E. ACTUARIAL STATUS OF THE TRUST FUNDS

Historically, the actuarial status of the OASDI program has been measured by the actuarial balance, as described earlier in this section. Recent annual reports have shown both medium-range and long-range actuarial balances, which have been computed, respectively, for the 25-year and 75-year valuation periods beginning with the calendar year of issuance of the report. Thus, the medium-range and long-range actuarial balances shown in this report, calculated on a level-financing basis, pertain to the periods 1989-2013 and 1989-2063, respectively. Also presented is the level-financing actuarial balance for the first 50 years of the 75-year projection period.

As described earlier in this section, a single measure of the actuarial balance over a long period may not reveal problems which could occur during that period. Therefore, in addition to the medium-range and long-range actuarial balances, other indicators of the financial conditions of the program are shown in this report. One is the series of projected annual balances (that is, the year-by-year differences between the projected income rates and cost rates), with particular attention being paid to the ultimate level of the annual balances and the time at which the annual balances may change from positive to negative values. Another is the series of projected contingency 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 negative 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 trend and general range of expected future program experience. Appendix B contains a more detailed discussion of the effects on the estimates of varying certain economic and demographic assumptions.

Table 26 presents a comparison of the estimated 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 F.

The projections for OASDI show income rates that increase slowly and steadily due to the combination of the flat payroll tax rate after 1989 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 about 20 years, to increase rather rapidly for the next 25 years, and to increase slowly thereafter. The relatively high cost rates during the third 25-year subperiod are at a level of about 16.0 percent of taxable payroll under the II-A assumptions and about 16.9 percent of taxable payroll under the II-B assumptions. The income rate during the third 25-year subperiod covers about 82 percent of the cost under alternative II-A and about 78 percent of the cost under alternative II-B.

Attention is called to the projected pattern of the OASDI annual balances (that is, the difference between the income rates and the cost rates). Under alternative II-A assumptions the annual balances are positive for about 30 years and change to negative balances thereafter. This annual deficit reaches 3.28 percent of taxable payroll by 2065. The pattern is similar under the alternative II-B assumptions, but early year positive balances are smaller and later deficits are larger. The deficit reaches 4.10 percent of taxable payroll by 2065 under alternative II-B.

TABLE 26.—COMPARISON OF ESTIMATED INCOME RATES AND COST RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1989-2065

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Total		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative I:									
1989	11.23	9.27	1.96	1.07	1.02	0.05	12.30	10.29	2.00
1990	11.38	9.26	2.12	1.21	1.00	.21	12.59	10.26	2.33
1991	11.38	9.14	2.24	1.21	.98	.23	12.59	10.12	2.48
1992	11.38	9.03	2.36	1.21	.96	.25	12.60	9.99	2.61
1993	11.39	8.91	2.48	1.21	.95	.26	12.60	9.86	2.73
1994	11.39	8.79	2.60	1.21	.95	.27	12.60	9.74	2.86
1995	11.38	8.66	2.73	1.21	.94	.27	12.60	9.60	2.99
1996	11.38	8.55	2.83	1.21	.95	.27	12.60	9.50	3.10
1997	11.38	8.45	2.93	1.21	.95	.26	12.59	9.40	3.19
1998	11.38	8.36	3.02	1.21	.96	.25	12.59	9.32	3.27
2000	11.19	8.19	3.00	1.43	.98	.45	12.62	9.17	3.45
2005	11.24	7.85	3.40	1.44	1.08	.36	12.68	8.93	3.76
2010	11.29	8.03	3.26	1.44	1.22	.22	12.73	9.25	3.48
2015	11.35	8.93	2.42	1.45	1.31	.13	12.79	10.24	2.55
2020	11.42	10.17	1.24	1.45	1.35	.09	12.86	11.53	1.34
2025	11.47	11.15	.32	1.45	1.42	.04	12.92	12.56	.36
2030	11.51	11.66	-.15	1.45	1.38	.07	12.96	13.05	-.09
2035	11.52	11.64	-.12	1.45	1.34	.11	12.97	12.98	-.01
2040	11.51	11.25	.26	1.45	1.32	.13	12.96	12.57	.38
2045	11.50	10.88	.61	1.45	1.35	.10	12.95	12.24	.71
2050	11.49	10.72	.77	1.45	1.36	.09	12.94	12.09	.86
2055	11.49	10.67	.82	1.45	1.36	.09	12.95	12.03	.92
2060	11.49	10.61	.88	1.45	1.34	.11	12.94	11.95	.99
2065	11.49	10.52	.97	1.45	1.34	.11	12.94	11.86	1.08
Alternative II-A:									
1989	11.23	9.32	1.91	1.07	1.04	.03	12.30	10.36	1.94
1990	11.39	9.33	2.07	1.21	1.03	.18	12.61	10.36	2.25
1991	11.39	9.32	2.07	1.21	1.02	.19	12.60	10.34	2.25
1992	11.39	9.26	2.13	1.21	1.02	.19	12.60	10.28	2.32
1993	11.39	9.20	2.19	1.21	1.02	.19	12.60	10.22	2.38
1994	11.40	9.13	2.27	1.21	1.03	.18	12.61	10.16	2.45
1995	11.39	9.06	2.34	1.21	1.04	.17	12.60	10.10	2.51
1996	11.39	8.99	2.41	1.21	1.05	.16	12.61	10.04	2.57
1997	11.39	8.94	2.46	1.21	1.07	.14	12.61	10.01	2.60
1998	11.39	8.88	2.51	1.21	1.09	.12	12.61	9.97	2.64

TABLE 26.—COMPARISON OF ESTIMATED INCOME RATES AND COST RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1989-2065 (Cont.)

