

# Demographics and Medicare

by Richard S. Foster

The financial status of the Medicare program has been the subject of extensive news coverage in recent years. Most of the attention has focused on the projected imminent depletion of the Hospital Insurance (HI) trust fund. Occasionally, longer-term issues such as the effects of the baby boomers' retirement are considered. This article briefly summarizes the benefits and financing of the Medicare program, its financial status, and how the nation's impending demographic changes will affect the cost of the program.

## Background

Table 1 summarizes the enrollment, covered services, and financing provisions of the Medicare program. Information is shown separately for the two parts of Medicare, Hospital Insurance and Supplementary Medical Insurance (SMI), also known as "Parts A and B," respectively. As indicated, roughly 37 million people were eligible for Medicare benefits in 1995.<sup>1</sup> HI provides partial protection against the costs of inpatient hospital services, skilled nursing care, home health care, and hospice care. SMI covers most physician services, outpatient hospital care, and a variety of other

**TABLE 1**  
**MEDICARE ENROLLMENT, BENEFITS, AND FINANCING**

|                          | <b>Hospital Insurance (HI)</b>  | <b>Supplementary Medical Insurance (SMI)</b>   |
|--------------------------|---|--|
| Enrollment in CY 1995    |   |  |
| Total                    | 37.1 million  | 35.6 million   |
| Proportion with services | 22%   | 84%  |
| Benefits                 | Inpatient hospital care<br>Skilled nursing care<br>Home health care<br>Hospice care<br>Subject to deductible and coinsurance  | Physician services<br>Outpatient hospital services<br>Other services, for example:<br>• Diagnostic tests<br>• Medical equipment<br>• Ambulance<br>Subject to deductible and coinsurance  |
| Financing                | HI tax on covered earnings:<br>• 1.45% payable by employees and employers, each<br>• 2.90% payable by self-employed<br>• Following elimination of HI contribution base (effective 1994), HI tax applies to <i>all</i> earnings in covered employment<br>Revenue from taxation of OASDI benefits (portion between 50% and 85%) | Premiums paid by enrollees:<br>• \$42.50 per month in 1996<br>• Currently covers 25% of costs<br>General revenue transfers:<br>• \$127.30 per month for aged persons<br>• \$167.70 per month for disabled<br>• Covers remaining 75% of costs |

medical services such as diagnostic tests and durable medical equipment.

Only about 22% of HI enrollees received some reimbursable covered services during 1995, since hospital stays and related care tend to be infrequent events even for the aged and disabled. In contrast, the vast majority of enrollees incur reimbursable SMI costs because the covered services are more routine and the annual deductible for SMI is only \$100.

The two parts of Medicare are financed on totally different bases. HI costs are met primarily through a portion of the FICA and SECA payroll taxes.<sup>2</sup> Of the total tax rate of 7.65% of covered earnings, HI receives 1.45%, payable by each, employees and employers, with the self-employed paying the combined total of 2.90%. Following the Omnibus Budget Reconciliation Act of 1993, HI taxes are paid on total earnings in covered employment, without limit. Other HI income includes a portion of the income taxes levied on Social Security benefits, interest income on invested assets, and other minor sources.

SMI enrollees pay monthly premiums (\$42.50 in 1996) that currently cover roughly 25% of program costs. The balance is paid by general revenue of the federal government and a small amount of interest income.

The HI tax rate is specified in the Social Security Act and is not scheduled to change under present law. Thus, program financing cannot be modified to match variations in program costs except through new legislation. In contrast, SMI premiums and general revenue payments are reestablished each year to match estimated program costs for the following year. As a result, SMI income automatically matches expenditures without the need for legislative adjustments.

Each part of Medicare has its own trust fund, with financial oversight provided by a Board of Trustees.<sup>3</sup> The discussion in this article is based on the financial projections contained in the board's 1996 report to Congress. Such projections are made under three alternative sets of economic and demographic assumptions, to illustrate the uncertainty and possible range of variation of future costs, and cover both a "short-range" period (the next 10 years) and a "long-range" (the next 75 years). The projections are not intended as firm predictions of future costs, since this is clearly impossible; rather, they are intended to illustrate how the Medicare program would operate under a range of conditions that can reasonably be expected to occur. The projections shown in this article are based on the board's "intermediate" set of assumptions.

## Short-Range Financial Outlook for Hospital Insurance

Figure 1 shows past income, expenditures, and trust fund assets for the HI program and projections for the next 10 years. Throughout most of the program's history, income and expenditures have been very close, illustrating the pay-as-you-go nature of HI financing. The taxes collected each year are intended to be roughly sufficient to cover that year's costs. Surplus revenues are invested in special Treasury securities. The Board of Trustees has recommended maintaining assets equal to at least one year's expenditures as a contingency reserve.

