Actuarial Status of the HI Trust Fund*

This article, adapted from the **1990 Annual Report of the Medicare Board of Trustees**, presents a summary of the current and projected financial and actuarial status of the Hospital Insurance (HI) Trust Fund. The Board reports that the present financing schedule for the HI program is sufficient to ensure the payment of benefits over the next 13-15 years if the intermediate (II-A and II-B) assumptions underlying the estimates are realized. Although steps have been taken to reduce the rate of growth in payments to hospitals, the Board urges Congress to take remedial measures to bring future HI program costs and financing into balance without adversely affecting the quality of health care.

*Adapted from the **1990 Annual Report of the Board of Trustees of the Federal Hospital Insurance Trust Fund**, April 18, 1990. Copies of the report may be obtained from the Office of the Actuary, Health Care Financing Administration, Mailstop M-1, Equitable Building, 1705 Whitehead Road, Baltimore, Maryland 21207.

The Hospital Insurance (HI) program pays for inpatient hospital care and other related care for those aged 65 or older and for the long-term disabled. In calendar year 1989, HI covered 30 million aged and 3 million disabled enrollees at a cost of $60.8 billion. Of this amount, $60.0 billion was for benefit payments and $0.8 billion—only 1.3 percent of total disbursements—was for administrative expenses.

The payroll taxes of 136 million workers primarily financed the HI program in calendar year 1989. Payroll taxes amounting to $68.4 billion, or 89.1 percent of total income, were collected during the year. Interest payments to the HI Trust Fund amounted to 9.5 percent of total income. The remaining 1.4 percent of calendar year 1989 income consisted mostly of a transfer from the Railroad Retirement program, transfers from the general fund of the Treasury, and premiums paid by voluntary enrollees.

As mentioned above, the HI program is primarily financed by payroll taxes, with the taxes paid by current workers used mainly to pay benefits for current beneficiaries. Income not currently needed to pay benefits and related expenses is held in the HI Trust Fund. The assets of the fund may not be used for any other purpose. While in the fund, the assets are invested in certain interest-bearing obligations of the U.S. Government.

The HI contribution rates applicable to taxable earnings in each of the calendar years 1986 and later are shown in table 1. The maximum taxable amounts of annual earnings are shown for 1986 through 1990. After 1990, the automatic increase provisions in section 230 of the Social Security Act determine the maximum taxable amount of annual earnings.

Actuarial Status of the Trust Fund

The Board of Trustees recommends that it is advisable to maintain a balance in the trust fund equal to a minimum of one-half year's disbursements, as a reserve against fluctuations in program experience and to provide time for any needed legislation to remedy unexpected imbalances. At the beginning of 1990, the trust fund was above the minimum desired level.

Projections were made under four alternative sets of assumptions: optimistic, two intermediate sets (alternatives II-A and II-B), and pessimistic. Under both sets of intermediate assumptions, the trust fund ratio, defined as the ratio of assets at the beginning of the year to disbursements during the year, is projected to increase until 1994 and then decline steadily until the fund is completely exhausted shortly after the turn of the century. Under the more optimistic set of assumptions (alternative I), the trust fund is projected to remain solvent throughout the first 25-year projection period, with trust fund exhaustion occurring in 2018. Under the more pessimistic set of assumptions (alternative III), the trust fund ratio is projected to increase to a level of about 146 percent in 1992 and then decrease rapidly until the fund is exhausted in 1999.

Table 2 in this report summarizes the estimated operations of the HI Trust Fund under the four alternative sets of assumptions. Chart 1 shows historical trust fund ratios for recent years and projected ratios under the four sets of assumptions.

