar year 1990. If the amount so determined is not a multiple of \$300, it shall be rounded to the nearest multiple of \$300.

Average Wages. The average wage for calendar year 1990 was previously determined to be \$21,027.98. The average wage for calendar year 1991 has been determined to be \$21,811.60, as stated above.

Amount. The ratio of the average wage for 1991, \$21,811.60, compared to the average wage for 1990, \$21,027.98, is 1.0372656. Multiplying the 1992 HI contribution base amount of \$130,200 by the ratio of 1.0372656 produces the amount of \$135,051.98 which must then be rounded to \$135,000. Accordingly, the HI contribution base is determined to be \$135,000 for 1993.

Retirement Earnings Test Exempt Amounts

General. Social Security benefits are withheld when a beneficiary under age 70 has earnings in excess of the retirement earnings test exempt amount. A formula for determining the monthly exempt amounts is provided in section 203(f)(8)(B) of the Act. The 1992 monthly exempt amounts were determined by the formula to be \$850 for beneficiaries aged 65-69 and \$620 for beneficiaries under age 65. Thus, the annual exempt amounts for 1992 were set at \$10,200 and \$7,440, respectively. For beneficiaries aged 65-69, \$1 in benefits is withheld for every \$3 of earnings in excess of the annual exempt amount. For beneficiaries under age 65, \$1 in benefits is withheld for every \$2 of earnings in excess of the annual exempt amount.

Computation. Under the formula provided in section 203(f)(8)(B) of the Act, each monthly exempt amount for 1993 shall be the corresponding 1992 monthly exempt amount multiplied by the ratio of (1) the average amount, per employee, of the total wages for calendar year 1991 to (2) the average amount of those wages for calendar year 1990. The section further provides that if the amount so determined is not a multiple of \$10, it shall be rounded to the nearest multiple of \$10.

Average Wages. The average wage for 1991, as determined above, is \$21,811.60. Therefore, the ratio of the average wages for 1991, \$21,811.60, compared to that for 1990, \$21,027.98, is 1.0372656.

Exempt Amount for Beneficiaries Aged 65 Through 69. Multiplying the 1992

Appendices

retirement earnings test monthly exempt amount of \$850 by the ratio of 1.0372656 produces the amount of \$881.68. This must then be rounded to \$880. The retirement earnings test monthly exempt amount for beneficiaries aged 65 through 69 is determined to be \$880 for 1993. The corresponding retirement earnings test annual exempt amount for these beneficiaries is \$10,560.

Exempt Amount for Beneficiaries Under Age 65. Multiplying the 1992 retirement earnings test monthly exempt amount of \$620 by the ratio 1.0372656 produces the amount of \$643.10. This must then be rounded to \$640. The retirement earnings test monthly exempt amount for beneficiaries under age 65 is thus determined to be \$640 for 1993. The corresponding retirement earnings test annual exempt amount for these beneficiaries is \$7,680.

Computing Benefits After 1978

General. The Social Security Amendments of 1977 provided a method for computing benefits which generally applies when a worker first becomes eligible for benefits after 1978. This method uses the worker's "average indexed monthly earnings" to compute the primary insurance amount. The computation formula is adjusted automatically each year to reflect changes in general wage levels.

A worker's earnings are adjusted, or "indexed," to reflect the change in general wage levels that occurred during the worker's years of employment. Such indexation ensures that a worker's future benefits reflect the general rise in the standard of living that occurs during his or her working lifetime. A certain number of years of earnings are needed to compute the average indexed monthly earnings. After the number of years is determined, those years with the highest indexed earnings are chosen, the indexed earnings are summed, and the total amount is divided by the total number of months in those years. The resulting average amount is then rounded down to the next lower dollar amount. The result is the average indexed monthly earnings.

For example, to compute the average indexed monthly earnings for a worker attaining age 62, becoming disabled before age 62, or dying before attaining age 62, in 1993, the average of the total wages for 1991, \$21,811.60, is divided by the average of the total wages for each year prior to 1991 in which the worker had earnings. The actual wages and self-employment income, as defined in section 211(b) of the Act and credited for each year, is multiplied by the corresponding ratio to obtain the worker's indexed earnings for each year before 1991.

Any earnings in 1991 or later are considered at face value, without indexing. The average indexed monthly earnings is then computed and used to determine the worker's primary insurance amount for 1993.