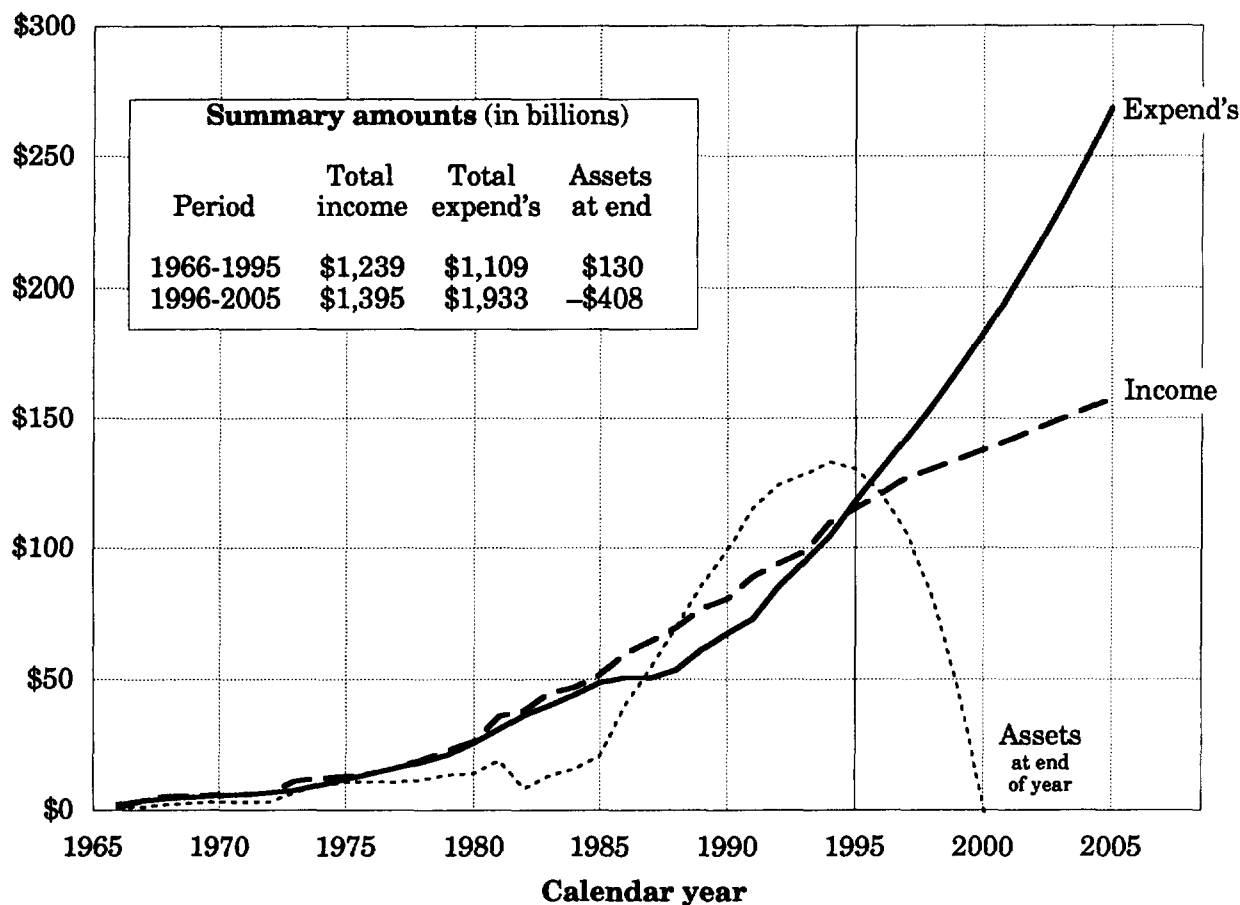
Since about 1990, HI expenditures have been increasing at a faster rate than has HI income. This trend is expected to continue, with costs growing at 8% to 9% annually, against revenue growth of only 5% to 6%. Starting in 1995, expenditures exceeded income. The shortfall was met by redeeming trust fund assets, but under the intermediate assumptions assets would be depleted early in 2001 in the absence of corrective legislation.

The nominal dollar amounts shown in Figure 1 are hard to interpret or compare over long periods of time, because of the changing value of the dollar. HI assets at the end of 1990 and 1997, for example, are both about \$100 billion, but the contingency reserves available at these points in time are clearly very different. For these reasons, relative measures of asset adequacy are helpful, as shown in Figure 2. Here assets are expressed relative to annual expenditures. Results are shown for the Old-Age, Survivors, and Disability Insurance (OASDI) program, highlighting the well-known accumulation of assets followed by a rapid draw-down as the baby boom generation reaches retirement age. HI assets follow the same pattern, except it is substantially accelerated—assets have already peaked and under present law would be depleted well before the baby boomers have even begun to retire.

## Long-Range Financial Outlook for Hospital Insurance

The interpretation of dollar amounts through time is especially difficult over extremely long periods like the 75-year projection period used in the board's reports. For this reason, long-range tax income and expenditures are expressed as a percentage of taxable payroll,

**FIGURE 1**  
**HI INCOME, EXPENDITURES, AND TRUST FUND ASSETS (IN BILLIONS)**



Note: Projections are based on the intermediate assumptions from the 1996 Trustees Reports.

with the results termed the “income rate” and “cost rate,” respectively. Projected income and cost rates are shown in Figure 3 for the HI program, along with the corresponding OASDI projections for comparison.

For both programs, past income rates have generally followed program costs closely, rising in a stepwise fashion as the payroll tax rates were adjusted by Congress. The financial problems experienced by the OASDI program in the mid-1970s and early 1980s are illustrated by the gap between the income and cost rates for that period. The current period of OASDI surpluses is also apparent.