The adequacy of the financing of the HI program on a long-range basis is measured by comparing on a year-by-year basis the actual tax rates specified by law with the corresponding costs of the program, expressed as percentages of

taxable payroll. However, the financial status of the program is often summarized, over a specific projection period, by the actuarial balance. The actuarial balance is defined to be the excess of the average tax rate for the valuation period over the average cost of the program expressed as a percentage of taxable payroll.[1] Until this year, the average costs (expressed as a percentage of taxable payroll), average tax rates, and actuarial balances were computed on an average-cost basis. Beginning this year, however, these items are computed on a level-financing basis, for consistency with the Old-Age, Survivors, and Disability Insurance (OASDI) report, which has used the level-financing method since 1988. The "Actuarial Status of the Trust Fund" section in [the full] report contains descriptions of these two methods and their differences. Table 2 compares the actuarial balance under each of the four sets of assumptions for the 75-year projection period 1990-2064.[2]

[1] In previous reports, the actuarial balance was defined to be the excess of the average tax rate for the valuation period over the average cost of the program, expressed as a percentage of taxable payroll, for the same period, where cost included (1) program expenditures and (2) a small amount to maintain the trust fund at the level of at least a half-year's outgo after accounting for the offsetting effect of interest earnings. Beginning with the 1988 report, the actuarial balance is defined to be the excess of the average tax rate for the valuation period over the average cost of the program, expressed as a percentage of taxable payroll, for the same period, where cost represents program expenditures only. This approach is the same as the reporting methods of the OASDI report.

[2] Multi-year actuarial balances in this report are computed on the level-financing basis, as described in the "Actuarial Status of the Trust Fund" section [of the full report], unless otherwise indicated.

Chart 2 shows the year-by-year costs as a percent of taxable payroll for each of the four sets of assumptions, as well as the scheduled tax rates. As indicated in footnote 1, the cost figures in chart 2 do not include amounts for maintaining the trust fund at the level of at least a half-year's disbursements.

Chart 2 emphasizes the inadequacy of the financing of the HI program by illustrating the divergence of the program costs and scheduled tax rates under each set of assumptions.

Table 3 presents a comparison of the projected experience in the 1988 and 1990 reports.[3] As table 3 indicates, the projections in the 1990 report show that the fund will be depleted a few years earlier than in the 1988 report under the intermediate assumptions, with a larger change in the year of depletion occurring under the optimistic assumptions and no change at all under the pessimistic scenario. Table 4 shows the major reasons for the change in the 75-year actuarial balance of the HI program from that in the 1988 report.[4] The section of the full report entitled "Actuarial Status of the Trust Fund" discusses more completely the reasons for the change in the actuarial balance.

[3] A presentation of the long-range actuarial status of the trust fund did not appear in the 1989 report, for reasons given therein. Therefore, the projections in this report are compared to those in the 1988 report.

[4] Ibid.

Conclusion of the Board of Trustees

The present financing schedule for the HI program is sufficient to ensure the payment of benefits over the next 13-15 years if the intermediate assumptions underlying the estimates are realized, with trust fund exhaustion occurring in 2005 and 2003 under alternatives II-A and II-B, respectively. Under the more pessimistic alternative III, the fund is exhausted in 1999. Under the more optimistic alternative I, the trust fund is exhausted in 2018.

There are currently over four covered workers supporting each HI enrollee. This ratio will begin to decline rapidly early in the next century. By the middle of that century, there will be only about two covered workers supporting each enrollee. Not only are the anticipated reserves and financing of the HI program inadequate to offset this demographic change, but under all but the most optimistic assumptions, the trust fund is projected to become exhausted even before the major demographic shift begins to occur. Exhaustion of the fund is projected to occur shortly after the turn of the century under the intermediate assumptions, and could occur as early as 1999 if the pessimistic assumptions are realized.

The Board notes that promising steps have already been taken to begin reducing the rate of growth in payments to hospitals, including the implementation of prospective payment and diagnosis-related groups. Initial experience under the prospective payment system for hospitals suggests that this payment mechanism is an effective means of constraining the growth in hospital payments and improving the efficiency of the hospital industry. Efforts focused on improving the efficiency and reducing the costs of the health care delivery system need to be continued, in close combination with mechanisms that will assure that the quality of health care is not adversely affected.

Because of the magnitude of the projected actuarial deficit in the HI program and the probability that the HI Trust Fund will be exhausted shortly after the end of this century, the Board believes that early corrective action is essential in order to avoid the need for later, potentially precipitous changes. The Board, therefore, urges that the Congress take early remedial measures to bring future HI program costs and financing into balance, and to maintain an adequate trust fund against contingencies.