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Total		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative II-A: (Cont.)									
2000	11.21	8.76	2.44	1.44	1.13	0.31	12.64	9.89	2.75
2005	11.27	8.54	2.73	1.44	1.27	.17	12.71	9.82	2.90
2010	11.33	8.83	2.50	1.45	1.47	-.03	12.78	10.30	2.48
2015	11.40	9.91	1.48	1.45	1.61	-.16	12.85	11.52	1.33
2020	11.48	11.44	.04	1.46	1.68	-.23	12.94	13.13	-.19
2025	11.56	12.78	-1.23	1.46	1.78	-.32	13.01	14.56	-1.55
2030	11.61	13.72	-2.11	1.46	1.77	-.31	13.07	15.48	-2.41
2035	11.64	14.07	-2.44	1.46	1.73	-.27	13.10	15.80	-2.71
2040	11.64	14.01	-2.36	1.46	1.74	-.28	13.10	15.75	-2.64
2045	11.65	13.93	-2.28	1.46	1.80	-.34	13.11	15.73	-2.62
2050	11.66	14.07	-2.41	1.46	1.84	-.38	13.12	15.90	-2.78
2055	11.67	14.33	-2.65	1.46	1.84	-.38	13.14	16.17	-3.03
2060	11.69	14.53	-2.84	1.46	1.82	-.36	13.15	16.35	-3.20
2065	11.69	14.61	-2.92	1.46	1.82	-.36	13.16	16.43	-3.28
Alternative II-B:									
1989	11.23	9.32	1.91	1.07	1.04	.03	12.30	10.36	1.94
1990	11.42	9.48	1.94	1.21	1.05	.17	12.63	10.52	2.11
1991	11.39	9.51	1.88	1.21	1.04	.17	12.60	10.55	2.05
1992	11.39	9.52	1.87	1.21	1.05	.17	12.61	10.57	2.04
1993	11.40	9.50	1.90	1.21	1.05	.16	12.61	10.56	2.05
1994	11.40	9.44	1.96	1.21	1.06	.15	12.61	10.50	2.11
1995	11.40	9.37	2.03	1.21	1.07	.15	12.61	10.44	2.17
1996	11.40	9.31	2.09	1.21	1.08	.13	12.61	10.39	2.22
1997	11.40	9.25	2.15	1.21	1.09	.12	12.61	10.35	2.27
1998	11.40	9.20	2.20	1.21	1.11	.10	12.61	10.31	2.30
2000	11.22	9.12	2.10	1.44	1.15	.28	12.65	10.27	2.38
2005	11.30	8.94	2.35	1.44	1.31	.14	12.74	10.25	2.49
2010	11.36	9.24	2.11	1.45	1.52	-.07	12.81	10.76	2.05
2015	11.43	10.37	1.06	1.45	1.66	-.20	12.88	12.03	.86
2020	11.51	11.97	-.45	1.46	1.73	-.27	12.97	13.70	-.73
2025	11.59	13.39	-1.80	1.46	1.83	-.37	13.06	15.23	-2.17
2030	11.65	14.41	-2.76	1.46	1.82	-.36	13.11	16.23	-3.11
2035	11.68	14.83	-3.14	1.46	1.78	-.32	13.14	16.61	-3.47
2040	11.69	14.79	-3.10	1.46	1.79	-.33	13.15	16.58	-3.43
2045	11.69	14.71	-3.02	1.46	1.86	-.39	13.15	16.56	-3.41
2050	11.70	14.84	-3.15	1.46	1.89	-.43	13.16	16.74	-3.58
2055	11.71	15.11	-3.39	1.46	1.89	-.43	13.18	17.00	-3.82
2060	11.73	15.32	-3.59	1.46	1.87	-.41	13.19	17.19	-4.00
2065	11.73	15.42	-3.69	1.46	1.87	-.41	13.20	17.29	-4.10
Alternative III:									
1989	11.23	9.56	1.68	1.07	1.09	-.02	12.30	10.65	1.65
1990	11.44	9.96	1.48	1.22	1.13	.08	12.65	11.09	1.56
1991	11.40	10.05	1.35	1.21	1.15	.07	12.61	11.20	1.41
1992	11.41	10.19	1.22	1.21	1.18	.04	12.62	11.37	1.26
1993	11.42	10.56	.86	1.21	1.25	-.03	12.64	11.81	.83
1994	11.42	10.51	.92	1.22	1.27	-.05	12.64	11.78	.86
1995	11.42	10.49	.94	1.22	1.30	-.09	12.64	11.79	.85
1996	11.42	10.44	.98	1.22	1.34	-.13	12.64	11.79	.86
1997	11.43	10.41	1.02	1.22	1.39	-.17	12.64	11.80	.85
1998	11.43	10.39	1.04	1.22	1.44	-.22	12.64	11.83	.82
2000	11.25	10.33	.92	1.44	1.48	-.04	12.69	11.81	.88
2005	11.34	10.18	1.17	1.45	1.64	-.19	12.79	11.82	.97
2010	11.42	10.51	.91	1.46	1.90	-.44	12.87	12.41	.46
2015	11.50	11.82	-.33	1.46	2.11	-.64	12.96	13.93	-.97
2020	11.60	13.79	-2.18	1.47	2.23	-.76	13.07	16.02	-2.94
2025	11.71	15.73	-4.03	1.47	2.39	-.92	13.18	18.12	-4.94
2030	11.80	17.42	-5.62	1.47	2.41	-.93	13.28	19.83	-6.55
2035	11.86	18.56	-6.69	1.48	2.41	-.93	13.34	20.96	-7.62
2040	11.90	19.22	-7.32	1.48	2.47	-.99	13.38	21.69	-8.31
2045	11.94	19.86	-7.92	1.48	2.61	-1.13	13.42	22.47	-9.05
2050	11.99	20.80	-8.81	1.48	2.70	-1.21	13.47	23.49	-10.02
2055	12.05	21.91	-9.87	1.48	2.71	-1.23	13.53	24.63	-11.10
2060	12.10	22.90	-10.80	1.48	2.67	-1.19	13.58	25.57	-11.99
2065	12.13	23.62	-11.48	1.48	2.67	-1.19	13.62	26.29	-12.67

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

Table 27 summarizes the projected annual figures presented in the previous table. Because any form of summarization involves choices of what to include and exclude in the summarized values, it is important to recognize that these summarized values should not be used as if they uniquely determined the status of the program or the financial effect of proposed modifications to it. These values are principally indicators that point towards possible significant situations projected for the future. As such, they are useful tools in an assessment of the long-range financial condition of the program.

Table 27 first shows the level-financing rates for each of the 25-year subperiods, excluding the funds on hand at the beginning of the period. The table next shows the level-financing rates including the funds on hand for valuation periods of the first 25 years, the first 50 years, and the first 75 years. Over the first 25-year valuation period, the OASDI program would have a positive actuarial balance under any of the four sets of assumptions. For a valuation period of the first 50 years, the program would have a positive actuarial balance under all but the most pessimistic set of assumptions, alternative III, which shows a deficit of 1.48 percent of taxable payroll. On the other hand, for the entire 75-year valuation period, the program would have actuarial deficits except for the most optimistic set of assumptions, alternative I. The actuarial balance for this long-range valuation period is projected to be -0.10 percent of taxable payroll, under alternative II-A, and -0.70 percent of taxable payroll under alternative II-B.

The values in table 27 show that the program would generally operate with positive balances over shorter valuation periods. For the first 25-year valuation period the summarizing values indicate that there would be positive balances of 3.40 percent of taxable payroll under alternative I, 2.74 percent under alternative II-A, 2.39 percent under II-B, and 1.10 percent under III. Thus, the program is more than adequately financed for the next 25-year valuation period under all four projections. Over a 50-year valuation period, 1989-2038, the program would have positive balances of 2.15 percent under alternative I, 0.94 percent under II-A, and 0.44 percent under II-B; and would have a deficit of 1.48 percent under the most pessimistic assumptions of alternative III. Thus, the program is more than adequately financed for the next 50-year valuation period under all but the most pessimistic set of assumptions.