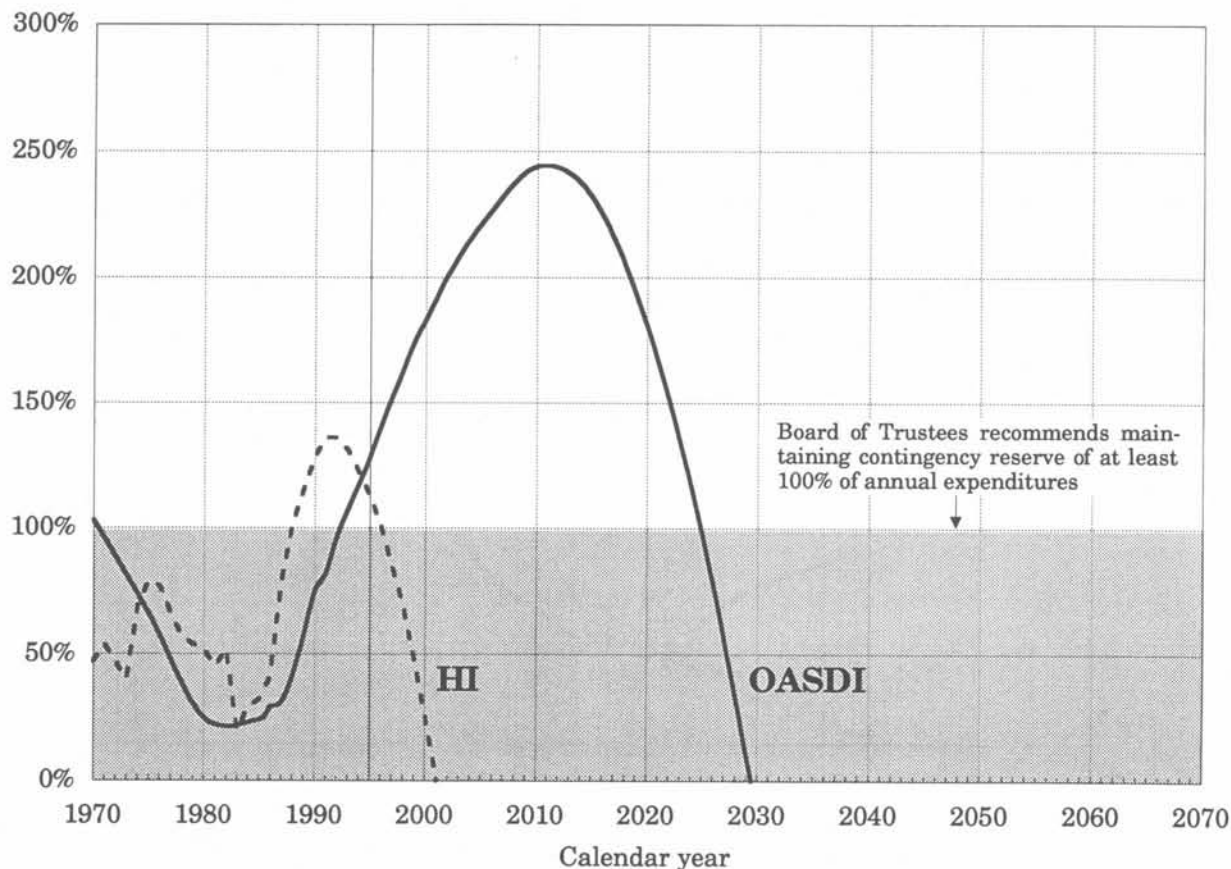
These differences between OASDI income and costs have generated considerable controversy over the years. Compare their magnitude, however, to that of the subsequent period of deficits for OASDI and HI. In particular, income rate growth for both programs is minimal,

because of the fixed tax rates specified in current law.<sup>4</sup> For HI, cost rates are projected to increase steadily under present law and to accelerate somewhat with the retirement of the baby boomers, beginning in about 2010. Closing the HI deficit over just the first 25 years would require either a 39% reduction in benefits or a 63% increase in income, or some combination, starting immediately. Over the full 75-year period, benefits would have to be reduced by 58% on average or taxes increased by 140%, or a combination of such steps.

## Demographic Impacts

The effect of the baby boomers’ retirement on Social Security and Medicare is relatively well known, having been discussed at length for more than 20 years.<sup>5</sup> When

**FIGURE 2**  
**TRUST FUND ASSETS**  
**(AT BEGINNING OF YEAR AS A PERCENTAGE OF ANNUAL EXPENDITURES)**



Note: Projections are based on the intermediate assumptions from the 1996 Trustees Reports.