Table 1.—Contribution rates and maximum taxable amount of annual earnings, 1986–90

Calendar years	Maximum taxable amount of annual earnings	Contribution rate (percent of taxable earnings)	
		Employees and employers, each	Self-employed
1986	$42,000	1.45	2.90
1987	43,800	1.45	2.90
1988	45,000	1.45	2.90
1989	48,000	1.45	2.90
1990	51,300	1.45	2.90
Changes scheduled in present law:			
1991 and later	(1)	1.45	2.90

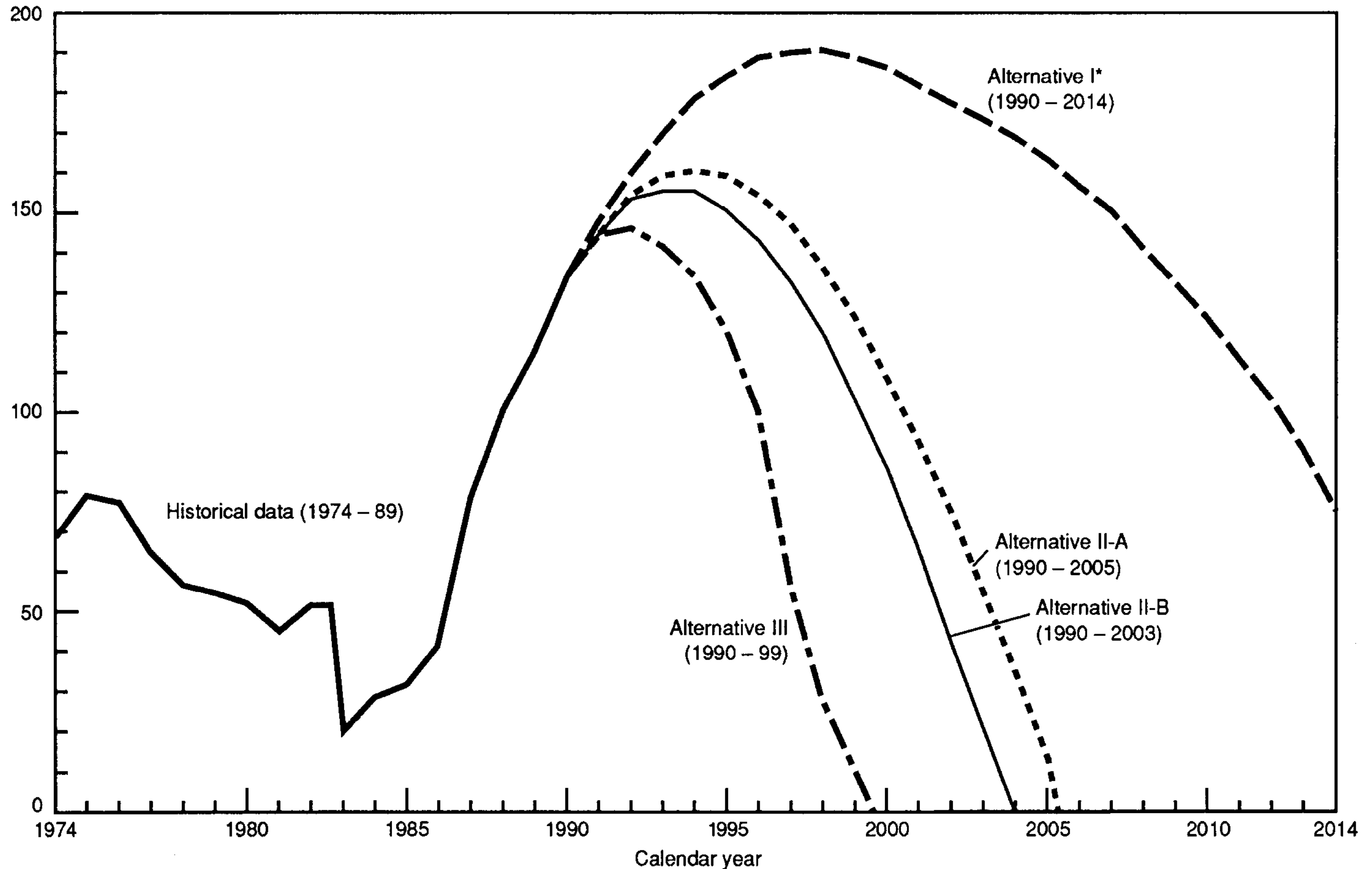
[1] Subject to automatic increase.