TABLE 27.—COMPARISON OF SUMMARIZED INCOME RATES AND COST RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1989-2063

[As a percentage of taxable payroll]

Calendar year	OASI			DI			Total		
	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance	Income rate	Cost rate	Balance
Alternative I:									
25-year subperiods[1]:									
1989-2013.................	11.30	8.41	2.89	1.33	1.06	0.27	12.63	9.47	3.17
2014-2038.................	11.45	10.80	.65	1.45	1.37	.08	12.90	12.17	.73
2039-2063.................	11.49	10.82	.66	1.45	1.35	.10	12.94	12.17	.76
Valuation ranges[2]:									
25 years:1989-2013.	11.53	8.41	3.12	1.34	1.06	.29	12.87	9.47	3.40
50 years:1989-2038.	11.49	9.53	1.96	1.39	1.20	.19	12.98	10.73	2.15
75 years:1989-2063.	11.49	9.91	1.58	1.41	1.25	.16	12.90	11.16	1.74
Alternative II-A:									
25-year subperiods[1]:									
1989-2013.................	11.32	8.95	2.37	1.33	1.20	.12	12.65	10.16	2.50
2014-2038.................	11.53	12.50	-.97	1.46	1.72	-.27	12.99	14.23	-1.24
2039-2063.................	11.65	14.21	-2.56	1.46	1.81	-.35	13.11	16.03	-2.91
Valuation ranges[2]:									
25 years:1989-2013.	11.55	8.95	2.60	1.34	1.20	.14	12.90	10.16	2.74
50 years:1989-2038.	11.54	10.56	.98	1.39	1.44	-.04	12.94	12.00	.94
75 years:1989-2063.	11.57	11.54	.03	1.41	1.54	-.13	12.98	13.08	-.10
Alternative II-B:									
25-year subperiods[1]:									
1989-2013.................	11.34	9.29	2.05	1.33	1.23	.09	12.67	10.52	2.14
2014-2038.................	11.57	13.13	-1.56	1.46	1.77	-.32	13.03	14.91	-1.88
2039-2063.................	11.69	15.00	-3.31	1.46	1.87	-.41	13.15	16.87	-3.72
Valuation ranges[2]:									
25 years:1989-2013.	11.57	9.29	2.28	1.34	1.23	.11	12.91	10.52	2.39
50 years:1989-2038.	11.57	11.04	.52	1.40	1.48	-.09	12.96	12.52	.44
75 years:1989-2063.	11.60	12.13	-.53	1.41	1.59	-.17	13.02	13.72	-.70
Alternative III:									
25-year subperiods[1]:									
1989-2013.................	11.37	10.36	1.01	1.33	1.51	-.18	12.70	11.87	.83
2014-2038.................	11.68	15.63	-3.94	1.47	2.32	-.85	13.15	17.95	-4.79
2039-2063.................	11.98	21.04	-9.06	1.48	2.64	-1.16	13.46	23.68	-10.22
Valuation ranges[2]:									
25 years:1989-2013.	11.63	10.36	1.27	1.34	1.51	-.16	12.97	11.87	1.10
50 years:1989-2038.	11.65	12.67	-1.02	1.40	1.86	-.47	13.05	14.54	-1.48
75 years:1989-2063.	11.73	14.73	-2.99	1.42	2.06	-.64	13.15	16.78	-3.63

[1]Income rates do not include beginning trust fund balances.

[2]Income rates do include beginning trust fund balances.

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

Also of interest are the long-range financial conditions of the separate OASI and DI programs. As may be concluded from tables 26 and 27, the OASI program is in much better financial condition than the DI program. The OASI program could operate for many decades into the future under all but the most pessimistic assumptions in alternative III, but the DI program would be able to do so only under the most optimistic assumptions in alternative I. The OASI program is projected to have a long-range positive balance of 0.03 percent and a deficit of 0.53 percent of taxable payroll under the II-A and II-B assumptions, respectively, over the 75-year valuation period (including the beginning trust fund balances). The DI program is projected to have long-range actuarial deficits of 0.13 percent and 0.17 percent of taxable payroll under alternatives II-A and II-B, respectively (including the beginning trust fund balances).

Tables 26 and 27 also illustrate the spread of possible long-range costs and actuarial balances. For OASI, the cost rate projected for 2065 ranges from a low of 10.52 percent of taxable payroll under alternative I to a high of 23.62 percent of taxable payroll under alternative III. The balances for that year are projected to range from a positive balance of 0.97 percent under alternative I to a deficit of 11.48 percent under alternative III. The summarized cost rate for the 75-year valuation period is projected to range from a low of 9.91 percent under alternative I to a high of 14.73 percent under alternative III. The long-range actuarial balances for the entire 75-year period range from a positive balance of 1.58 percent under alternative I to a deficit of 2.99 percent of taxable payroll under alternative III.

The spread in the DI cost for 2065 is from a low of 1.34 percent of taxable payroll under alternative I to a high of 2.67 percent of taxable payroll under alternative III. The summarized cost rate for the 75-year period ranges from a low of 1.25 percent of taxable payroll under alternative I to a high of 2.06 percent of taxable payroll under alternative III. The DI long-range actuarial balance ranges from a positive balance of 0.16 percent of taxable payroll under alternative I to a deficit of 0.64 percent of taxable payroll under alternative III.

The spread between the lowest and highest projected annual cost rates and balances grows wider as the projections move further into the future. For OASDI the projected spread of cost rates in 2000 is 2.64 percent of taxable payroll (from 9.17 percent to 11.81 percent for alternatives I and III, respectively). By 2025 the spread is projected to increase to 5.56 percent of taxable payroll (from 12.56 percent to 18.12 percent) and by 2050 it is 11.40 percent of taxable payroll (from 12.09 percent to 23.49 percent). Because of the even greater uncertainty in projecting costs and revenues in the more distant future, the Board recommends caution in using the specific values projected.

Figure 2 shows in graphical form the patterns of the OASDI annual income rates and cost rates. The income rates are shown only for alternative II-B in order to simplify the graphical presentation and because, as shown in table 26, 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 next 75 years differ by only 0.25 percent of taxable payroll. By 2065, the income rates for each year, under alternatives I and III, differ by only 0.67 percent of taxable payroll. The income rates in figure 2 and table 26 show a distinct increase in 1990, when the payroll-tax rate is scheduled to rise under present law. Thereafter, only small fluctuations are projected, 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 2. 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 2.—ESTIMATED OASDI INCOME RATES AND COST RATES BY
ALTERNATIVE, CALENDAR YEARS 1988-2065

[As a percentage of taxable payroll]
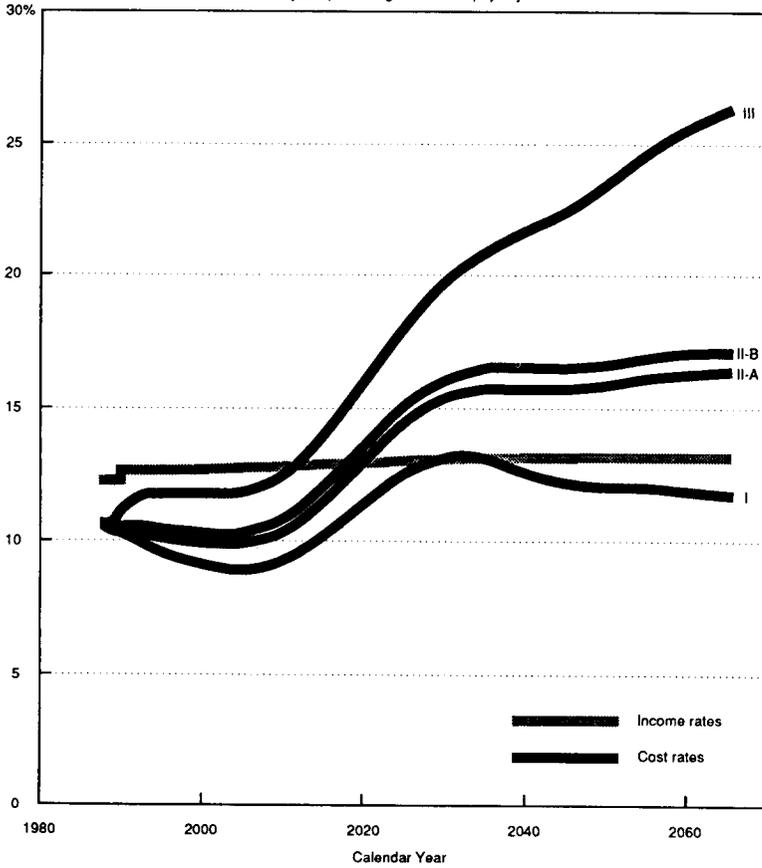
The components of the annual income rates are shown in table 28, for each alternative set of assumptions. The income rates reflect the effects of the tax-rate increase scheduled for 1990 and small changes in the rate of income from the taxation of benefits, reflecting changes in the cost rate and the fact that benefit-taxation threshold amounts are not indexed. Summarized values for the annual rates shown in table 28 are presented in table 29.