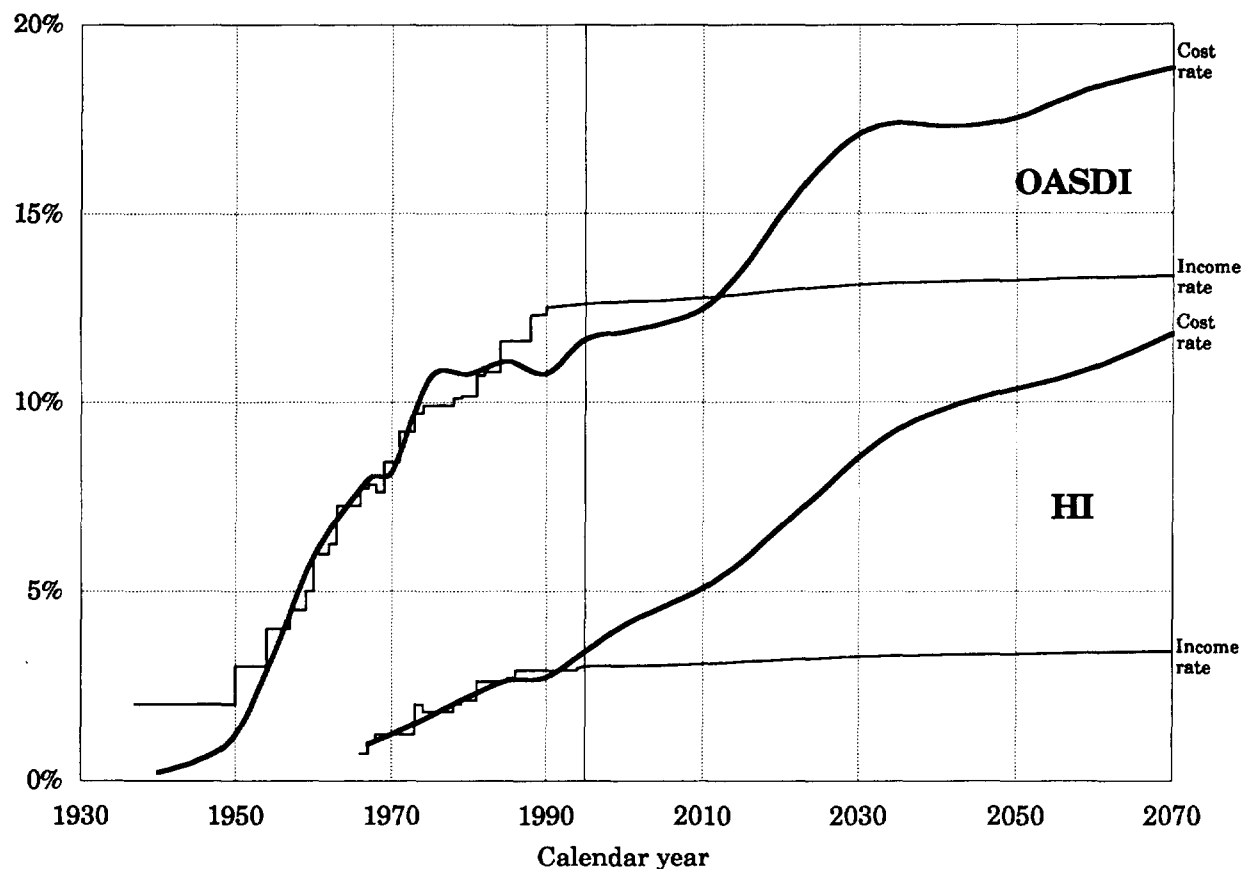
the HI program began, there were 4.5 workers in covered employment for every HI beneficiary. Currently, this ratio is 3.9 workers per beneficiary. With the advent of the baby boomers' retirement, the number of beneficiaries will increase more rapidly than the labor force, resulting in a decline in this ratio to 2.2 in 2030 and 2.0 in 2050 under the intermediate projections. Other things being equal, there would be a corresponding increase in HI costs as a percentage of taxable payroll.

There are other demographic effects beyond those attributable to the varying number of births in past years. In particular, life expectancy has improved substantially in the U.S. over time and is projected to continue doing so. As shown in Figure 4, the proportion of 20-year-olds who survive to age 65 has increased

from 68% in 1965, the year Medicare was enacted, to about 79% currently and is estimated to continue increasing, reaching 87% in 2055. In addition, for those reaching age 65, remaining life expectancy has also increased dramatically, from 12.4 years in 1935 to 17.2 years currently, with an estimated further increase to over 20 years at the end of the long-range projection period.

Medicare costs are also sensitive to the age distribution of beneficiaries. Older persons incur substantially larger costs for medical care, on average, than younger persons do. This effect is illustrated in Figure 5. For HI, the proportion of beneficiaries incurring zero costs in a year declines steadily with advancing age. Similarly, the number with substantial costs increases. The pattern is similar for SMI, except that most

**FIGURE 3**  
**LONG-RANGE INCOME RATES AND COST RATES**  
**(AS A PERCENTAGE OF TAXABLE PAYROLL)**



Note: Projections are based on the intermediate assumptions from the 1996 Trustees Reports.

beneficiaries have nonzero costs. Thus, as the beneficiary population ages over time, they will move into higher-utilization age groups and further exacerbate the financial pressures on the Medicare program.

## Financial Outlook for Supplementary Medical Insurance

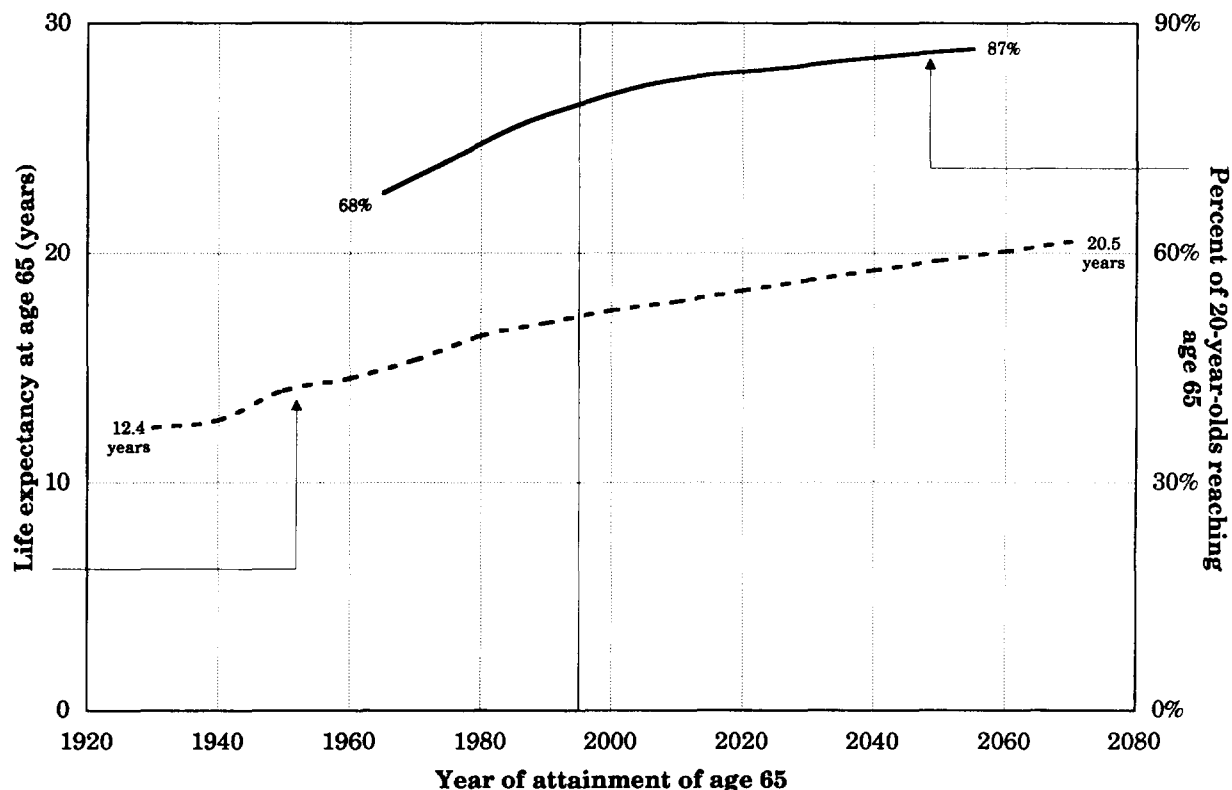
Most of the discussion so far has concerned the Hospital Insurance program. As a result of its imminent financial problems, most public attention is focused on HI. There are, however, serious issues associated with the SMI program as well.