Computing the Primary Insurance

Amount. The primary insurance amount is the sum of three separate percentages of portions of the average indexed monthly earnings. In 1979 (the first year the formula was in effect), these portions were the first \$180, the amount between \$180 and \$1,085, and the amount over \$1,085. The dollar amounts in the formula which govern the portions of the average indexed monthly earnings are frequently referred to as the "bend points" of the formula. Thus, the bend points for 1979 were \$180 and \$1,085.

The bend points for 1993 are obtained by multiplying the corresponding 1979 bend-point amounts by the ratio between the average of the total wages for 1991, \$21,811.60, and for 1977, \$9,779.44. These results are then rounded to the nearest dollar. For 1993, the ratio is 2.2303527. Multiplying the 1979 amounts of \$180 and \$1,085 by 2.2303527 produces the amounts of \$401.46 and \$2,419.93. These must then be rounded to \$401 and \$2,420. Accordingly, the portions of the average indexed monthly earnings to be used in 1993 are determined to be the first \$401, the amount between \$401 and \$2,420, and the amount over \$2,420.

Consequently, for individuals who first become eligible for old-age insurance benefits or disability insurance benefits in 1993, or who die in 1993 before becoming eligible for benefits, we will compute their primary insurance amount by adding the following:

- (a) 90 percent of the first \$401 of their average indexed monthly earnings, plus
- (b) 32 percent of the average indexed monthly earnings over \$401 and through \$2,420, plus
- (c) 15 percent of the average indexed monthly earnings over \$2,420.

This amount is then rounded to the next lower multiple of \$.10 if it is not already a multiple of \$.10. This formula and the adjustments we have described are contained in section 215(a) of the Act (42 U.S.C. 415(a)).

Maximum Benefits Payable to a Family

General. The 1977 amendments continued the long established policy of limiting the total monthly benefits which a worker's family may receive based on his or her primary insurance amount. Those amendments also continued the then existing relationship between maximum family benefits and primary insurance amounts but did change the method of

computing the maximum amount of benefits which may be paid to a worker's family. The Social Security Disability Amendments of 1980 (Pub. L. 96-265) established a new formula for computing the maximum benefits payable to the family of a disabled worker. This new formula is applied to the family benefits of workers who first become entitled to disability insurance benefits after June 30, 1980, and who first become eligible for these benefits after 1978. The new formula was explained in a final rule published in the **FEDERAL REGISTER** on May 8, 1981, at 46 FR 25601. For disabled workers initially entitled to disability benefits before July 1980, or whose disability began before 1979, the family maximum payable is computed the same as the old-age and survivor family maximum.

Computing the Old-Age and Survivor Family Maximum. The formula used to compute the family maximum is similar to that used to compute the primary insurance amount. It involves computing the sum of four separate percentages of portions of the worker's primary insurance amount. In 1979, these portions were the first \$230, the amount between \$230 and \$332, the amount between \$332 and \$433, and the amount over \$433. The dollar amounts in the formula which govern the portions of the primary insurance amount are frequently referred to as the "bend points" of the family-maximum formula. Thus, the bend points for 1979 were \$230, \$332, and \$433.

The bend points for 1993 are obtained by multiplying the corresponding 1979 bend-point amounts by the ratio between the average of the total wages for 1991, \$21,811.60, and the average for 1977, \$9,779.44. This amount is then rounded to the nearest dollar. For 1993, the ratio is 2.2303527. Multiplying the amounts of \$230, \$332, and \$433 by 2.2303527 produces the amounts of \$512.98, \$740.48, and \$965.74. These amounts are then rounded to \$513, \$740, and \$966. Accordingly, the portions of the primary insurance amounts to be used in 1993 are determined to be the first \$513, the amount between \$513 and \$740, the amount between \$740 and \$966, and the amount over \$966.

Consequently, for the family of a worker who becomes age 62 or dies in 1993 before age 62, the total amount of benefits payable to them will be computed so that it does not exceed:

- (a) 150 percent of the first \$513 of the worker's primary insurance amount, plus
- (b) 272 percent of the worker's primary insurance amount over \$513 through \$740, plus
- (c) 134 percent of the worker's primary

insurance amount over \$740 through \$966, plus

(d) 175 percent of the worker's primary insurance amount over \$966.

This amount is then rounded to the next lower multiple of \$.10 if it is not already a multiple of \$.10. This formula and the adjustments we have described are contained in section 203(a) of the Act (42 U.S.C. 403(a)).

