

# 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 1987 Annual Report of the Board of Trustees. The Trustees note that the assets of the OASI and DI Trust Funds, on a combined basis, 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 are not recommending such a reallocation, they note that the financial condition of the DI program will need to be carefully monitored.

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.<sup>1</sup> 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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<sup>1</sup> The information in this article is adapted from the **1987 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds**, Social Security Administration, March 30, 1987. 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, Outgo, 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 article 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—\$43,800 in 1987. 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.

**Table 1.**—Schedule of OASDI tax rates: Contribution rates payable by employer and employee (each)  
[Percent of taxable payroll]

Calendar year	OASI	DI	OASDI
1987.....	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

## Actuarial Estimates

Since 1984, a portion (not more than one-half) of OASDI benefits received by higher-income beneficiaries 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 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 1986, about 124 million workers made contributions to the OASDI program. At the end of September 1986, 37.5 million persons were receiving monthly OASDI benefit payments. Administrative expenses represented about 1.1 percent of benefit payments in fiscal year 1986.

Income to the OASI and DI Trust Funds in fiscal year 1986 was \$215.5 billion, while outgo was \$198.7 billion. In addition, \$10.6 billion was transferred from the OASI fund to the Hospital Insurance (HI) Trust Fund, as a final repayment of interfund loans made in 1982. Thus, the assets of the OASDI funds increased by \$6.1 billion during the fiscal year. A summary of the OASDI financial operations in fiscal year 1986 is shown below (in billions):

Trust fund assets at end of fiscal 1985 .....	\$39.7
Income during year:	
Total income .....	215.5
Contributions .....	205.1
Revenue from taxation of benefits .....	3.6
Payments from general fund .....	3.3
Net interest .....	3.4
Outgo during year:	
Total outgo .....	198.7
Benefit payments .....	193.9
Administrative expenses .....	2.2
Transfer to Railroad Retirement program .....	2.7
Loan repayment to HI fund .....	10.6
Net increase in assets during year .....	6.1
Trust fund assets at end of fiscal 1986 .....	45.9

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

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 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 1987 the fund ratio for OASDI was about 31 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 negative the pro-

gram is said to have 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. In other words, close actuarial balance means that the long-range actuarial balance, positive or negative, is no more than 5 percent of the long-range average cost rate.

### Short-Range Financing (1987-91)

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 1987 report indicate that the combined 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 program by itself can operate satisfactorily for many years under all four sets of assumptions. However, while the DI program would operate satisfactorily for many years on the basis of alternatives I, II-A, or II-B, it would become unable to make timely benefit payments by 1996 on the basis of the more pessimistic alternative III assumptions.

Chart 1 shows the OASDI contingency fund ratio for 1986 (31 percent) and the projected OASDI ratios for 1987-91 on the basis of all four sets of assumptions. The fund ratios are estimated to increase each year.

### Long-Range Financing (1987-2061)

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 numbers of workers involved in these projections, however, depend on future birth rates, which are subject to more variability.

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 numbers 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 persons.

Chart 2 shows the long-range trends in the number of covered workers for each OASDI beneficiary. ("Beneficiaries" include 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 1986. 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 positive actuarial balances each year. Beginning about 2015 the reverse is true, with the cost rate exceeding the income rate, thus resulting in substantial deficits. These positive actuarial balances 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 0.62 percent of taxable payroll, based on the intermediate (II-B) assumptions, consists of average annual positive balances of 2.10 percent of taxable payroll for the first 25-year subperiod, and average annual deficits of 1.22 percent and 2.74 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 positive balances are replaced by distant years of deficits. The actuarial deficits in the later years of the 75-year projection period are caused primarily by the demographic trends described above.

For OASI and DI, separately, the average long-range deficits, based on the alternative II-B assumptions, are 0.43 percent and 0.19 percent of taxable payroll, respectively. The deficit for DI represents about 12 percent of the average annual cost rate. Thus, the DI program is not in close actuarial balance, and the financial condition of the program will need to be carefully monitored.