TABLE 28.—ESTIMATED INCOME RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1989-2065

[As a percentage of taxable payroll]

Calendar year	OASI Payroll tax	OASI Taxation of benefits	OASI Total	DI Payroll tax	DI Taxation of benefits	DI Total	Total Payroll tax	Total Taxation of benefits	Total Total
Alternative I:									
1989	11.06	0.17	11.23	1.06	0.01	1.07	12.12	0.18	12.30
1990	11.20	.18	11.38	1.20	.01	1.21	12.40	.19	12.59
1991	11.20	.18	11.38	1.20	.01	1.21	12.40	.19	12.59
1992	11.20	.18	11.38	1.20	.01	1.21	12.40	.20	12.60
1993	11.20	.19	11.39	1.20	.01	1.21	12.40	.20	12.60
1994	11.20	.19	11.39	1.20	.01	1.21	12.40	.20	12.60
1995	11.20	.18	11.38	1.20	.01	1.21	12.40	.20	12.60
1996	11.20	.18	11.38	1.20	.01	1.21	12.40	.20	12.60
1997	11.20	.18	11.38	1.20	.01	1.21	12.40	.19	12.59
1998	11.20	.18	11.38	1.20	.01	1.21	12.40	.19	12.59
2000	10.98	.21	11.19	1.42	.01	1.43	12.40	.22	12.62
2005	10.98	.26	11.24	1.42	.02	1.44	12.40	.28	12.68
2010	10.98	.31	11.29	1.42	.02	1.44	12.40	.33	12.73
2015	10.98	.37	11.35	1.42	.03	1.45	12.40	.39	12.79
2020	10.98	.44	11.42	1.42	.03	1.45	12.40	.46	12.86
2025	10.98	.49	11.47	1.42	.03	1.45	12.40	.52	12.92
2030	10.98	.53	11.51	1.42	.03	1.45	12.40	.56	12.96
2035	10.98	.54	11.52	1.42	.03	1.45	12.40	.57	12.97
2040	10.98	.53	11.51	1.42	.03	1.45	12.40	.56	12.96
2045	10.98	.52	11.50	1.42	.03	1.45	12.40	.55	12.95
2050	10.98	.51	11.49	1.42	.03	1.45	12.40	.54	12.94
2055	10.98	.51	11.49	1.42	.03	1.45	12.40	.55	12.95
2060	10.98	.51	11.49	1.42	.03	1.45	12.40	.54	12.94
2065	10.98	.51	11.49	1.42	.03	1.45	12.40	.54	12.94
Alternative II-A:									
1989	11.06	.17	11.23	1.06	.01	1.07	12.12	.18	12.30
1990	11.20	.19	11.39	1.20	.01	1.21	12.40	.21	12.61
1991	11.20	.19	11.39	1.20	.01	1.21	12.40	.20	12.60
1992	11.20	.19	11.39	1.20	.01	1.21	12.40	.20	12.60
1993	11.20	.19	11.39	1.20	.01	1.21	12.40	.20	12.60
1994	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
1995	11.20	.19	11.39	1.20	.01	1.21	12.40	.20	12.60
1996	11.20	.19	11.39	1.20	.01	1.21	12.40	.21	12.61
1997	11.20	.19	11.39	1.20	.01	1.21	12.40	.21	12.61
1998	11.20	.19	11.39	1.20	.01	1.21	12.40	.21	12.61
2000	10.98	.23	11.21	1.42	.02	1.44	12.40	.24	12.64
2005	10.98	.29	11.27	1.42	.02	1.44	12.40	.31	12.71
2010	10.98	.35	11.33	1.42	.03	1.45	12.40	.38	12.78
2015	10.98	.42	11.40	1.42	.03	1.45	12.40	.45	12.85
2020	10.98	.50	11.48	1.42	.04	1.46	12.40	.54	12.94
2025	10.98	.58	11.56	1.42	.04	1.46	12.40	.61	13.01
2030	10.98	.63	11.61	1.42	.04	1.46	12.40	.67	13.07
2035	10.98	.66	11.64	1.42	.04	1.46	12.40	.70	13.10
2040	10.98	.66	11.64	1.42	.04	1.46	12.40	.70	13.10
2045	10.98	.67	11.65	1.42	.04	1.46	12.40	.71	13.11
2050	10.98	.68	11.66	1.42	.04	1.46	12.40	.72	13.12
2055	10.98	.69	11.67	1.42	.04	1.46	12.40	.74	13.14
2060	10.98	.71	11.69	1.42	.04	1.46	12.40	.75	13.15
2065	10.98	.71	11.69	1.42	.04	1.46	12.40	.76	13.16
Alternative II-B:									
1989	11.06	.17	11.23	1.06	.01	1.07	12.12	.18	12.30
1990	11.20	.22	11.42	1.20	.01	1.21	12.40	.23	12.63
1991	11.20	.19	11.39	1.20	.01	1.21	12.40	.20	12.60
1992	11.20	.19	11.39	1.20	.01	1.21	12.40	.21	12.61
1993	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
1994	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
1995	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
1996	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
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

TABLE 28.—ESTIMATED INCOME RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR
YEARS 1989-2065 (Cont.)