Figure 6 presents the short-range outlook for SMI and is generally similar to the information presented in

Figure 1 for the HI program. Two key differences stand out: first, the income and expenditure curves for SMI are nearly indistinguishable, in the future as well as the past. As noted earlier, SMI premiums and general revenue income are reestablished annually to match expected program costs for the following year. Thus, the program will automatically be in financial balance under present law, regardless of future program cost trends. The second difference is the relative level of trust fund assets. Because financing is reset frequently, a lower level of assets can suffice for contingency reserve purposes.

The primary concern for SMI is the rapid rate of growth in benefits. SMI costs grew by 53% over the last five years, exceeding the growth in the nation's gross domestic product (GDP) by 22%. Similar growth

**FIGURE 4**  
**PROPORTION OF PERSONS REACHING AGE 65 AND LIFE EXPECTANCY AT AGE 65**



is projected for the short-range future under present law.

In the long range, as shown in Figure 7, the cost of SMI (expressed as a percentage of GDP) is expected to follow the same general pattern as seen for HI. Figure 7 also illustrates an additional concern for SMI. When Medicare was first enacted, premium rates were established to cover approximately 50% of costs. In 1972, however, legislation was enacted limiting premium growth to the increase in OASDI benefits.<sup>6</sup> SMI costs have always exceeded general inflation growth, so this legislation had the effect of reducing the share of costs met through beneficiary premiums. Subsequent legislation has kept this proportion at about 25%, but after 1998 the premiums will once again be constrained by OASDI cost-of-living adjustments. In the long term, premiums are projected to cover a declining share of costs, reaching only 6% by the end of the projection period. The difference must be made up through additional general revenues.