Quarter of Coverage Amount

General. The 1993 amount of earnings required for a quarter of coverage is \$590. A quarter of coverage is the basic unit for determining whether a worker is insured under the Social Security program. For years before 1978, an individual generally was credited with a quarter of coverage for each quarter in which wages of \$50 or more were paid, or an individual was credited with 4 quarters of coverage for every taxable year in which \$400 or more of self-employment income was earned. Beginning in 1978, wages generally are no longer reported on a quarterly basis; instead, annual reports are made. With the change to annual reporting, section 352(b) of the Social Security Amendments of 1977 (Pub. L. 95-216) amended section 213(d) of the Act to provide that a quarter of coverage would be credited for each \$250 of an individual's total wages and self-employment income for calendar year 1978 (up to a maximum of 4 quarters of coverage for the year).

Computation. Under the prescribed formula, the quarter of coverage amount for 1993 shall be equal to the 1978 amount of \$250 multiplied by the ratio of (1) the average amount, per employee, of total wages for calendar year 1991 to (2) the average amount of those wages reported for calendar year 1976. The section further provides that if the amount so determined is not a multiple of \$10, it shall be rounded to the nearest multiple of \$10.

Average Wages. The average wage for calendar year 1976 was previously determined to be \$9,226.48. This was published in the **FEDERAL REGISTER** on December 29, 1978, at 43 FR 61016. The average wage for calendar year 1991 has been determined to be \$21,811.60 as stated above.

Quarter of Coverage Amount. The ratio of the average wage for 1991, \$21,811.60, compared to that for 1976, \$9,226.48, is 2.3640218. Multiplying the 1978 quarter of coverage amount of \$250 by the ratio of 2.3640218 produces the amount of \$591.01, which must then be rounded to \$590. Accordingly, the quarter of coverage amount is determined to be \$590 for 1993.

"Old-Law" Contribution and Benefit Base

General. The 1993 "old-law" contribution

Appendices

and benefit base is \$42,900. This is the base that would have been effective under the Act without the enactment of the 1977 amendments. The base is computed under section 230(b) of the Act as it read prior to the 1977 amendments.

The "old-law" contribution and benefit base is used by:

(a) the Railroad Retirement program to determine certain tax liabilities and tier II benefits payable under that program to supplement the tier I payments which correspond to basic Social Security benefits,

(b) the Pension Benefit Guaranty Corporation to determine the maximum amount of pension guaranteed under the Employee Retirement Income Security Act (as stated in section 230(d) of the Act),

(c) Social Security to determine a year of coverage in computing the special minimum benefit, as described earlier, and

(d) Social Security to determine a year of coverage (equal to 25 percent of the "old-law" base for this purpose only) in computing benefits for persons who are also eligible to receive pensions based on employment not covered under section 210 of the Act.

Computation. The base is computed using the automatic adjustment formula in section 230(b) of the Act as it read prior to the enactment of the 1977 amendments. Under the formula, the "old-law" contribution and benefit base shall be the "old-law" 1992 base multiplied by the ratio of (1) the average amount, per employee, of total wages for calendar year 1991 to (2) the average amount of those wages for calendar year 1990. If the amount so determined is not a multiple of \$300, it shall be rounded to the nearest multiple of \$300.

Average Wages. The average wage for calendar year 1990 was previously determined to be \$21,027.98. The average wage for calendar year 1991 has been determined to be \$21,811.60, as stated above.

Amount. The ratio of the average wage for 1991, \$21,811.60, compared to the average wage for 1990, \$21,027.98, is 1.0372656. Multiplying the 1992 "old-law" contribution and benefit base amount of \$41,400 by the ratio of 1.0372656 produces the amount of \$42,942.80 which must then be rounded to \$42,900. Accordingly, the "old-law" contribution and benefit base is determined to be \$42,900 for 1993.

OASDI Fund Ratio

General. Section 215(i) of the Act provides for automatic cost-of-living increases in OASDI benefit amounts. This section also includes a "stabilizer" provision that can limit the automatic OASDI benefit increase under certain circumstances. If the combined

assets of the OASDI and DI Trust Funds, as a percentage of annual expenditures, are below a specified threshold, the automatic benefit increase is equal to the lesser of (1) the increase in average wages or (2) the increase in prices. The threshold specified for the OASDI fund ratio is 20.0 percent for benefit increases for December of 1989 and later. The law also provides for subsequent "catch-up" benefit increases for beneficiaries whose previous benefit increases were affected by this provision. "Catch-up" benefit increases can occur only when trust fund assets exceed 32.0 percent of annual expenditures.