[As a percentage of taxable payroll]

Calendar year	OASI Payroll tax	OASI Taxation of benefits	OASI Total	DI Payroll tax	DI Taxation of benefits	DI Total	Total Payroll tax	Total Taxation of benefits	Total Total
Alternative II-B: (Cont.)									
2000	10.98	0.24	11.22	1.42	0.02	1.44	12.40	0.25	12.65
2005	10.98	.32	11.30	1.42	.02	1.44	12.40	.34	12.74
2010	10.98	.38	11.36	1.42	.03	1.45	12.40	.41	12.81
2015	10.98	.45	11.43	1.42	.03	1.45	12.40	.48	12.88
2020	10.98	.53	11.51	1.42	.04	1.46	12.40	.57	12.97
2025	10.98	.61	11.59	1.42	.04	1.46	12.40	.66	13.06
2030	10.98	.67	11.65	1.42	.04	1.46	12.40	.71	13.11
2035	10.98	.70	11.68	1.42	.04	1.46	12.40	.74	13.14
2040	10.98	.71	11.69	1.42	.04	1.46	12.40	.75	13.15
2045	10.98	.71	11.69	1.42	.04	1.46	12.40	.75	13.15
2050	10.98	.72	11.70	1.42	.04	1.46	12.40	.76	13.16
2055	10.98	.73	11.71	1.42	.04	1.46	12.40	.78	13.18
2060	10.98	.75	11.73	1.42	.04	1.46	12.40	.79	13.19
2065	10.98	.75	11.73	1.42	.04	1.46	12.40	.80	13.20
Alternative III:									
1989	11.06	.17	11.23	1.06	.01	1.07	12.12	.18	12.30
1990	11.20	.24	11.44	1.20	.02	1.22	12.40	.25	12.65
1991	11.20	.20	11.40	1.20	.01	1.21	12.40	.21	12.61
1992	11.20	.21	11.41	1.20	.01	1.21	12.40	.22	12.62
1993	11.20	.22	11.42	1.20	.01	1.21	12.40	.24	12.64
1994	11.20	.22	11.42	1.20	.02	1.22	12.40	.24	12.64
1995	11.20	.22	11.42	1.20	.02	1.22	12.40	.24	12.64
1996	11.20	.22	11.42	1.20	.02	1.22	12.40	.24	12.64
1997	11.20	.23	11.43	1.20	.02	1.22	12.40	.24	12.64
1998	11.20	.23	11.43	1.20	.02	1.22	12.40	.24	12.64
2000	10.98	.27	11.25	1.42	.02	1.44	12.40	.29	12.69
2005	10.98	.36	11.34	1.42	.03	1.45	12.40	.39	12.79
2010	10.98	.44	11.42	1.42	.04	1.46	12.40	.47	12.87
2015	10.98	.52	11.50	1.42	.04	1.46	12.40	.56	12.96
2020	10.98	.62	11.60	1.42	.05	1.47	12.40	.67	13.07
2025	10.98	.73	11.71	1.42	.05	1.47	12.40	.78	13.18
2030	10.98	.82	11.80	1.42	.05	1.47	12.40	.88	13.28
2035	10.98	.88	11.86	1.42	.06	1.48	12.40	.94	13.34
2040	10.98	.92	11.90	1.42	.06	1.48	12.40	.98	13.38
2045	10.98	.96	11.94	1.42	.06	1.48	12.40	1.02	13.42
2050	10.98	1.01	11.99	1.42	.06	1.48	12.40	1.07	13.47
2055	10.98	1.07	12.05	1.42	.06	1.48	12.40	1.13	13.53
2060	10.98	1.12	12.10	1.42	.06	1.48	12.40	1.18	13.58
2065	10.98	1.15	12.13	1.42	.06	1.48	12.40	1.22	13.62

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

TABLE 29.—SUMMARIZED INCOME RATES BY TRUST FUND AND ALTERNATIVE, CALENDAR
YEARS 1989-2065

[As a percentage of taxable payroll]

Calendar year	OASI Payroll tax	OASI Taxation of bene-fits	OASI Total	DI Payroll tax	DI Taxation of bene-fits	DI Total	Total Payroll tax	Total Taxation of bene-fits	Total Total
Alternative I:									
25 years :1989-2013....	11.07	0.23	11.30	1.31	0.02	1.33	12.38	0.25	12.63
50 years :1989-2038....	11.02	.35	11.37	1.36	.02	1.38	12.39	.37	12.76
75 years :1989-2063....	11.01	.40	11.41	1.38	.02	1.40	12.39	.42	12.81
Alternative II-A:									
25 years :1989-2013....	11.07	.25	11.32	1.31	.02	1.33	12.38	.27	12.65
50 years :1989-2038....	11.02	.39	11.42	1.36	.03	1.39	12.38	.42	12.80
75 years :1989-2063....	11.01	.47	11.48	1.38	.03	1.41	12.39	.50	12.89
Alternative II-B:									
25 years :1989-2013....	11.07	.27	11.34	1.31	.02	1.33	12.38	.29	12.67
50 years :1989-2038....	11.02	.42	11.44	1.36	.03	1.39	12.38	.45	12.83
75 years :1989-2063....	11.01	.50	11.51	1.38	.03	1.41	12.38	.54	12.92
Alternative III:									
25 years :1989-2013....	11.07	.30	11.37	1.30	.02	1.33	12.37	.33	12.70
50 years :1989-2038....	11.02	.49	11.51	1.35	.04	1.39	12.38	.52	12.90
75 years :1989-2063....	11.01	.62	11.63	1.37	.04	1.41	12.38	.66	13.04

Note: Totals exclude beginning trust fund balances but are otherwise equivalent to summarized income rates shown in table 27. Totals do not necessarily equal the sums of rounded components.

The primary reason that the estimated OASDI cost rate increases rapidly after 2005 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 30.

TABLE 30.—COMPARISON OF OASDI COVERED WORKERS AND BENEFICIARIES BY ALTERNATIVE, CALENDAR YEARS 1945-2065

Calendar year	Covered workers[1] (in thousands)	Beneficiaries[2] (in thousands)			Covered workers per OASDI beneficiary	Beneficiaries per 100 covered workers
		OASI	DI	Total		
Past experience:						
1945	46,930	1,106	—	1,106	42.4	2
1950	48,280	2,930	—	2,930	16.5	6
1955	65,200	7,563	—	7,563	8.6	12
1960	72,530	13,740	522	14,262	5.1	20
1965	80,680	18,509	1,648	20,157	4.0	25
1970	93,090	22,618	2,568	25,186	3.7	27
1975	100,200	26,998	4,125	31,123	3.2	31
1980	112,212	30,385	4,734	35,119	3.2	31
1985	³119,853	32,776	3,874	36,650	3.3	³31
1986	³122,700	33,349	3,972	37,321	3.3	³30
1987	³124,900	33,917	4,034	37,952	3.3	³30
1988	³128,000	34,343	4,077	38,421	3.3	³30
Alternative I:						
1989	129,910	34,788	4,112	38,901	3.3	30
1990	131,565	35,438	4,125	39,563	3.3	30
1995	138,987	37,332	4,266	41,598	3.3	30
2000	145,795	38,396	4,794	43,189	3.4	30
2005	152,450	39,537	5,414	44,951	3.4	29
2010	156,955	42,306	6,130	48,436	3.2	31
2015	159,321	47,620	6,551	54,172	2.9	34
2020	160,747	54,348	6,783	61,130	2.6	38
2025	162,331	60,582	7,152	67,734	2.4	42
2030	165,004	65,192	7,151	72,343	2.3	44
2035	168,673	67,447	7,099	74,546	2.3	44
2040	172,536	67,531	7,192	74,724	2.3	43
2045	176,397	67,393	7,506	74,899	2.4	42
2050	180,424	67,944	7,753	75,696	2.4	42
2055	184,883	69,143	7,937	77,081	2.4	42
2060	189,723	70,500	8,086	78,586	2.4	41
2065	194,668	71,822	8,306	80,128	2.4	41
Alternative II-A:						
1989	129,772	34,791	4,121	38,913	3.3	30
1990	131,281	35,452	4,166	39,618	3.3	30
1995	137,521	37,536	4,538	42,074	3.3	31
2000	143,377	38,947	5,270	44,217	3.2	31
2005	149,002	40,467	6,104	46,571	3.2	31
2010	152,593	43,551	7,034	50,585	3.0	33
2015	153,595	49,190	7,601	56,791	2.7	37
2020	153,168	56,275	7,892	64,167	2.4	42
2025	152,396	62,876	8,300	71,175	2.1	47
2030	152,183	67,958	8,250	76,209	2.0	50
2035	152,539	70,725	8,136	78,861	1.9	52
2040	152,778	71,281	8,177	79,458	1.9	52
2045	152,664	71,494	8,451	79,945	1.9	52
2050	152,355	72,272	8,602	80,874	1.9	53
2055	152,162	73,472	8,621	82,093	1.9	54
2060	152,183	74,475	8,552	83,027	1.8	55
2065	152,248	75,096	8,567	83,663	1.8	55
Alternative II-B:						
1989	129,538	34,791	4,121	38,913	3.3	30
1990	130,708	35,452	4,166	39,618	3.3	30
1995	136,765	37,536	4,538	42,074	3.3	31
2000	142,124	38,944	5,268	44,212	3.2	31
2005	147,400	40,462	6,099	46,560	3.2	32
2010	150,989	43,542	7,024	50,566	3.0	33
2015	151,997	49,176	7,586	56,762	2.7	37
2020	151,591	56,255	7,873	64,129	2.4	42
2025	150,826	62,849	8,277	71,127	2.1	47
2030	150,613	67,925	8,225	76,151	2.0	51
2035	150,950	70,684	8,110	78,794	1.9	52
2040	151,192	71,232	8,149	79,381	1.9	53

