
Actuarial Status of the OASI and DI Trust Funds

by Harry C. Ballantyne*

This article summarizes the current financial condition and actuarial status of the old-age, survivors, and disability insurance (OASDI) program, as shown in the 1986 Annual Report of the Board of Trustees. The Trustees note that the assets of the OASI and DI Trust Funds will be sufficient to permit the timely payment of OASDI benefits for many years into the future, on the basis of all four sets of assumptions shown in the report. For the next 75 years, the estimates show that the OASDI program, overall, is in close actuarial balance, based on the two intermediate sets of assumptions. The DI program by itself, however, is not in close actuarial balance for the next 75 years. The actuarial deficit for the DI program could be remedied by a small reallocation of the contribution rate from OASI to DI, in such a way that the OASI program would remain in close actuarial balance and OASDI benefits would not be affected. Although the Trustees do not at this time recommend such a reallocation, they note that the financial condition of the DI program will need to be carefully monitored for the next several years.

The old-age, survivors, and disability insurance (OASDI) program consists of two separate parts, which pay monthly benefits to workers and their families:

- (1) Old-age and survivors insurance (OASI) pays benefits after a worker retires and to survivors after a worker dies.
- (2) Disability insurance (DI) pays benefits after a worker becomes disabled.

The Board of Trustees of the trust funds is required by law to report annually to Congress on the financial condition of the funds and on estimated future results.¹ The Board has five members, three of whom serve in an ex officio capacity: the Secretaries of the Treasury, Labor, and Health and Human Services. The Board also includes two members of the public, Mary Falvey Fuller and Suzanne Denbo Jaffe, who are serving 4-year terms that began on September 28, 1984.

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¹ The information in this article is adapted from the 1986 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, Social Security Administration, March 31, 1986. Single copies of the report may be obtained from the Office of Public Inquiries, Room 4100 Annex, Social Security Administration, 6401 Security Boulevard, Baltimore, Maryland 21235.

OASDI Income and Trust Funds

Most OASDI revenue consists of contributions paid by employees, their employers, and the self-employed. (Additional contributions are paid into a separate trust fund for the hospital insurance part of Medicare. This summary focuses on OASDI and does not discuss Medicare except in the context of interfund borrowing.) The contribution rates are established by law. Contributions are paid on earnings not exceeding the earnings base—\$42,000 in 1986. The earnings base will rise in the future as average wages increase. The current and future OASDI contribution rates for employees and employers, each, are shown in table 1.

Since 1984, a portion (not more than one-half) of OASDI benefits may be subject to Federal income taxation under certain circumstances. The revenues collected as a result of this provision are transferred from the general fund of the Treasury to the trust funds, in advance of their actual collection.

The outgo of the OASI and DI Trust Funds consists of benefit payments and administrative expenses. Trust fund assets may not be used for any other purposes.

During periods when outgo temporarily exceeds income, trust fund assets are used to meet the shortfall. In the event of recurring shortfalls, the trust

Table 1.—Schedule of OASDI tax rates: Contribution rates payable by employer and employee (each)

[Percent of taxable payroll]

Calendar year	OASI	DI	OASDI
1986-87	5.20	0.50	5.70
1988-89	5.53	.53	6.06
1990-99	5.60	.60	6.20
2000 and later	5.49	.71	6.20

funds can allow time for legislation to be enacted to restore balance to the program. The assets of the trust funds are invested in U.S. Government securities bearing rates of interest similar to those for long-term securities issued to the general public.

Recent Results

During 1985, about 122 million workers made contributions to the OASDI program. At the end of September 1985, 36.9 million persons were receiving monthly OASDI benefit payments. Administrative expenses represented about 1.2 percent of benefit payments in fiscal year 1985.