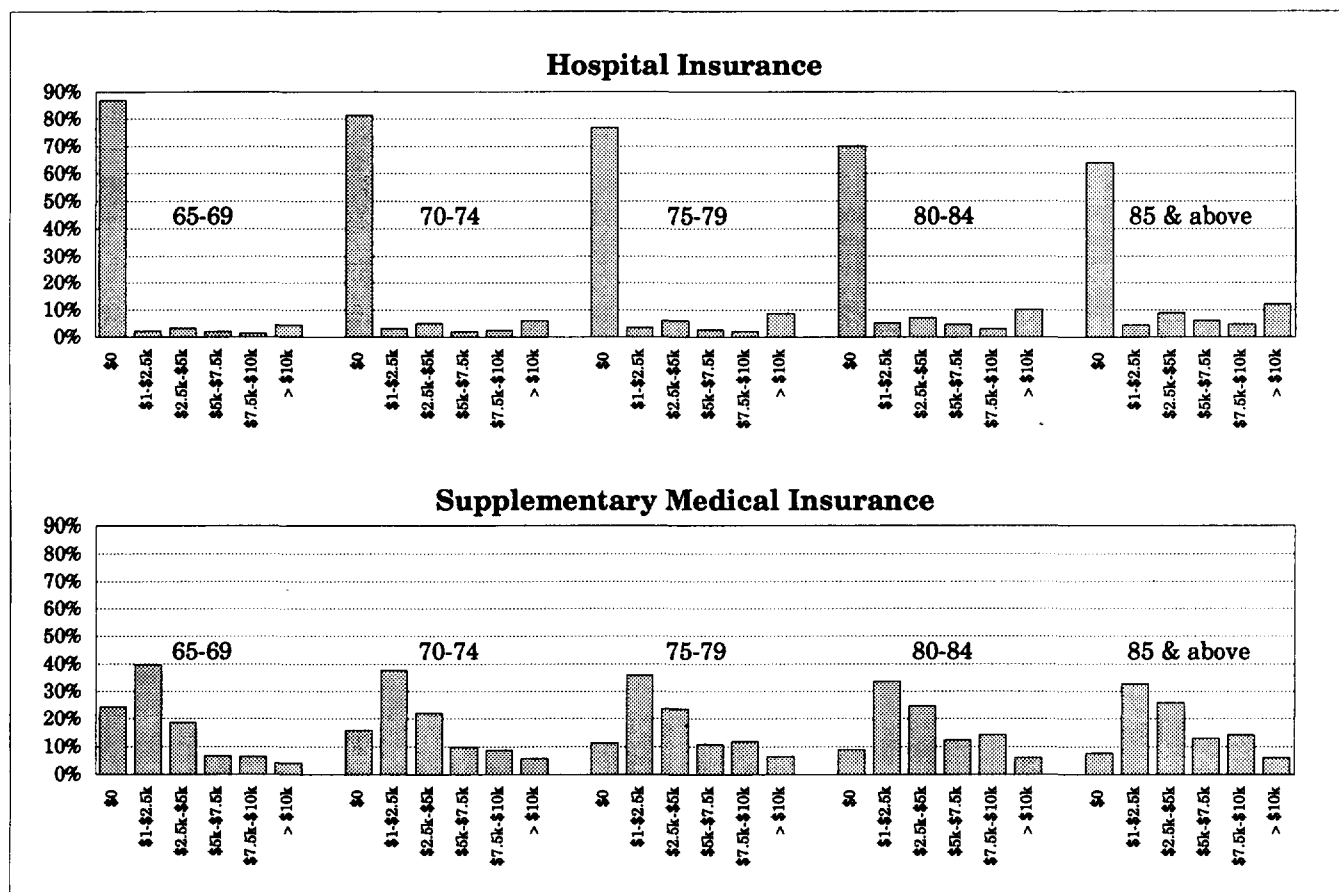
## Total Cost of Medicare

A meaningful comparison of the total cost of Medicare versus that for OASDI can be derived by expressing these costs as a percentage of GDP. This approach also highlights the proportion of the nation's annual economic output that is needed to cover the costs of these programs. As shown in Figure 8, total Medicare expenditures are projected to continue their historical rate of growth relative to GDP. In contrast, OASDI expenditures have increased at about the same rate as GDP since the advent of the wage-indexed benefit formula in 1979. OASDI costs will increase with the retirement of the baby boomers, but, under present law, Medicare costs are likely to surpass those for OASDI within the next 25 years.

## Conclusions

The Hospital Insurance program clearly faces a severe financial imbalance in both the short and the long

**FIGURE 5**  
**DISTRIBUTION OF MEDICARE REIMBURSEMENT PER BENEFICIARY, BY AGE GROUP**  
**(PROPORTION OF BENEFICIARIES WITH EXPENDITURES IN INTERVAL)**



range. Numerous proposals have been considered in recent years to postpone the near-term depletion of the trust fund, but these have been raised primarily in the context of balancing the overall federal budget. They have not been designed to address HI's long-term demographic pressures.

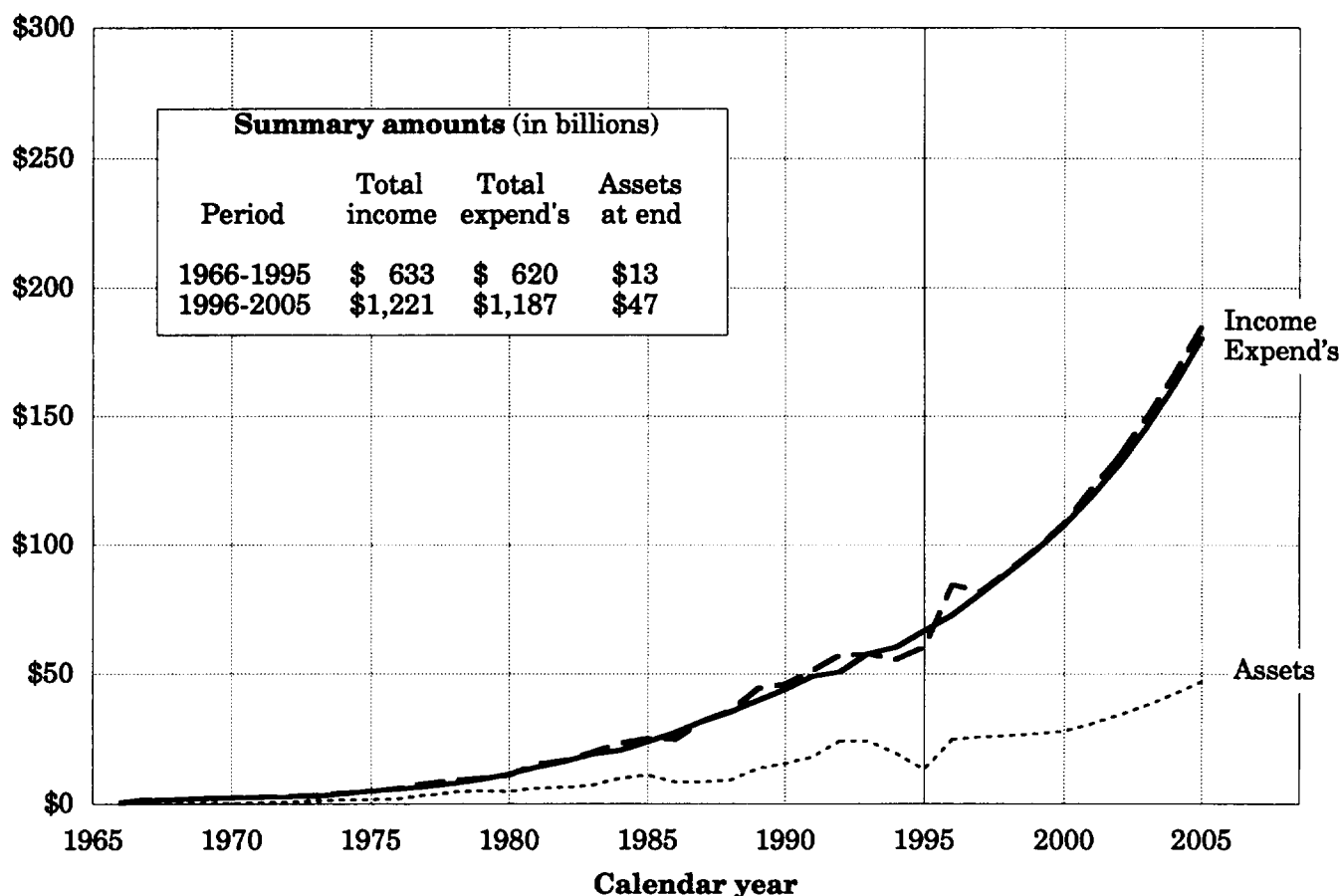
The Supplementary Medical Insurance program is automatically in financial balance. Policymakers express concern over the continuing rapid growth in program costs and the declining share of income provided through beneficiary premiums.