Computation. Section 215(i) specifies the computation and application of the OASDI fund ratio. The OASDI fund ratio for 1992 is the ratio of (1) the combined assets of the OASDI and DI Trust Funds at the beginning of 1992 to (2) the estimated expenditures of the OASDI and DI Trust Funds during 1992, excluding transfer payments between the OASDI and DI Trust Funds, and reducing any transfers to the Railroad Retirement Account by any transfers from that account into either trust fund.

Ratio. The combined assets of the OASDI and DI Trust Funds at the beginning of 1992 equaled \$280,747 million, and the expenditures are estimated to be \$291,172 million. Thus, the OASDI fund ratio for 1992 is 96.4 percent, which exceeds the applicable threshold of 20.0 percent. Therefore, the stabilizer provision does not affect the benefit increase for December 1992. Although the OASDI fund ratio exceeds the 32.0-percent threshold for potential "catch-up" benefit increases, no past benefit increase has been reduced under the stabilizer provision. Thus, no "catch-up" benefit increase is required.

(Catalog of Federal Domestic Assistance: Program Nos. 93.800 Medicare-Hospital Insurance; 93.802 Social Security-Disability Insurance; 93.803 Social Security-Retirement Insurance; 93.804 Social Security-Special Benefits for Persons Aged 72 and Over; 93.805 Social Security-Survivors Insurance; 93.807 Supplemental Security Income.)

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Louis W. Sullivan,

Secretary of Health and Human Services

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G. GLOSSARY

Actuarial balance. The difference between the summarized income rate and the summarized cost rate over a given valuation period.

Actuarial deficit. A negative actuarial balance.

Adjusted gross income—AGI. Amount of income potentially subject to Federal income taxation, before consideration of exemptions and deductions.

Administrative expenses. Expenses incurred by the Department of Health and Human Services 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.

Advisory Council on Social Security. Under the Social Security Act, an Advisory Council is appointed every 4 years to study and review the financial status of the OASDI and Medicare programs. The most recent Advisory Council was appointed in 1989 and issued its reports in 1991. Under section 706 of the Social Security Act, the next Advisory council is to be named by the end of calendar year 1993.

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 factors which affect growth of the trust funds. Demographic assumptions include fertility, mortality, net immigration, marriage, divorce, retirement patterns, disability incidence and termination rates, and changes in the labor force. Economic assumptions include unemployment, average earnings, inflation, interest rates, and productivity. Three sets of economic assumptions are presented in the Trustees Report—

- (1) Alternative I is characterized as an "optimistic" set—it assumes relatively rapid economic growth, low inflation, and favorable

Appendices

(from the standpoint of program financing) demographic conditions.

- (2) Alternative II is the "intermediate" set of assumptions, with "best estimates" of future economic and demographic conditions.
- (3) Alternative III is more "pessimistic," with slow economic growth, more rapid inflation, and financially disadvantageous demographic conditions.

See tables II.D.1 and II.D.2.

Automatic cost-of-living increase. The annual increase in benefits, effective for December, reflecting the increase in the cost of living. The benefit increase equals the percentage increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers measured from the average over July, August, and September of the preceding year to the average for the same 3 months in the current year. If the increase is less than one-tenth of 1 percent, when rounded, there is no automatic increase for the current year; the increase for the next year would reflect the increase in the cost of living over a 2-year period. See table II.E.2.

If the "stabilizer provision" applies, the increase may be less than the cost of living.

Auxiliary beneficiary. Monthly benefits payable to a spouse or child of a retired or disabled worker, or to a survivor of a deceased worker.

Average indexed monthly earnings—AIME. The amount of earnings used in determining the primary insurance amount (PIA) for most workers who attain age 62, become disabled, or die after 1978. A worker's actual past earnings are adjusted by changes in the "average wage index," in order to bring them up to their approximately equivalent value at the time of retirement or other eligibility for benefits.

Average wage index. The average amount of total wages for each year after 1950, including wages in noncovered employment and wages in covered employment without regard to either the OASDI or HI contribution bases. These amounts are used to index the earnings of most workers first becoming eligible for benefits in 1979 or later, and for automatic adjustments in the contribution and benefit base, bend points, earnings test exempt amounts, and other wage-indexed amounts. See tables II.E.1, II.E.2, and III.B.1.

Award. An administrative determination that an individual is entitled to receive a specified type of OASDI benefit. Awards can represent not only new entrants to the benefit rolls but also persons already on the rolls who become entitled to a different type of benefit. Awards usually result in the immediate payment of benefits, although payments may be deferred or withheld depending on the individual's particular circumstances.