Income to the OASI and DI Trust Funds in fiscal year 1985 was \$197.9 billion, while outgo was \$188.5 billion. In addition, \$1.8 billion was transferred from the OASI fund to the Hospital Insurance (HI) Trust Fund, as partial repayment of interfund loans made in 1982. Thus, the assets of the OASDI funds increased by \$7.5 billion during the fiscal year. A summary of the OASDI financial operations in fiscal year 1985 is shown below (in billions):

Trust fund assets at end of fiscal 1984	\$32.2
Income during year:	
Total income	197.9
Contributions	192.2
Revenue from taxation of benefits	3.4
Payments from general fund1
Net interest	2.2
Outgo during year:	
Total outgo	188.5
Benefit payments	184.0
Administrative expenses	2.2
Transfer to railroad retirement program	2.4
Loan repayment to HI fund	1.8
Net increase in assets during year	7.5
Trust fund assets at end of fiscal 1985	39.7

Note: Totals may not equal sums of components, due to rounding.

The growth of the trust funds in calendar year 1985 was such that the entire \$10.6 billion in interfund loans owed from the OASI Trust Fund to the HI Trust Fund in January 1986 was repaid then—a year sooner than had been expected. The \$2.5 billion owed from the OASI fund to the DI fund was repaid in April 1986.

While some decline in the invested assets of the

trust funds occurred late in 1985 because of debt-limit problems, the assets are now fully invested. Legislative action by the Congress, with the support of the Administration, restored the long-term bonds that had been redeemed and prevented any loss of interest earnings to the funds.

Actuarial Estimates

The annual report contains 75-year estimates of each fund's financial operations and status. Because precise prediction of the future is impossible, alternative sets of assumptions, representing a reasonable range of possible future experience, are used to make short- and long-range estimates. Future experience could, however, fall outside the range indicated by these assumptions.

Future OASDI income and outgo will depend on a variety of economic and demographic factors, including economic growth, inflation, unemployment, fertility, and mortality. Economic factors affect the levels of workers' earnings and OASDI benefits, while demographic factors affect the number of persons making contributions and receiving benefits.

This year's estimates were prepared using four alternative sets of assumptions. Two sets—alternatives II-A and II-B—are designated "intermediate." These sets share the same demographic assumptions, but differ with respect to economic assumptions; somewhat more robust economic growth is assumed for alternative II-A than for alternative II-B. One set—alternative I—is designated "optimistic," and another—alternative III—is "pessimistic."

No single measure is used to assess the actuarial status of the OASDI funds. Short-range measures usually focus on the adequacy of reserves available to pay benefits. Long-range measures usually focus instead on the balance between income and outgo during the projection period.

The **contingency fund ratio** is the usual measure of the OASDI program's ability to pay benefits on time in the near future. This ratio is the amount in the trust funds at the beginning of the year, including advance tax transfers for January, divided by that year's expenditures. Thus, if the trust fund ratio is 25 percent, the amount in the fund represents about 3 months' outgo. At the beginning of 1986, the fund ratio for OASDI was about 29 percent. A ratio of 8-9 percent is required to pay benefits at the beginning of each month.

In analyzing the actuarial status of OASDI for the next 75 years, several different measures are commonly used. The **income rate** is the combined OASDI employee-employer contribution rate scheduled in the law, plus the income from taxation of benefits expressed as a percentage of taxable payroll. The **cost**

rate is the annual outgo expressed as a percentage of taxable payroll. Average income and cost rates can be compared directly to measure the adequacy of the program's financing.

For the 75-year long-range projection period, the **actuarial balance** is the difference between the estimated average income rate and the estimated average cost rate. If this actuarial balance is positive, the program is said to have an actuarial surplus, and, if negative, an actuarial deficit. Such a deficit is a warning that future changes may be needed in the program's financing or benefit provisions, although it does not present a complete picture without the other measures of financing discussed here. The program is in **close actuarial balance** for the long-range period if the average income rate is between 95 and 105 percent of the average cost rate.