TABLE 30.—COMPARISON OF OASDI COVERED WORKERS AND BENEFICIARIES
BY ALTERNATIVE CALENDAR YEARS 1945-2065 (Cont.)

Calendar year	Covered workers[1] (in thousands)	Beneficiaries[2] (in thousands)			Covered workers per OASDI beneficiary	Beneficiaries per 100 covered workers
		OASI	DI	Total		
Alternative II-B: (Cont.)						
2045	151,088	71,438	8,422	79,860	1.9	53
2050	150,776	72,208	8,572	80,780	1.9	54
2055	150,592	73,400	8,592	81,992	1.8	54
2060	150,606	74,398	8,523	82,920	1.8	55
2065	150,672	75,016	8,537	83,553	1.8	55
Alternative III:						
1989	129,049	34,794	4,147	38,941	3.3	30
1990	128,276	35,465	4,244	39,710	3.2	31
1995	133,604	37,726	5,029	42,756	3.1	32
2000	138,702	39,445	5,899	45,344	3.1	33
2005	142,672	41,329	7,018	48,347	3.0	34
2010	145,190	44,741	8,207	52,948	2.7	36
2015	144,906	50,763	8,930	59,693	2.4	41
2020	142,821	58,322	9,265	67,587	2.1	47
2025	140,001	65,458	9,705	75,163	1.9	54
2030	137,233	71,275	9,589	80,864	1.7	59
2035	134,680	74,911	9,409	84,320	1.6	63
2040	131,775	76,402	9,394	85,796	1.5	65
2045	128,318	77,486	9,623	87,109	1.5	68
2050	124,434	79,021	9,638	88,659	1.4	71
2055	120,526	80,702	9,420	90,123	1.3	75
2060	116,916	81,741	9,040	90,781	1.3	78
2065	113,482	81,923	8,777	90,700	1.3	80

[1]Workers who pay OASDI taxes at some time during the year.

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

[3]Preliminary.

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 16,031 as of June 30, 1988, 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 30 shows that the number of covered workers per beneficiary, which was about 3.3 in 1988, 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 2.3 by 2030 and then rises to 2.4. 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. Based on alternatives II-A and II-B, the ratio declines to 1.8 workers per beneficiary.

The impact of the demographic shifts under the four alternatives on the OASDI cost rates is better understood by considering the projected number of beneficiaries per 100 workers. As compared to the current level of 30 beneficiaries per 100 covered workers, this ratio rises by the end of the long-range valuation period (1989–2063) to a significantly higher level, which ranges from 41 under alternative I to 79 under alternative III. The salience of these numbers can be seen by comparing figure 2 to figure 3. For each alternative, the shape of the curve in figure 3, which shows beneficiaries per 100 covered workers, is strikingly similar to that of the corresponding cost-rate curve in figure 2, 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 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 of the annual ratios of beneficiaries to workers. A graphical presentation of covered workers per beneficiary is shown in the "Summary."

FIGURE 3.—RATIOS OF ESTIMATED OASDI BENEFICIARIES PER 100 COVERED WORKERS BY ALTERNATIVE, CALENDAR YEARS 1988-2065
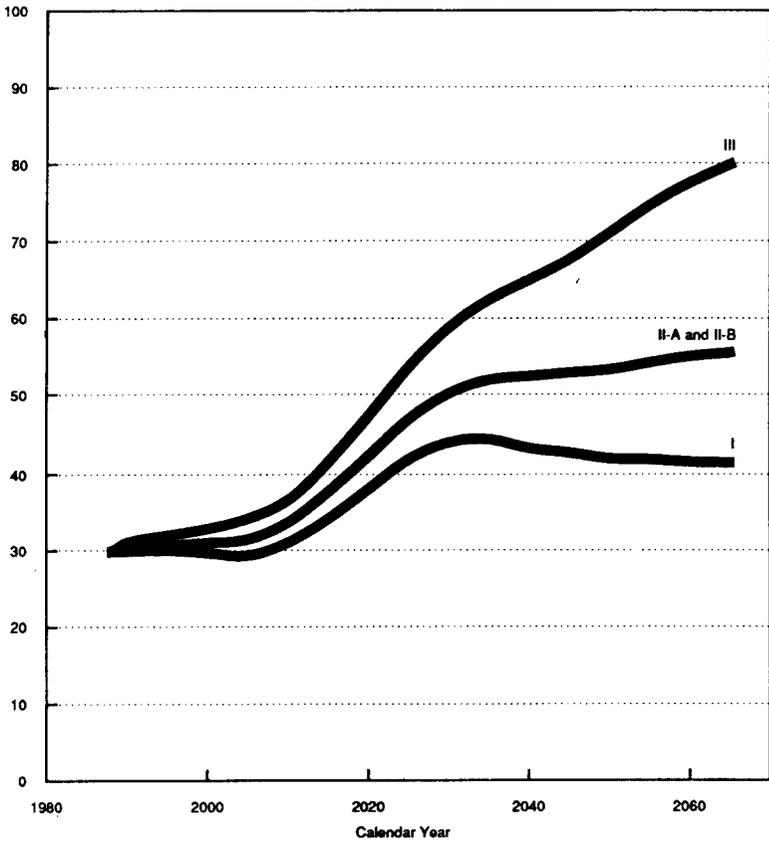
Table 31 shows, by alternative, the estimated contingency fund ratios for the separate and combined OASI and DI Trust Funds. The patterns of the combined fund ratios, over the 75-year period, are also shown in figure 4, for all four sets of assumptions. The OASI and DI ratios are estimated to be relatively low for the next several years, before generally increasing to very high levels. Based on alternatives II-A and II-B, the OASI ratio peaks about 2015, when it is 727 percent and 605 percent, respectively, and the DI ratio peaks about 2005, when it is 276 percent and 240 percent, respectively. Thereafter, the OASI and DI ratios decline steadily. Under alternative II-A, the DI Trust Fund becomes exhausted in 2029; under alternative II-B, the OASI and DI funds become exhausted in 2049 and 2025, respectively. Based on alternative I, the ratios increase throughout the long-range projection period to extremely high levels, around 1,000-1,300 percent for the OASI and DI programs. In contrast, under alternative III, the OASI and DI Trust Funds are estimated to be exhausted within 41 years and 10 years, respectively. Thus, because of the high ultimate cost rates that are projected under all but the most optimistic assumptions, eventually income will need to be increased or program costs will need to be reduced in order to prevent the OASI and DI Trust Funds from becoming exhausted.