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 0.62 percent deficit represents about 4.6 percent of the average cost rate.

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

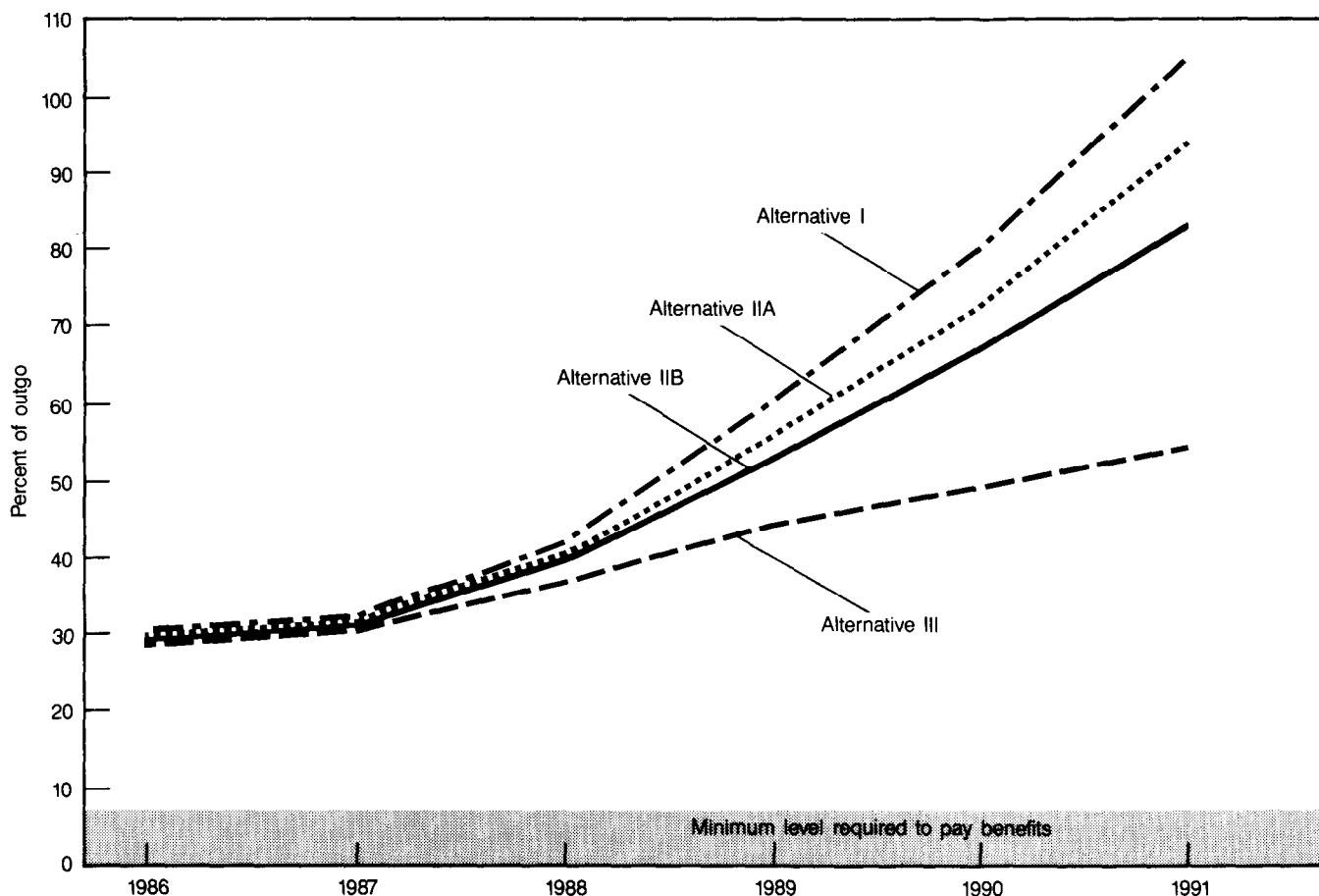
Assumptions	Income rate <sup>1</sup>	Cost rate <sup>2</sup>	Actuarial balance <sup>3</sup>
Alternative I.....	12.78	10.62	2.15
Alternative II-A.....	12.87	12.79	.08
Alternative II-B.....	12.89	13.51	-.62
Alternative III.....	13.07	17.76	-4.69