Short-Range Financing (1986-90)

Estimates for the next 5 years are used to assess the adequacy of OASDI financing in the short range. In this period, the number of persons receiving OASDI benefits can be estimated fairly accurately. Changes in the national economy, however, which are difficult to predict, can have major effects on income and outgo.

The actuarial estimates shown in the 1986 report indicate that the assets of the OASI and DI Trust

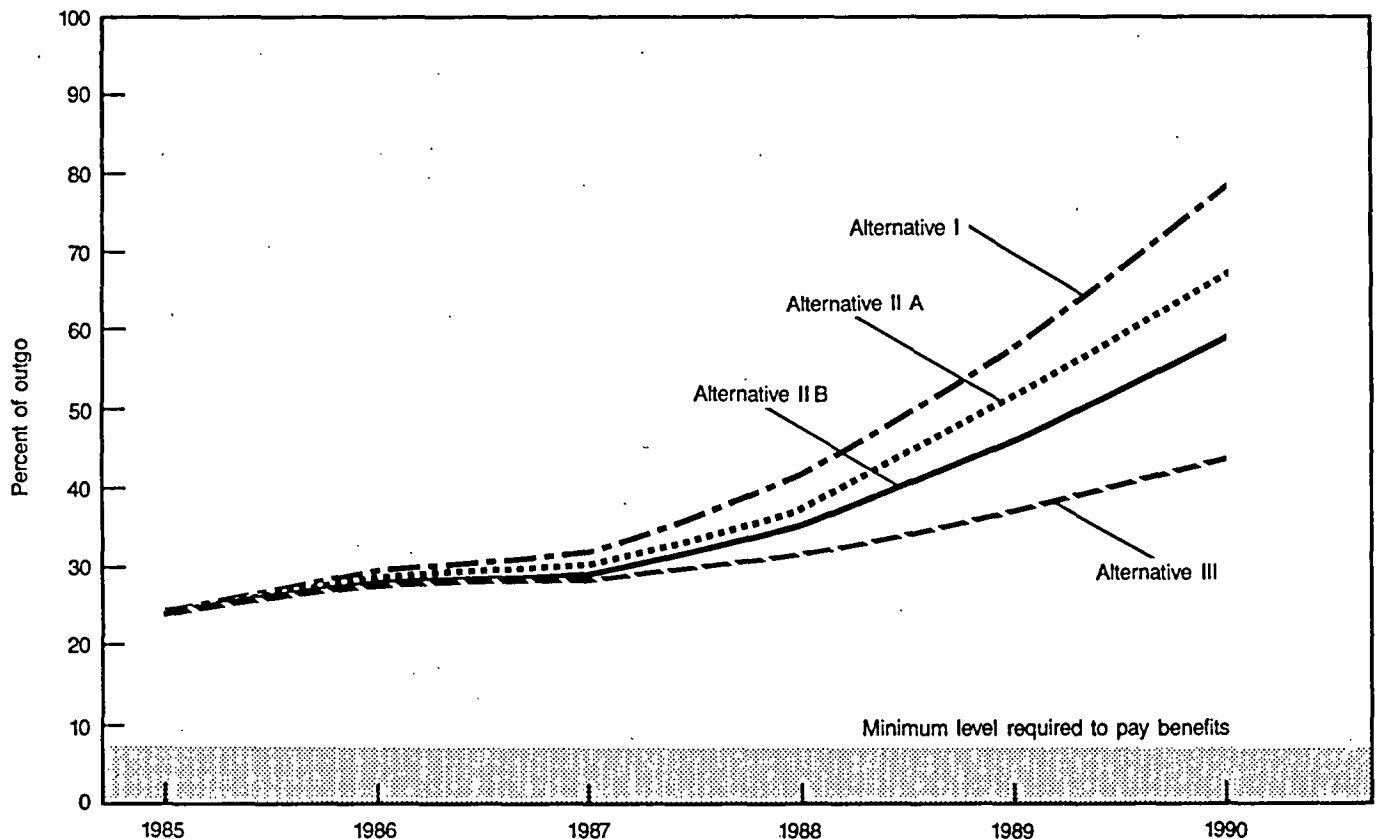
Funds will be sufficient to pay benefits on time throughout the 5-year period and for many years thereafter, based on all four sets of assumptions. In addition, the estimates indicate that the OASI and DI programs, separately, can operate satisfactorily for many years. During the next several years, however, the DI contingency fund ratio could decline to a relatively low level, as shown by the pessimistic estimates.