Solutions to these problems are possible. Achieving them, however, will require a much greater degree of cooperation between Congress and the administration than has been seen of late. It is a hopeful sign that both sides have recently expressed increased willingness to address these problems in a bipartisan manner. We can

realistically expect action in 1997 to address the immediate financial concerns and to establish a national commission to make recommendations for correcting the long-range financial imbalance.

Finally, in this regard, the matter of timing is critical. For example, correcting the HI financial imbalance in 1995 would have required some combination of slowing the growth in outgo and increasing the growth in income—in other words, the trends would have to be adjusted, but there was no existing gap between income and expenditures to close. In 1997, however, the trends must still be changed, and an annual gap of \$10–15 billion must be eliminated. If corrective action were to be delayed any longer, this gap would be two to three times larger, necessitating either an abrupt reduction in benefits (impossible) or a significant increase in taxes (highly unpopular). Thus, time is of the essence. As

**FIGURE 6**  
**SMI INCOME, EXPENDITURES, AND TRUST**  
**FUND ASSETS (IN BILLIONS)**



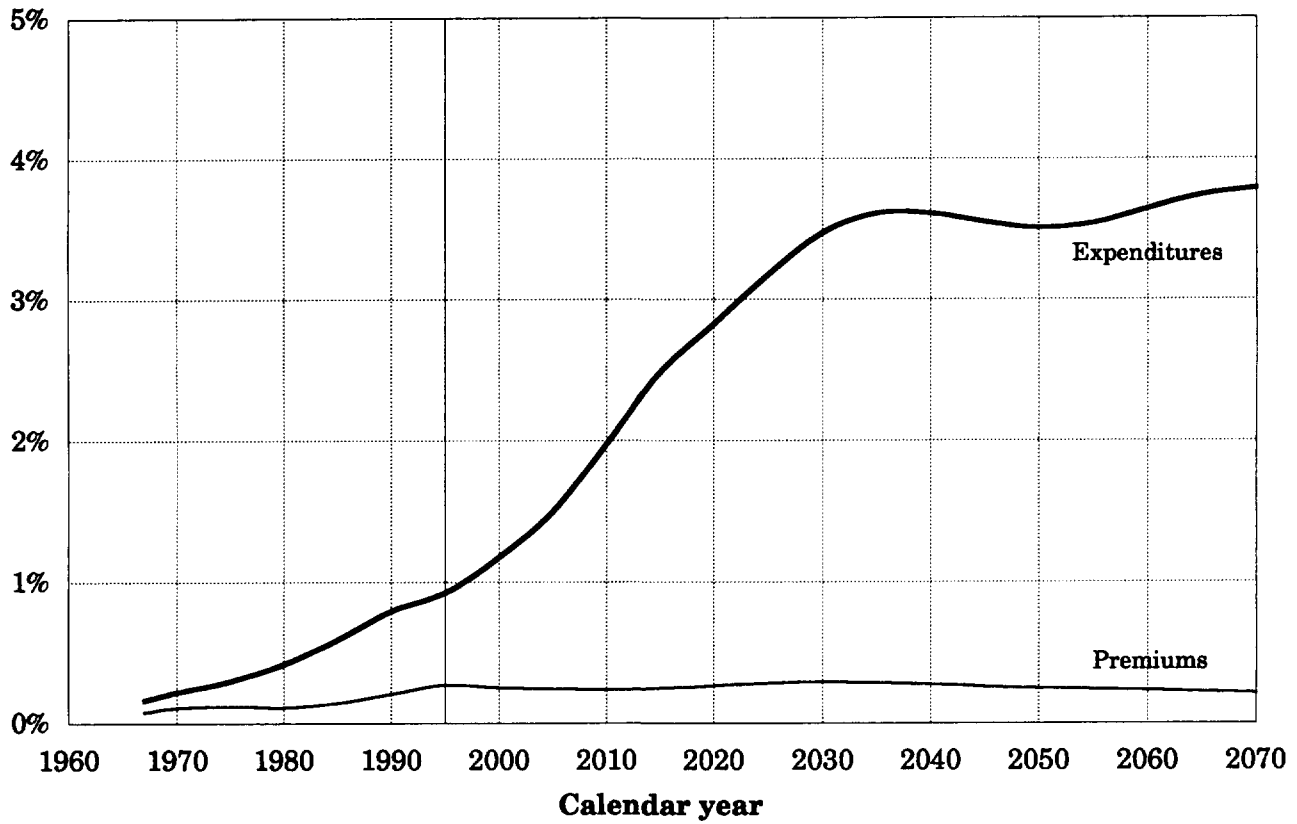
Note: Projections are based on the intermediate assumptions from the 1996 Trustees Reports.

someone once said, "Putting off an easy thing makes it hard, and putting off a hard one makes it impossible."