The OASI and DI funds combined are projected to rise for several years under each of the alternative sets of assumptions. Under alternative I the combined funds are still rising at the end of the 75-year period. The combined fund ratios reach peaks in about 2015 under alternatives II-A and II-B, and in about 2010 under alternative III, before turning down. The combined funds are projected to be exhausted in 2025 under the pessimistic assumptions in alternative III, in 2046 under the intermediate assumptions of alternative II-B, and in 2060 under the intermediate assumptions of alternative II-A. This means that under the most pessimistic assumptions the OASDI funds and income would be able to cover expenditures for about 36 years into the future and that under the alternative II-B assumptions the OASDI funds and income would be able to cover expenditures for about 57 years into the future. The program would be able to cover expenditures for about 71 years under alternative II-A and for the indefinite future under the most optimistic assumptions in alternative I. In the 1988 report, the combined trust funds were projected to be exhausted in 2026 under alternative III and in 2048 under alternative II-B.

TABLE 31.—ESTIMATED CONTINGENCY FUND RATIOS BY TRUST FUND AND ALTERNATIVE, CALENDAR YEARS 1989-2065
[In percent]

Calendar year	Alternative I			Alternative II-A			Alternative II-B			Alternative III		
	OASI	DI	Total	OASI	DI	Total	OASI	DI	Total	OASI	DI	Total
1989	59	39	57	59	38	57	59	38	57	59	37	57
1990	82	47	79	82	44	78	81	43	77	77	37	73
1991	108	69	104	105	62	101	102	60	98	92	43	87
1992	136	96	132	131	82	126	124	76	120	106	48	100
1993	167	124	163	157	101	152	146	93	141	118	50	111
1994	200	154	196	186	120	179	170	108	164	130	48	121
1995	236	185	231	215	138	207	195	123	188	142	43	131
1996	274	214	268	246	155	236	221	137	212	154	36	140
1997	314	242	307	277	168	265	247	149	237	167	27	150
1998	354	268	345	308	180	294	274	159	262	179	14	159

TABLE 31.—ESTIMATED CONTINGENCY FUND RATIOS BY TRUST FUND AND ALTERNATIVE,
CALENDAR YEARS 1989-2065 (Cont.)

[In percent]

| Calendar year	Alternative I			Alternative II-A			Alternative II-B			Alternative III		
	OASI	DI	Total	OASI	DI	Total	OASI	DI	Total	OASI	DI	Total
2000	438	315	425	373	198	353	330	173	312	206	(¹)	178
2005	655	477	633	533	276	499	459	240	431	262	(¹)	220
2010	855	544	813	674	271	616	571	225	522	309	(¹)	245
2015	952	587	905	727	229	657	605	172	546	303	(¹)	222
2020	957	627	918	696	171	629	563	102	505	234	(¹)	147
2025	937	643	904	632	93	566	485	13	428	121	(¹)	32
2030	920	684	895	554	(¹)	491	390	(¹)	336	(¹)	(¹)	(¹)
2035	931	753	912	479	(¹)	418	291	(¹)	239	(¹)	(¹)	(¹)
2040	980	818	963	413	(¹)	349	195	(¹)	143	(¹)	(¹)	(¹)
2045	1,050	857	1,028	348	(¹)	280	98	(¹)	44	(¹)	(¹)	(¹)
2050	1,116	898	1,091	276	(¹)	203	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
2055	1,175	948	1,150	194	(¹)	118	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
2060	1,237	1,008	1,212	104	(¹)	25	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
2065	1,309	1,061	1,281	7	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Trust fund is estimated to be exhausted in:	(²)	(²)	(²)	2065	2029	2060	2049	2025	2046	2029	1998	2025

¹The fund is estimated to be exhausted in the year shown in the last line of the table.
²The fund is not estimated to be exhausted within the projection period.

Note: See footnote 2 of table 13 for definition of contingency 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 contingency fund ratios for the combined trust funds is shown in figure 4 for each of the alternative sets of assumptions.

FIGURE 4.—ESTIMATED CONTINGENCY FUND RATIOS, FOR OASI AND DI
TRUST FUNDS COMBINED, CALENDAR YEARS 1988-2065

Calendar Year
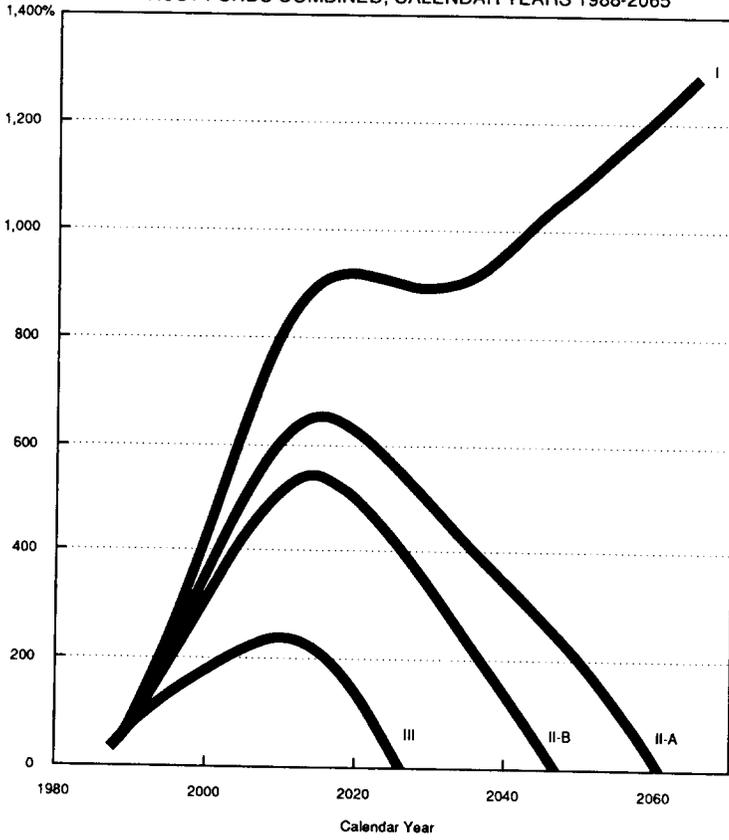
Reasons for changes from last year's report and this report in the long-range actuarial balance under the II-B assumptions are itemized in table 32. Also shown are the estimated effects associated with each reason for change.