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

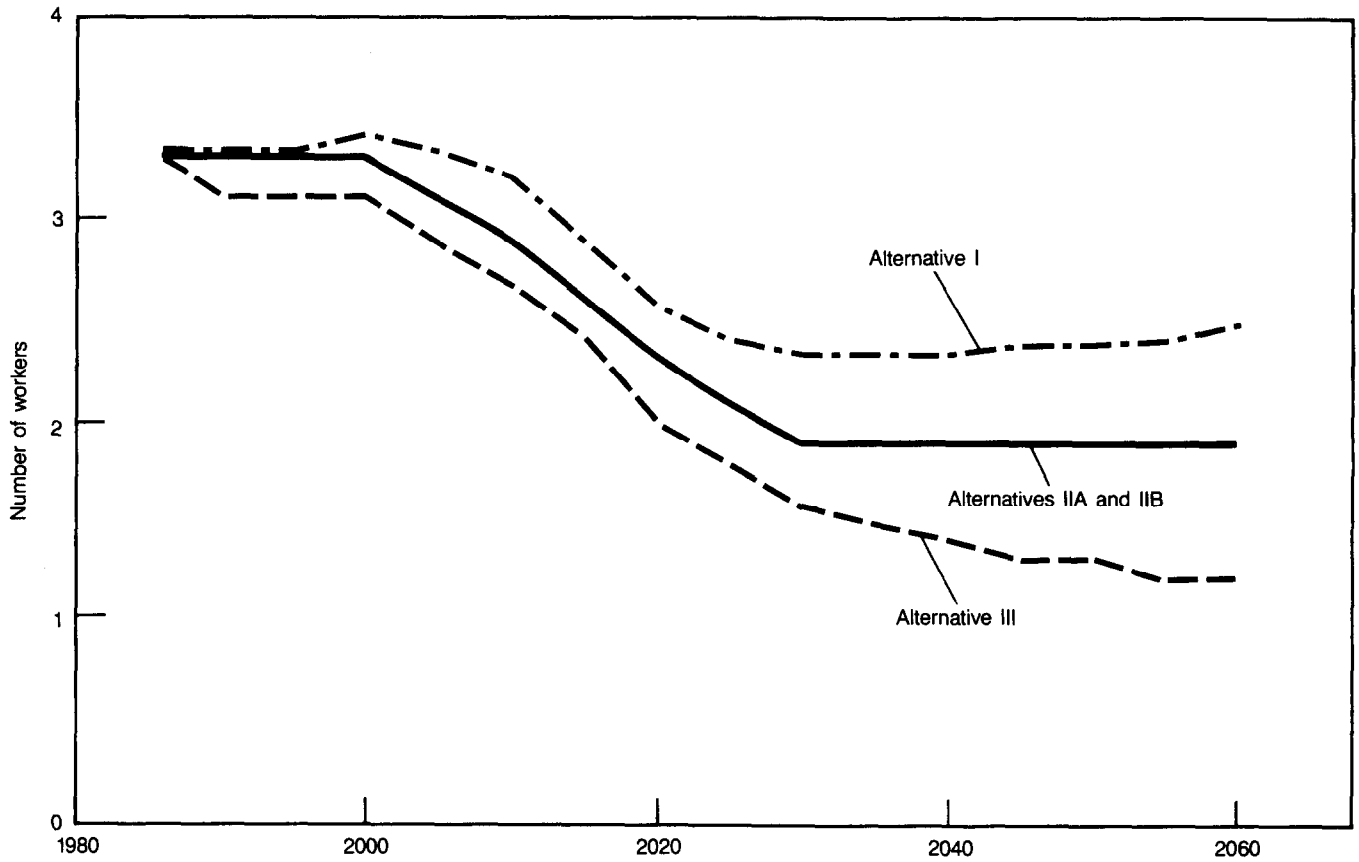
<sup>2</sup>Estimated outgo as a percentage of taxable payroll.