Table 2.—Seventy-five year actuarial balance of the Hospital Insurance program, under alternative sets of assumptions [1]

Item	Alternative I	Alternative II-A	Alternative II-B	Alternative III
Average contribution rate [2]	2.90	2.90	2.90	2.90
Average-cost basis:				
Average program expenditures [3 4]	3.74	6.09	6.52	12.01
Actuarial balance [5]	-.84	-3.19	-3.62	-9.11
Trust fund building and maintenance [3 6]	-.02	-.02	-.02	+.02
Program cost including trust fund building and maintenance [3 7]	3.72	6.07	6.50	12.03
Augmented balance [8]	-.82	-3.17	-3.60	-9.13
Level-financing basis:				
Average program expenditures [3 9]	3.65	5.73	6.16	11.26
Actuarial balance [10]	-.75	-2.83	-3.26	-8.36

[1] For the 75-year period 1990–2064.
[2] As scheduled under present law.
[3] Expressed as a percentage of taxable payroll.
[4] Expenditures for benefit payments and administrative costs for insured beneficiaries, on an incurred basis, computed on the average-cost basis.
[5] Difference between the average contribution rate (tax rate scheduled in the law) and program expenditures (computed on the average-cost basis).
[6] Allowance for building and maintaining the trust fund balance at the level of at least one half-year's outgo after accounting for the offsetting effect of interest earnings.
[7] Sum of program expenditures and trust fund building and maintenance.
[8] The augmented balance is the difference between the average contribution rate and the average cost of the program, including trust fund building and maintenance.
[9] Expenditures for benefit payments and administrative costs for insured beneficiaries, on an incurred basis, computed on the level-financing basis.
[10] Difference between the average contribution rate and program expenditures (computed on the level-financing basis).

Chart 1.— Short-term HI Trust Fund ratios



*The trust fund is depleted in 2018 under Alternative I.
Note: The trust fund ratio is defined as the ratio of assets at the beginning of the year to disbursements during the year.

Table 3.—Status of the Hospital Insurance Trust Fund

Assumption	Year in which trust fund is exhausted as published in—		75-year actuarial balance [1] of HI program as published in—	
	1988 report	1990 report	1988 report	1990 report
Alternative I......	2044	2018	−0.15	−0.75
Alternative II-A...	2008	2005	−2.11	−2.83
Alternative II-B...	2005	2003	−2.35	−3.26
Alternative III.....	1999	1999	−6.63	−8.35