Chart 1 shows the OASDI contingency fund ratio for 1985 (24 percent) and the projected OASDI ratios for 1986-90, on the basis of all four sets of assumptions. The fund ratios are generally estimated to increase each year.

Long-Range Financing (1986-2060)

Long-range 75-year estimates for OASDI, although sensitive to variations in the assumptions, indicate the trend and general range of the program's future financial status. During this long-range period, income and outgo are greatly affected by demographic, as well as economic, conditions. Most of the beneficiaries during the next 75 years have already been born, so that their numbers are projected mainly from the present population. The number of workers involved in these projections, however, depends on future birth rates, which are subject to more variability.

Chart 1. — Contingency fund ratio at beginning of year, 1985-90



Several important demographic trends are anticipated to raise the proportion of the aged in the population during the next 75 years. First, because of the large number of persons born in the two decades after World War II, rapid growth is expected in the aged population after the turn of the century. Second, assumed declines in death rates also would increase the number of aged persons. At the same time, birth rates, which began to decline in the 1960's and are assumed to remain relatively low in the future, would hold down the number of young people.

Chart 2 shows the long-range trends in the number of covered workers for each OASDI beneficiary. ("Beneficiaries" includes not only retired workers, but also disabled workers, spouses, children, and survivors of deceased workers.) This ratio declined from 5.1 in 1960 to 3.3 in 1985. It is estimated to reach about 2 by the middle of the next century, based on the intermediate assumptions, as the number of beneficiaries increases more rapidly than the number of covered workers.

Chart 3 shows the estimated OASDI income and cost rates for the long-range projection period, based on the alternative II-B assumptions. During the first three decades of this period, the estimates indicate that the income rate will generally exceed the cost rate, resulting in substantial actuarial surpluses each

Table 2.—Estimated 75-year average OASDI income rates, cost rates, and actuarial balance, as a percentage of taxable payroll

Assumptions	Income rate ¹	Cost rate ²	Actuarial balance ³
Alternative I	12.82	10.52	2.31
Alternative II-A	12.92	12.64	.28
Alternative II-B	12.96	13.40	-.44
Alternative III	13.16	17.64	-4.49

¹ The OASDI employer-employee contribution rate, plus the rate of income from the taxation of benefits.

² Estimated outgo as a percentage of taxable payroll.

³ Difference between the income rate and the cost rate, before rounding.

year. Beginning about 2020, the reverse is true, with the cost rate exceeding the income rate, thus resulting in substantial deficits. These actuarial surpluses and deficits do not reflect interest earnings, which result in trust fund growth continuing for about 15 years after the first actuarial deficits occur. The cost rate is estimated to increase rapidly after the first half of the 75-year projection period, primarily because the number of beneficiaries is projected to increase more rapidly than the number of covered workers.

The long-range OASDI actuarial deficit of 0.44 percent of taxable payroll, based on the intermediate (II-B) alternative, consists of an average annual surplus of 2.12 percent of taxable payroll for the first