Baby boom. The period from the end of World War II through the mid-1960s marked by unusually high birth rates.

Bend points. The dollar amounts defining the AIME or PIA brackets

in the benefit formulas. For the bend points for years 1979 and later, see table II.E.3.

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 awards. See "Awards."

Benefit payments. The amounts disbursed for OASI and DI benefits by the Department of the Treasury in specified periods.

Benefit terminations. See "Terminations."

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 five members, three of whom serve automatically by virtue of their positions in the Federal Government: the Secretary of the Treasury, the Secretary of Labor, and the Secretary of Health and Human Services. The other two members are appointed by the President as public representatives: Stanford G. Ross and David M. Walker are currently serving 4-year terms that began on October 2, 1990. The Commissioner of Social Security serves as Secretary of the Board of Trustees.

Book value. A bond's value between its price at purchase and its value at maturity. Book value is calculated as par value plus unamortized premium, if purchased at a price above its par value, or less unamortized discount, if purchased below par.

COLA. See "Automatic cost-of-living increase."

Constant dollars. One or more financial amounts adjusted by the CPI to a constant year as a reference point.

Consumer Price Index—CPI. Relative measure of inflation. In this report, all references to the CPI relate to the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). See table II.D.1.

Contingency fund ratio. See "Trust fund ratio."

Contribution and benefit base. Annual dollar amount above which earnings in employment covered under the OASDI program are neither taxable nor creditable for benefit computation purposes. (Also referred to as "maximum contribution and benefit base," "annual creditable maximum," "taxable maximum," and "maximum taxable.") See tables II.B.1 and II.E.2. See also, "HI contribution base."

Contributions. The amount based on a percent of earnings, up to an annual maximum, that must be paid by—

- (1) employers and employees on wages from employment under the Federal Insurance Contributions Act,
- (2) the self-employed on net earnings from self-employment under the Self-Employed Contributions Act, and
- (3) 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

Appendices

equal amount of contributions, and pay both on a current basis. Also referred to as “taxes.”

Cost-of-living increase. See “Automatic cost-of-living increase.”

Cost rate. The cost rate for a year is the ratio of the cost (also called outgo, expenditures, or disbursements) of the program to the taxable payroll for the year. In this context, the outgo is defined to include benefit payments, special monthly payments to certain uninsured persons who have 3 or more quarters of coverage (and whose payments are therefore not reimbursable from the general fund of the Treasury), administrative expenses, net transfers from the trust funds to the Railroad Retirement program under the financial-interchange provisions, and payments for vocational rehabilitation services for disabled beneficiaries; it excludes special monthly payments to certain uninsured persons whose payments are reimbursable from the general fund of the Treasury (as described above), and transfers under the interfund borrowing provisions.

Covered earnings. Earnings in employment covered by the OASDI program.

Covered employment. All employment and self-employment creditable for Social Security purposes. Almost every kind of employment and self-employment is covered under the program. In a few employment situations, for example, religious orders under a vow of poverty, foreign affiliates of American employers, or State and local governments, coverage must be elected by the employer. However, effective July 1991, coverage is mandatory for State and local employees who are not participating in a public employee retirement system. In a few situations, for example, ministers or self-employed members of certain religious groups, workers can opt out of coverage.

Covered worker. A person who has earnings creditable for Social Security purposes on the basis of services for wages in covered employment and/or on the basis of income from covered self-employment.

Current-cost financing. See “Pay-as-you-go financing.”

Current dollars. Amounts expressed in nominal dollars with no adjustment for inflationary changes in the value of the dollar over time.

Current-payment status. Status of a beneficiary for whom a benefit is being paid for a given month (with or without deductions, provided the deductions add to less than a full month’s benefit). A benefit in current-payment status for a month is usually payable on the third day of the following month.

Deemed wage credit. See “Military service wage credits.”

Demographic assumptions. See “Assumptions.”

Disability. For Social Security purposes, the inability to engage in substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or to last for a continuous period of not less than 12 months. Special rules apply for workers age 55 or older whose disability is based on blindness.

The law generally requires that a person be disabled continuously

for 5 months before he or she can qualify for a disabled-worker benefit.

Disability incidence rate. The proportion of workers in a given year, insured for but not receiving disability benefits, who apply for and are awarded disability benefits.

Disability Insurance (DI) Trust Fund. See "Trust fund."

Disability termination rate. The proportion of disabled worker beneficiaries in a given year whose disability benefits terminate as a result of the individual's recovery, death, or attainment of normal retirement age.