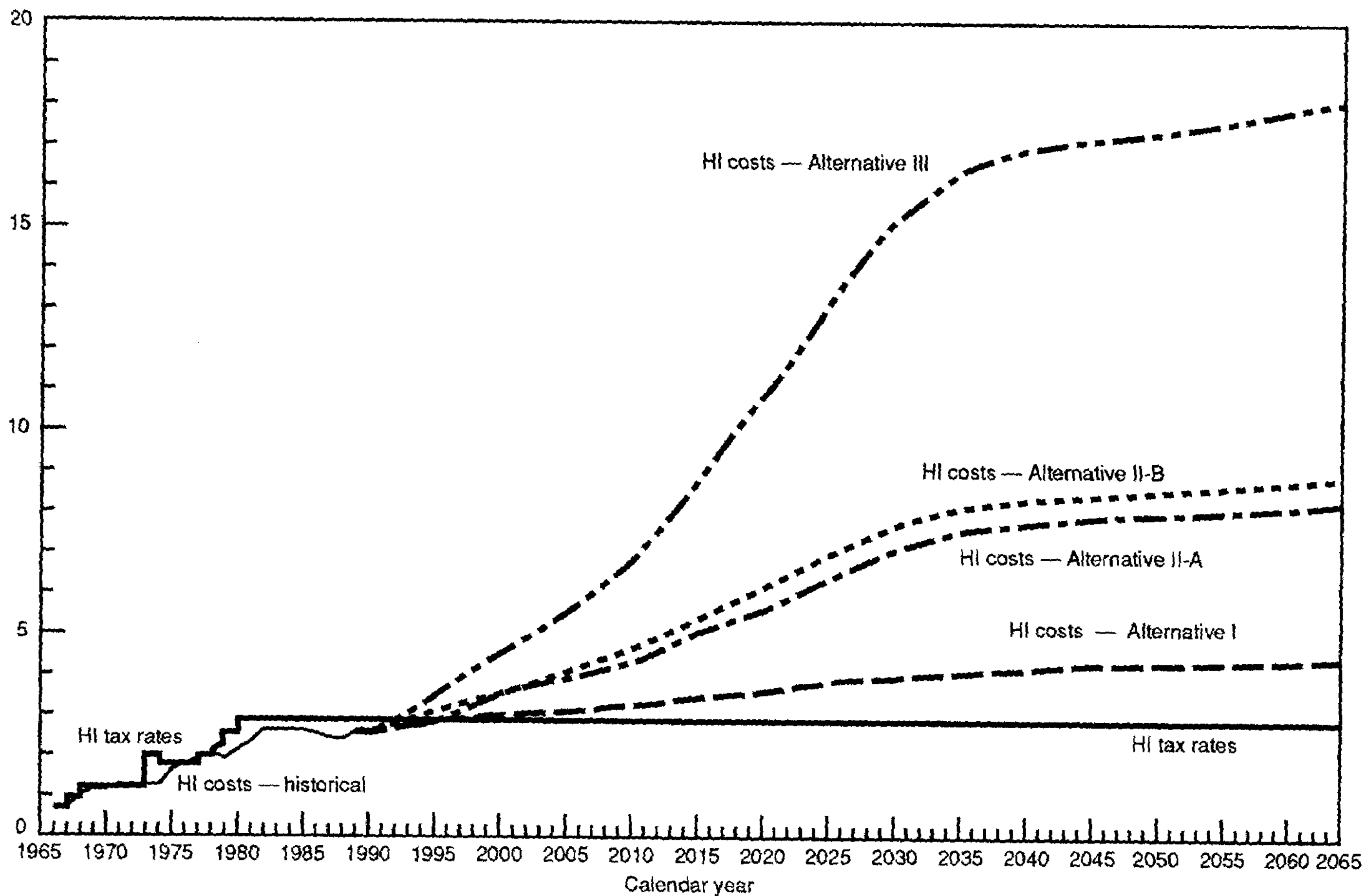
[1] The actuarial balance in the 1988 report was computed on an average-cost basis. In this report, for 1990, it is computed on a level-financing basis. See text for details.

Table 4.—Percentage change in the 75-year actuarial balance since the 1988 report, under alternative II–B

Actuarial balance, alternative II–B, 1988 report [1]	–2.35
Changes:	
Valuation period	–.17
Legislation since the 1988 report	–.81
Economic and demographic assumptions	–.24
Hospital assumptions and base estimates	–.05
Net effect, above changes	–1.27
Actuarial balance, alternative II–B, 1990 report [1]	–3.62
Change due to shift to level-financing method [2]	+.36
Actuarial balance, alternative II–B, 1990 report [3]	–3.26

[1] As defined in the 1988 report (average-cost method); *see* text for details.
[2] Includes +0.05 for recognition of the beginning trust fund balance and interest earnings on the projected trust fund balances.
[3] As defined in this report (level-financing method); see text for details.

Chart 2.— Estimated HI costs and tax rates



Note: HI projected costs shown are expenditures attributable to insured beneficiaries only, on an incurred basis, without an allowance for building and maintaining the trust fund balance at the level of at least a half-year's outgo.