<sup>3</sup>Difference between the income rate and the cost rate, before rounding.

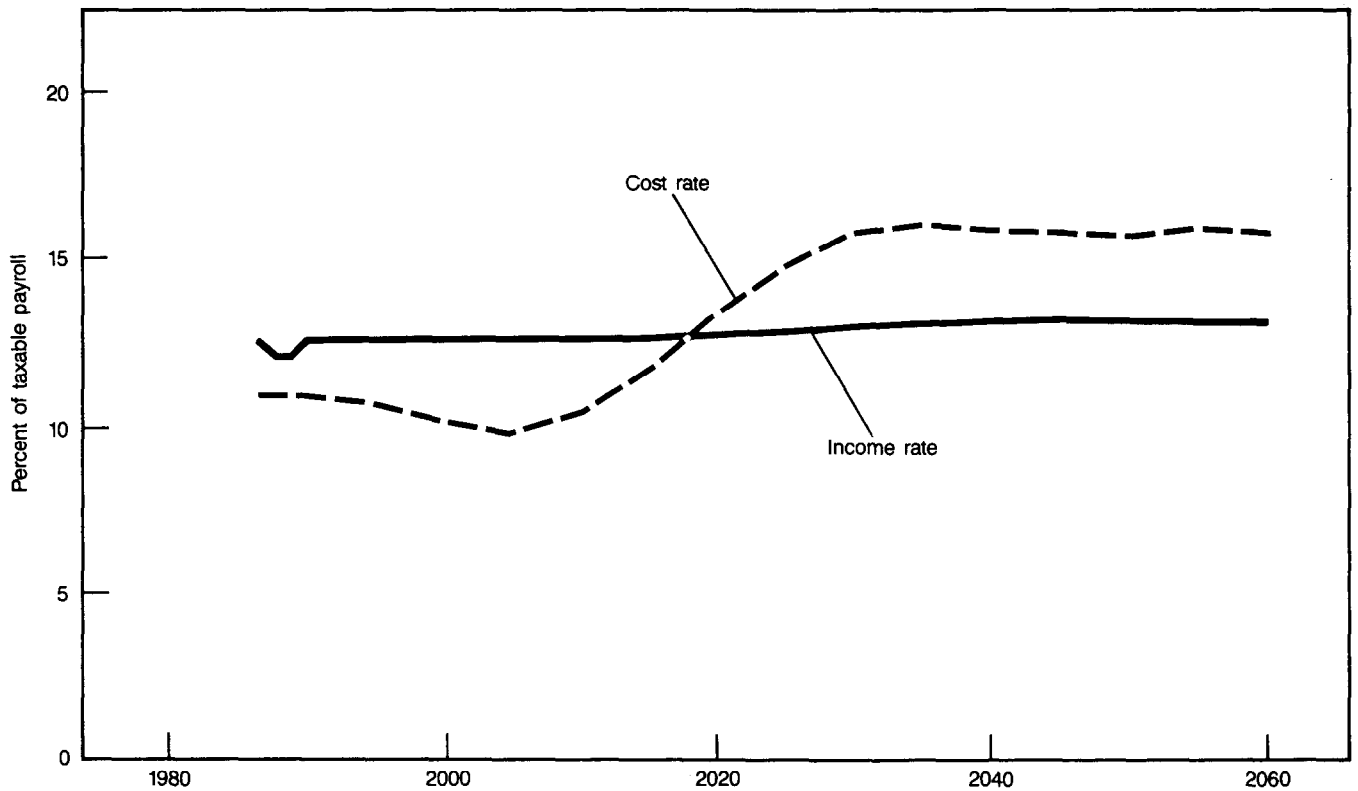
**Chart 1.** — Contingency fund ratio at beginning of year, 1986-91



**Chart 2.** — Number of covered workers per OASDI beneficiary



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





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