Disabled-worker benefit. A monthly benefit payable to a disabled worker under normal retirement age and insured for disability. Before November 1960, disability benefits were limited to disabled workers aged 50-64.

Earnings. Unless otherwise qualified, all wages from employment and net earnings from self-employment, whether or not taxable or covered.

Earnings test. The provision requiring the withholding of benefits if beneficiaries under age 70 have earnings in excess of certain exempt amounts. See table II.E.3.

Economic assumptions. See "Assumptions."

Excess wages. Wages in excess of the contribution and benefit base on which a worker initially pays taxes (usually as a result of working for more than one employer during a year). Employee taxes on excess wages are refunded to affected employees, while the employer taxes are not refunded.

Federal Insurance Contributions Act—FICA. Provision authorizing taxes on the wages of employed persons to provide for Retirement, Survivors, and Disability Insurance, and for Hospital Insurance. The tax is paid in equal amounts by workers and their employers.

Financial interchange. Provisions of the Railroad Retirement Act providing for transfers between the trust funds and the Social Security Equivalent Benefit Account of the Railroad Retirement program in order to place each trust fund in the same position it would have been in if railroad employment had always been covered under Social Security.

Fiscal year. The accounting year of the United States Government. Since 1976, each fiscal year has begun on October 1 of the prior calendar year and ended the following September 30. For example, fiscal year 1993 began October 1, 1992 and will end September 30, 1993.

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

Appendices

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, including—

- (1) 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.
- (2) payments corresponding to the employee-employer taxes on deemed wage credits for military personnel.
- (3) 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.)
- (4) 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. 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.

Gross National Product. The total dollar value of all goods and services produced by labor and property supplied by United States residents, regardless of the location in which the production occurs.

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.") See table II.E.2.

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."

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 bor-

rowed assets from the DI and HI Trust Funds. The final repayment of borrowed amounts occurred in 1986.

Intermediate assumptions. See "Assumptions."

Interest. A payment in exchange for the use of money during a specified period.

Interest rate. See "Special public-debt obligation."

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.

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 other cash payments and wages in kind (such as food and shelter) in addition to their basic pay. Noncontributory wage credits of \$160 are 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. Noncontributory wage credits of \$300 for each calendar quarter in which a person receives pay for military service from January 1957 through December 1977 are granted in addition to contributory credits for basic pay. Deemed wage credits of \$100 are granted for each \$300 of military wages in years after 1977. (The maximum credits allowed in any calendar year are \$1,200.)

Normal retirement age. The age at which a person may first become entitled to unreduced retirement benefits. Currently age 65, but scheduled under present law to increase gradually to 67 for

persons reaching that age in 2027 or later, beginning with an increase to 65 years and 2 months for persons reaching age 65 in 2003. **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.

Optimistic assumptions. See "Assumptions."

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 build-up 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.

Payroll taxes. A tax levied on the gross wages of workers. See tables II.B.1 and III.A.1.

Pessimistic assumptions. See "Assumptions."

Present value. The equivalent value, at the present time, of a future stream of payments (either income or expenditures). The present value of a future stream of payments may be thought of as the lump-sum amount that, if invested today, together with interest earnings would be just enough to meet each of the payments as they fell due. At the time of the last payment, the invested fund would be exactly zero. For example, a home mortgage of \$100,000 represents the present value at 8 percent interest of future monthly payments of \$714.40 for the next 30 years. Present values are widely used in calculations involving financial transactions over long periods of time to account for the time value of money (interest) and the changing value of the dollar (inflation).

Primary insurance amount—PIA. The monthly amount payable to a retired worker who begins to receive benefits at normal retirement age or (generally) to a disabled worker. This amount, which is related to the worker's average monthly wage or average indexed monthly earnings, is also the amount used as a base for computing all types of benefits payable on the basis of one individual's earnings record.

Primary insurance amount formula. The mathematical formula

relating the PIA to the AIME for workers who attain age 62, become disabled, or die after 1978. The PIA is equal to the sum of 90 percent of AIME up to the first bend point, plus 32 percent of AIME above the first bend point up to the second bend point, plus 15 percent of AIME in excess of the second bend point. Automatic benefit increases are applied beginning with the year of eligibility. See table II.E.3.

Quarters of coverage. Basic unit of measurement for determining insured status. In 1993, a worker receives one quarter of coverage (up to a total of four) for each \$590 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 earnings. For amounts applicable for years after 1978, see table II.E.3.