TABLE 32.—CHANGE IN ACTUARIAL BALANCE ESTIMATED ON THE BASIS OF ALTERNATIVE II-B BY TRUST FUND AND REASON FOR CHANGE
[As a percentage of taxable payroll]

Item	OASI	DI	Total
Shown in last year's report[1]:			
Income rate	11.53	1.40	12.94
Cost rate	11.99	1.53	13.52
Actuarial balance	-.45	-.13	-.58
Changes in actuarial balance due to changes in:			
Valuation period	-.04	-.00	-.04
Demographic assumptions.	+.06	+.01	+.07
Economic assumptions	-.10	-.01	-.11
Disability assumptions	-.00	-.04	-.04
Total change in actuarial balance	-.08	-.05	-.13
Shown in this report[2]:			
Actuarial balance	-.53	-.17	-.70
Income rate	11.60	1.41	13.02
Cost rate	12.13	1.59	13.72

[1]Income rates, cost rates, and taxable payroll are calculated on the basis of alternative II-B assumptions, as described in the 1988 report. Several of those assumptions have been modified for this year's report. A description of the modifications is presented in the text of this report. Includes the trust fund balances as of the start of the valuation period.

[2]Includes the trust fund balances as of the start of the valuation period.

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

In changing from the valuation period of last year's report, which was 1988-2062, to the valuation period of this report, 1989-2063, the deficit year of 2063 is included. This results in a decrease in the long-range actuarial balance. (Note that the positive balance for 1988 is, in effect, retained because the funds accumulated during the year are included in this year's report.)

Several demographic assumptions were modified: (1) the starting population, used in the projection of the Social Security Area population, was updated; (2) the total fertility rate was increased slightly for the first 25 projection years reflecting recently observed birthrates that were higher than expected; and (3) mortality assumptions were revised to incorporate the latest data and analyses, including the effects of HIV infections and AIDS throughout the long-range period (assumptions for the 1988 report included new HIV infections only through 1991). The net effect of these modifications is an increase in the long-range actuarial balance.

Short-range economic assumptions and projected rates of covered employment were updated to incorporate the latest information and analyses. The ultimate assumed real-wage differential was lowered from 1.4 to 1.3 percent per year. These changes have the net effect of decreasing the long-range actuarial balance.

Projections of the number of disabled beneficiaries were modified to reflect the latest data and analyses and to reflect the effects of HIV infections and AIDS throughout the long-range period (assumptions for the 1988 report included new HIV infections only through 1991). The net result is a decrease in the long-range actuarial balance.

Other assumptions were updated and modified, but the net effect on the long-range actuarial balance is negligible.

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 national product (GNP). Discussion of both the cost and the taxable payroll of the OASDI program in relation to GNP is presented in Appendix G.

VI. CONCLUSION

The actuarial estimates shown in this report indicate that the assets of the OASI and DI Trust Funds, on a combined basis, will increase rapidly for many years into the future, under all four sets of economic and demographic assumptions. Based on the intermediate assumptions, the assets of the combined funds will be sufficient to enable the timely payment of OASDI benefits for the next 5 1/2 decades, under alternative II-B, or the next 7 decades, under alternative 11-A. Even on the basis of pessimistic assumptions, the combined funds will be sufficient to enable the timely payment of benefits for the next 3 1/2 decades, without any additional legislation to increase income or reduce expenditures. (However, legislation to reallocate contribution rates between OASI and DI might be required at some time in the future.) Both the OASI and DI funds would continue to grow throughout the next 75 years, based on alternative I, so that benefits would be payable during all of the long-range period.

Based on all but the most optimistic assumptions, the assets of the combined trust funds are estimated to decline after the initial, long period of growth, until the combined funds would be exhausted. The estimates show that the combined OASI and DI Trust Funds would become exhausted in 2046, based on alternative II-B, and in 2060, based on alternative II-A. Under the pessimistic assumptions, the combined funds would become exhausted in 2025.

The actuarial balance of the OASDI program as a whole over the next 75 years is a deficit of 0.10 percent of taxable payroll, on the basis of the intermediate alternative II-A assumptions. Based on the intermediate alternative II-B assumptions, the long-range balance is a deficit of 0.70 percent of taxable payroll. However, as stated elsewhere in this report, a single measure over a long period, such as the actuarial balance, is not a complete indicator of the extent or urgency of any financing problems it may indicate. As explained later in this section, the Trustees do not recommend that any legislative action be taken at this time to resolve the long-range deficit.

The deficit based on alternative II-B in this report is larger than the corresponding deficit of 0.58 percent of taxable payroll in the 1988 report primarily for three reasons. The first is the decrease in the assumed ultimate annual real-wage differential, from 1.4 percent in the 1988 report to 1.3 percent in this report. The second is the increase in the projected number of disabled-worker beneficiaries, which is due mostly to the recognition of greater long-range effects of Acquired Immunodeficiency Syndrome (AIDS). In the 1988 report, no new infections with the Human Immunodeficiency Virus (HIV—the precursor to AIDS) were assumed to occur after 1991. However, as stated earlier, such infections were assumed to occur after 1991 for the purposes of the estimates shown in this report. The third is the change in the valuation period, which now includes the high deficit year 2063.

The OASDI long-range estimates based on both alternatives II-A and II-B show a pattern of recurring annual positive balances in the first three decades and recurring annual deficits thereafter. These positive balances are estimated to occur even without taking account of interest

earnings. The addition of interest earnings to the positive cash flow results in trust fund growth, in dollars, that continues for about another 1 or 2 decades after the cost rate first exceeds the income rate.

The estimates for each trust fund, separately, indicate that the OASI program can operate satisfactorily for many years, as shown by all four sets of estimates. However, while the DI program would operate satisfactorily for many years on the basis of optimistic or intermediate assumptions like those designated as alternatives I, II-A, and II-B, it would become exhausted in 1998, on the basis of the more pessimistic assumptions represented by alternative III.

For OASI and DI, separately, the level-financing long-range deficits, based on alternative II-B, are 0.53 percent and 0.17 percent of taxable payroll, respectively. Because the DI deficit is relatively large, compared to its cost rate, the financial condition of the DI program needs to be carefully monitored in both the short-range and long-range periods.

For the first 25-year subperiod, the OASDI program has a positive balance of 2.14 percent of taxable payroll. However, the balances in the second and third 25-year subperiods are deficits of 1.88 percent and 3.72 percent, respectively. (These balances, which are based on alternative II-B, do not include the funds on hand at the beginning of the projection period.)

Thus, in the absence of other changes, the long-range actuarial balance will tend to decline slowly in future annual reports, as the valuation period moves forward and additional distant years of deficit are included in the valuation. The actuarial deficits in the later years of the 75-year projection period are caused primarily by rapid increases in the cost rate, due largely to demographic trends. While the cost rate is rising, the income rate increases much more slowly as a result of the flat contribution rate scheduled for 1990 and later and relatively small increases in income from the taxation of benefits.

Because the program is projected to be solvent for several decades into the future, the Trustees do not recommend that any immediate action be taken to change either the financing or the benefit provisions for the OASDI program. However, study and analysis concerning the implications of the expected large buildup of the trust funds and possible ways of addressing the deficits projected for distant future years should begin soon. The Trustees believe that the Advisory Council to be appointed this year should be instructed to begin this process.