Chart 2. — Number of covered workers per OASDI beneficiary

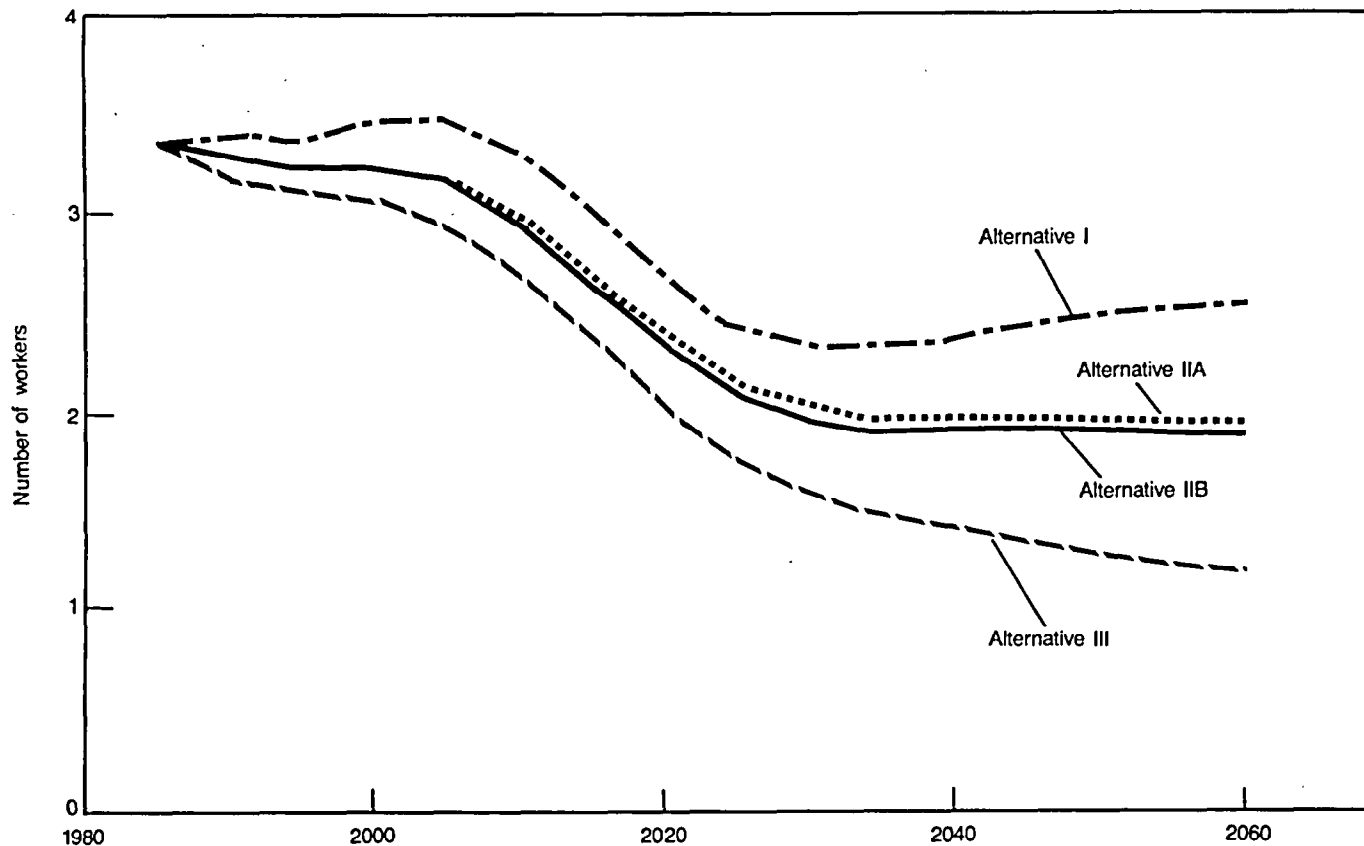
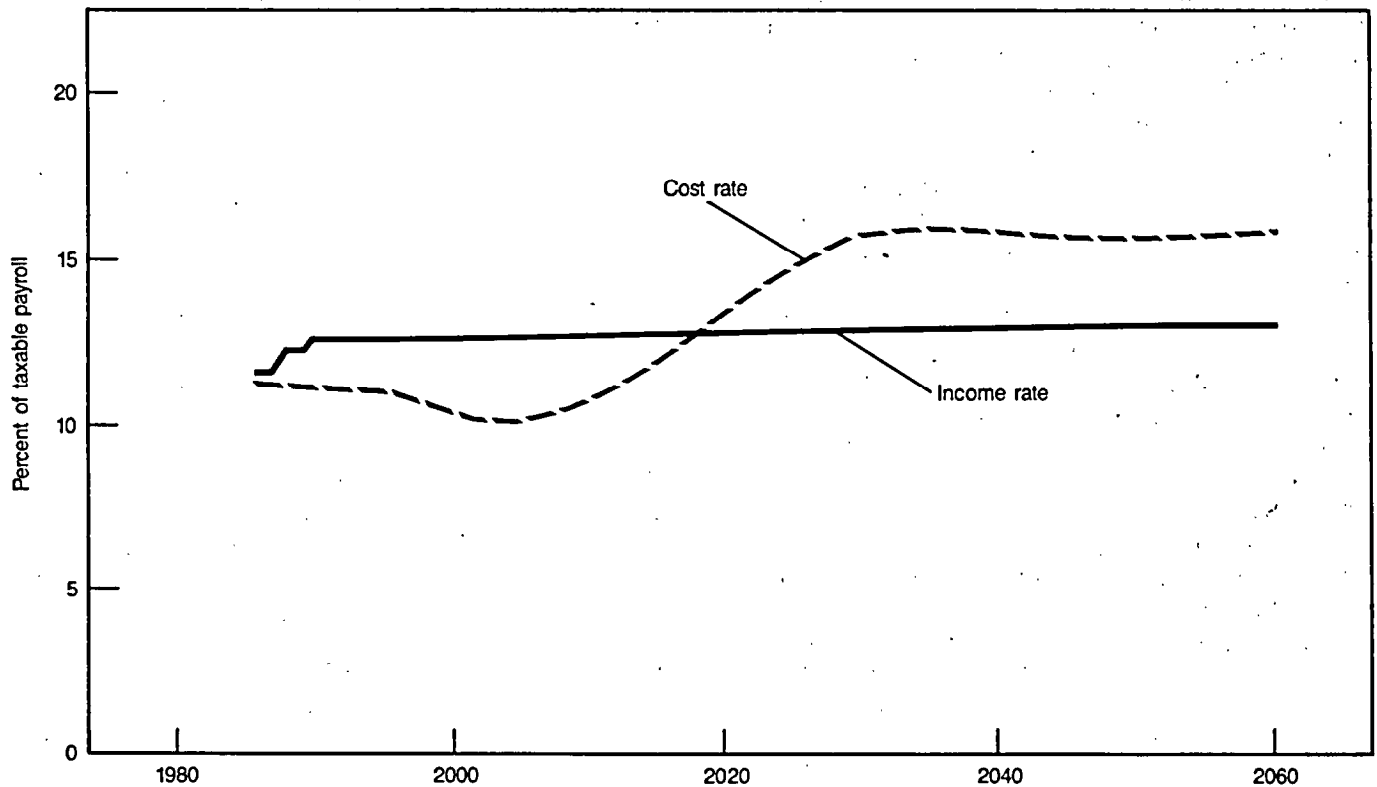


Chart 3. — OASDI income rate and cost rate based on alternative II-B assumptions



25-year subperiod, and average annual deficits of 0.89 percent and 2.56 percent for the second and third 25-year subperiods, respectively. 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 near-term years of surplus are replaced by distant years of deficit. The actuarial deficits in the later years of the 75-year projection period are caused primarily by the demographic trends described above.

Table 2 presents a comparison of the average annual income and cost rates for the 75-year long-range projection period, based on the four sets of assumptions. The figures are expressed as percentages of taxable payroll. Based on the intermediate II-B assumptions, the OASDI program is in "close actuarial balance," because the estimated average income rate is between 95 percent and 105 percent of the average cost rate. The 0.44-percent deficit represents about 3 percent of the average cost rate.