Railroad retirement. A Federal insurance program, somewhat similar to Social Security, designed for workers in the railroad industry. The provisions of the Railroad Retirement Act provide for a system of coordination and financial interchange between the Railroad Retirement program and the Social Security program.

Reallocation of tax rates. An increase in the tax rate payable to either the OASI or DI Trust Fund, with a corresponding reduction in the rate for the other fund, so that the total OASDI tax rate is not changed.

Real-wage differential. The difference between the percentage increases in (1) the average annual wage in covered employment and (2) the average annual Consumer Price Index. See table II.D.1.

Recession. A period of adverse economic conditions; in particular, two or more successive calendar quarters of negative growth in either Gross Domestic Product (GDP), or Gross National Product (GNP).

Retired worker benefit. A monthly benefit payable to a fully insured retired worker aged 62 or older or to a person entitled under the transitionally insured status provision in the law. Retired-worker benefit data do not include special age-72 benefits.

Retirement age. The age at which an individual establishes entitlement to retirement benefits. See also, "Normal retirement age."

Retirement earnings test. See "Earnings test."

Retirement test. See "Earnings test."

Self-employment. Operation of a trade or business by an individual or by a partnership in which an individual is a member.

Self-Employment Contributions Act—SECA. Provision authorizing Social Security taxes on the net earnings of most self-employed persons.

Short range. The next 10 years. Short-range actuarial estimates are prepared for this period because of the short-range test of financial adequacy. The Social Security Act requires estimates for 5 years; estimates are prepared for an additional 5 years to help clarify trends which are only starting to develop in the mandated first 5-year period.

Social Security Act. Provisions of the law governing most operations of the Social Security program. Original Social Security Act is Public Law 74-271, enacted August 14, 1935. With subsequent

amendments, the Social Security Act consists of 20 titles, of which four have been repealed. The Old-Age, Survivors, and Disability Insurance program is authorized by Title II of the Social Security Act.

Special public-debt obligation. Securities of the United States Government issued exclusively to the OASI, DI, HI, and SMI Trust Funds and other Federal trust funds. Section 201(d) of the Social Security Act provides that the public-debt obligations issued for purchase by the OASI and DI Trust Funds shall have maturities fixed with due regard for the needs of the funds. The usual practice in the past has been to spread the holdings of special issues, as of each June 30, so that the amounts maturing in each of the next 15 years are approximately equal. Special public-debt obligations are redeemable at par at any time and carry interest rates equivalent to the average yield on all outstanding marketable U.S. securities not due to mature for at least 4 years. See table II.D.1.

Stabilizer provision. Section 215(i)(1)(C) of the Act, which provides that if the combined assets of the OASI and DI Trust Funds, as a percentage of estimated annual expenditures, fall below a specified level, automatic benefit increases will be limited to the lower of the increases in wages or prices. The specified level is 20 percent for benefit increases in 1989 and later.

Summarized balance. The difference between the summarized cost rate and the summarized income rate, expressed as a percentage of taxable payroll.

Summarized cost rate. The ratio of the present value of expenditures to the present value of the taxable payroll for the years in a given period. This ratio can be used as a measure of the relative level of expenditures during the period in question. For purposes of evaluating the financial adequacy of the program, the summarized cost rate is adjusted to include the cost of reaching and maintaining a "target" trust fund level. Because a trust fund level of about 1 year's expenditures is considered to be an adequate reserve for unforeseen contingencies, the targeted trust fund ratio used in determining summarized cost rates is 100 percent of annual expenditures. Accordingly, the adjusted summarized cost rate is equal to the ratio of (a) the sum of the present value of the outgo during the period plus the present value of the targeted ending trust fund level, to (b) the present value of the taxable payroll during the projection period.

Summarized income rate. The ratio of the present value of tax income to the present value of taxable payroll for the years in a given period. This ratio can be used as a measure of the relative level of income during the period in question. For purposes of evaluating the financial adequacy of the program, the summarized income rate is adjusted to include assets on hand at the beginning of the period. Accordingly, the adjusted summarized income rate equals the ratio of (a) the sum of the trust fund balance at the beginning of the period plus the present value of the total income from taxes during the period, to (b) the present value of the taxable payroll for the years in the period.

Supplemental Security Income—SSI. A Federally administered

program (often with State supplementation) of cash assistance for needy aged, blind, or disabled persons. SSI is funded through the general fund of the Treasury and administered by the Social Security Administration.

Supplementary Medical Insurance (SMI) Trust Fund. See "Trust fund."

Survivor benefit. Benefit payable to a survivor of a deceased worker.