#### END NOTES

1. To qualify for HI, individuals must be 65 or older and be eligible for Social Security benefits, or have received Social Security disability benefits for at least 24 months, or have end-stage renal disease. SMI is a voluntary program, open to almost anyone 65 or older, and is available to the same categories of persons under 65 described for HI.
2. Federal Insurance Contributions Act and Self-employment Contributions Act, respectively.
3. The board is comprised of the Secretary of the Treasury, who serves as Managing Trustee, the Secretary of Labor, the Secretary of Health and Human Services, the Commissioner of Social Security, and two members representing the public at large.
4. Trust fund revenue from the taxation of OASDI benefits increases gradually, because the income thresholds specified in the Internal Revenue Code are not indexed. Over time, an increasing proportion of OASDI beneficiaries will incur income taxes on their benefit payments.
5. See, for example, the 1976 Annual Report of the Board of Trustees of the Old-Age, Survivors, and Disability Insurance Trust Funds.

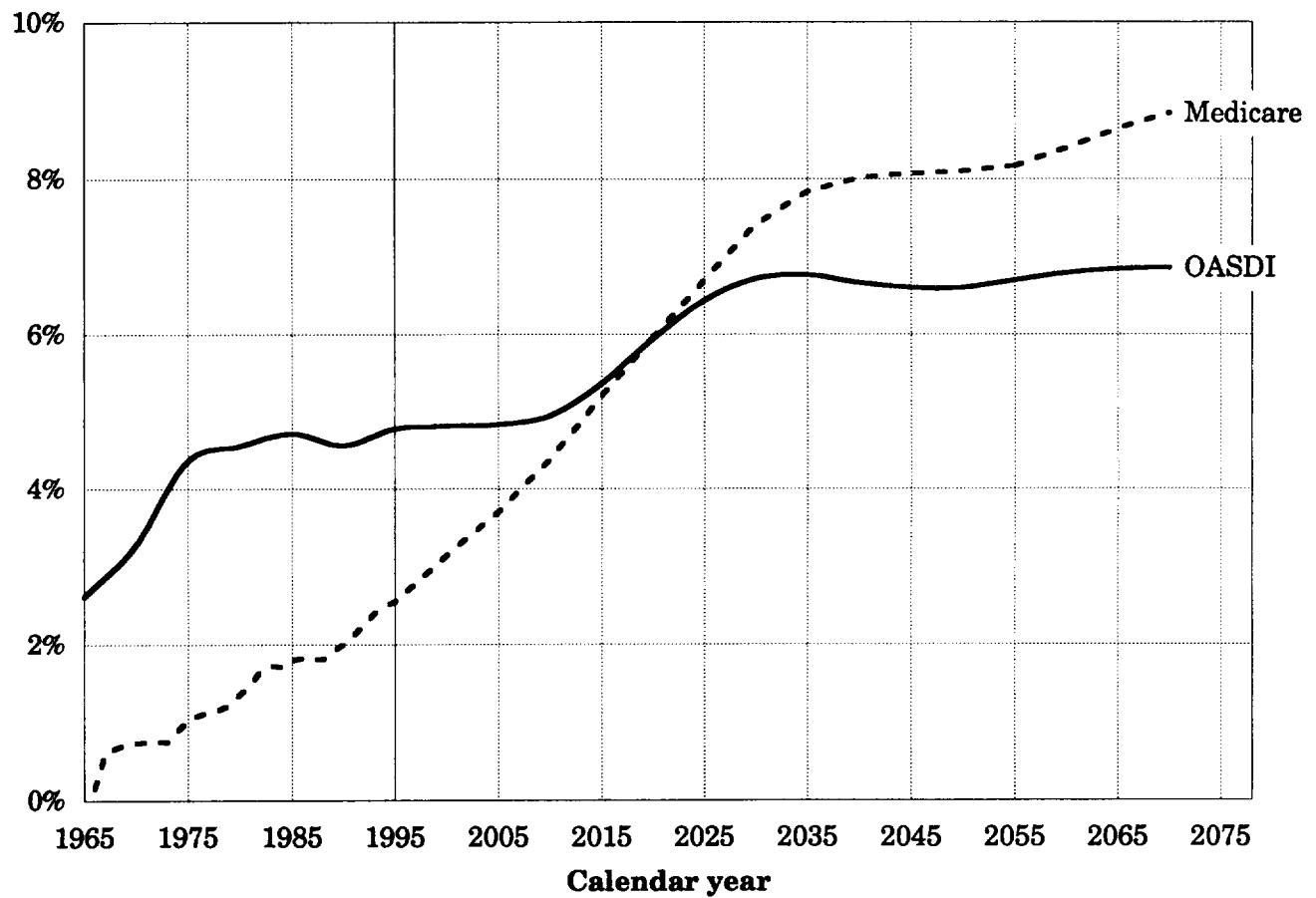
**FIGURE 7**  
**SMI EXPENDITURES AND PREMIUM INCOME**  
**[AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT (GDP)]**



Note: Projections are based on the intermediate assumptions from the 1996 Trustees Reports.

- Specifically, the premium increase could not exceed the Social Security cost-of-living adjustment (COLA), which is based on the percentage increase in the Consumer Price Index.

**FIGURE 8**  
**OASDI VS. MEDICARE EXPENDITURES**  
**[AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT (GDP)]**



Note: Projections are based on the intermediate assumptions from the 1996 Trustees Reports.