Taxable earnings. Wages and/or self-employment income, in employment covered by the OASDI and/or HI programs, that is under the applicable annual maximum taxable limit.

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. Net earnings from self-employment, generally above \$400 and below the annual taxable and creditable maximum amount for a calendar or other taxable year, less any taxable wages in the same taxable year.

Taxable wages. See "Taxable earnings."

Taxation of benefits. Beginning in 1984, up to one-half of an individual's or a couple's OASDI benefits may be subject to Federal income taxation under certain circumstances. The revenue derived from this provision is allocated to the OASI and DI Trust Funds on the basis of the income taxes paid on the benefits from each 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

Appendices

combined, based on the intermediate (alternative II) set of assumptions.

Test of Short-Range Financial Adequacy. The conditions required to meet this test are as follows:

- If the trust fund ratio for a fund exceeds 100 percent at the beginning of the projection period, then it must be projected to remain at or above 100 percent throughout the 10-year projection period;
- Alternatively, if the fund ratio is initially less than 100 percent, it must be projected to reach a level of at least 100 percent within 5 years (and not be depleted at any time during this period) and then remain at or above 100 percent throughout the remainder of the 10-year period.

These conditions apply to each trust fund separately, as well as to the combined funds, and are evaluated based on the intermediate (alternative II) set of assumptions.

Total fertility rate. The average number of children who would be born to a woman in her lifetime if she were to experience the birth rates by age observed in, or assumed for, a specified year, and if she were to survive the entire child-bearing period.

Trust fund. Separate accounts in the United States Treasury in which are deposited the taxes received under the Federal Insurance Contributions Act, the Self-Employment Contributions Act, contributions resulting from coverage of State and local government employees; any sums received under the financial interchange with the railroad retirement account; voluntary hospital and medical insurance premiums; and transfers of Federal general revenues. Funds not withdrawn for current monthly or service benefits, the financial interchange, and administrative expenses are invested in interest-bearing Federal securities, as required by law; the interest earned is also deposited in the trust funds.

- **Old-Age and Survivors Insurance (OASI).** The trust fund used for paying monthly benefits to retired-worker (old-age) beneficiaries and their spouses and children and to survivors of deceased insured workers.
- **Disability Insurance (DI).** The trust fund used for paying monthly benefits to disabled-worker beneficiaries and their spouses and children and for providing rehabilitation services to the disabled.
- **Hospital Insurance (HI).** The trust fund used for paying part of the costs of inpatient hospital services and related care for aged and disabled individuals who meet the eligibility requirements.
- **Supplementary Medical Insurance (SMI).** The trust fund used for paying part of the costs of physician's services, outpatient hospital services, and other related medical and health services for voluntarily enrolled aged and disabled individuals.

Trust fund ratio. A measure of the adequacy of the trust fund level. Defined as the assets at the beginning of the year, including advance tax transfers (if any), expressed as a percentage of the outgo during

the year. The trust fund ratio represents the proportion of a year's outgo which could be paid with the funds available at the beginning of the year.

Unnegotiated check. A check which has not been cashed 6 months after the end of the month in which the check was issued. When a check has been outstanding for a year (i) the check is administratively cancelled by the Department of the Treasury and (ii) the issuing trust fund is reimbursed separately for the amount of the check and interest for the period the check was outstanding. The appropriate trust fund also receives an interest adjustment for the time the check was outstanding if it is cashed 6-12 months after the month of issue. If a check is presented for payment after it is administratively cancelled, a replacement check is issued.

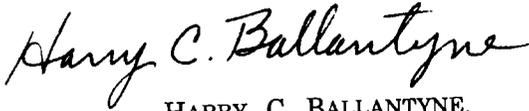
Valuation period. A period of years which is considered as a unit for purposes of calculating the financial status of a trust fund.

Vocational rehabilitation. Services provided to disabled persons to help enable them to return to gainful employment. Reimbursement from the trust funds for the costs of such services is made only in those cases where the services contributed to the successful rehabilitation of the beneficiaries.

Year of exhaustion. The year in which a trust fund would become unable to pay benefits when due because the assets of the fund were exhausted.

H. STATEMENT OF ACTUARIAL OPINION

It is my opinion that (1) the techniques and methodology used herein to evaluate the financial and actuarial status of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds are generally accepted within the actuarial profession; and (2) the assumptions used and the resulting actuarial estimates are, in the aggregate, reasonable for the purpose of evaluating the financial and actuarial status of the trust funds, taking into consideration the experience and expectations of the program.



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