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107th Congress, 2d Session – – – – – – – – – – – – – – – – – House Document 107-197

# THE 2002 ANNUAL REPORT OF THE BOARDS OF TRUSTEES OF THE FEDERAL HOSPITAL INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS

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## COMMUNICATION

FROM

## THE BOARDS OF TRUSTEES, FEDERAL HOSPITAL INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS

TRANSMITTING

THE 2002 ANNUAL REPORT OF THE BOARDS OF TRUSTEES OF THE FEDERAL HOSPITAL INSURANCE AND FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS

April 9, 2002.—Referred to the Committee on Ways and Means
and ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE

78-604 WASHINGTON: 2002

## LETTER OF TRANSMITTAL

BOARD OF TRUSTEES OF THE
FEDERAL OLD-AGE AND SURVIVORS INSURANCE
AND DISABILITY INSURANCE TRUST FUNDS,
Washington, D.C., March 26, 2002

The Honorable J. Dennis Hastert
Speaker of the House of Representatives
Washington, D.C.

The Honorable Richard B. Cheney
President of the Senate
Washington, D.C.

Gentlemen:

We have the honor of transmitting to you the 2002 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance Trust Fund and the Federal Disability Insurance Trust Fund, the 62d such report.

Respectfully,

Paul H. O'Neill, *Secretary of the Treasury, and Managing Trustee of the Trust Funds.*

Elaine L. Chao, *Secretary of Labor, and Trustee.*

Tommy G. Thompson, *Secretary of Health and Human Services, and Trustee.*

Jo Anne B. Barnhart, *Commissioner of Social Security, and Trustee.*

John L. Palmer, *Trustee.*

Thomas R. Saving, *Trustee.*

James B. Lockhart III, *Deputy Commissioner of Social Security, and Secretary, Board of Trustees.*

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# I. OVERVIEW

## *A. INTRODUCTION*

The Medicare program is comprised of two parts. Hospital Insurance (HI), or Medicare Part A, helps pay for hospital, home health, skilled nursing facility, and hospice care for the aged and disabled. Supplementary Medical Insurance (SMI), or Medicare Part B, pays for physician, outpatient hospital, home health, and other services for the aged and disabled.

The HI trust fund is financed primarily by payroll taxes paid by workers and employers. The taxes paid each year are used mainly to pay benefits for current beneficiaries. The SMI trust fund is financed primarily by transfers from the general fund of the U.S. Treasury and by monthly premiums paid by beneficiaries. Income not currently needed to pay benefits and related expenses is held in the HI and SMI trust funds and invested in U.S. Treasury securities.

The Medicare Board of Trustees was established under the Social Security Act to oversee the financial operations of the HI and SMI trust funds.[1] The Board is composed of six members. Four members serve by virtue of their positions in the federal government: the Secretary of the Treasury, who is the Managing Trustee; the Secretary of Labor; the Secretary of Health and Human Services; and the Commissioner of Social Security. The other two members are appointed by the President and confirmed by the Senate to serve as public representatives: John L. Palmer and Thomas R. Saving, the current public Trustees, began serving their 4-year terms on October 28, 2000. The Administrator of the Centers for Medicare & Medicaid Services (CMS) is designated as Secretary of the Board.

This 2002 report is the 37th to be submitted. The report evaluates the near-term and longer-term financial status of both the HI and SMI trust funds under a range of possible future conditions. In past years, separate annual reports were issued for each trust fund. By combining the two reports, the Board believes that this important information can be presented in a more cohesive and convenient manner. A combined report can also better reflect both the high degree of integration between Medicare's two parts and the many factors that will have a common impact on future HI and SMI costs and thus can more effectively convey the financial outlook for the Medicare program as a whole.

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[1]Technically, separate boards are established for HI and SMI. Because both boards have the same membership, for convenience they are collectively referred to as the Medicare Board of Trustees in this report.

## *B. HIGHLIGHTS*

The major findings of this report are summarized below. Unless otherwise noted, all estimates are based on the "intermediate" set of assumptions, which represents the Trustees' best estimate of expected future economic and demographic trends. (Later sections of the report present alternative projections based on "low cost" and "high cost" assumptions.)

### 1. Medicare Program

- Combined HI and SMI expenditures as a percentage of the Gross Domestic Product (GDP) are projected to increase rapidly, from 2.4 percent in 2001 to 5.0 percent by 2035 and then to 8.6 percent by 2076.
- The distribution of Medicare financing among payroll taxes, general revenues, beneficiary premiums, and other sources will change in the future under current law, as SMI sources of financing automatically increase to match expenditures but HI sources do not.
- The future operations of the HI and SMI trust funds will be very sensitive to future economic, demographic, and health-cost trends and could differ substantially from the intermediate projections.
- It is important to recognize that meeting the financial challenges for HI and SMI will require integrated solutions.

### 2. HI Trust Fund

- The financial outlook for the HI trust fund presents a mixed picture. In the short range (2002-2011), the financial status of the fund is favorable, with HI assets (as a percentage of annual HI expenditures) estimated to increase from 124 percent in 2001 to 266 percent in 2011. Over the full long-range projection period, however, a substantial actuarial deficit equal to 2.02 percent of taxable payroll is projected.
- The HI trust fund meets the Trustees' test of short-range financial adequacy. HI income exceeded expenditures by $31.3 billion in calendar year 2001, despite a slowing economy and rapid growth in expenditures due to legislation in 2000 that increased payments to hospitals and other providers.
- Projected HI tax income would meet only a declining share of expenditures under present law. Tax income is expected to equal 111 percent of expenditures in 2002 but would fall short of expenditures by a rapidly growing margin after 2015. Tax revenues

would represent 68 percent of costs in 2030 and only 32 percent 75 years from now.

- As a result of this relationship between HI tax income and expenditures, HI trust fund assets (and associated interest income) are projected to increase steadily through about 2021 but then to decrease as assets are drawn down to cover the increasing HI tax shortfall. Under the intermediate assumptions, the HI trust fund is estimated to be depleted in 2030—a small improvement over last year's estimate of 2029.
- The HI trust fund fails by a wide margin to meet the Trustees' long-range test of close actuarial balance. To bring the HI trust fund into actuarial balance over the next 75 years, either outlays would have to be reduced by 38 percent or income increased by 60 percent (or some combination of the two) throughout the 75-year period.

**3. SMI Trust Fund**

- The SMI trust fund is expected to be adequately financed both in the near term and into the indefinite future, but only because current law provides for the establishment of financing each year based on an updated calculation of the expected cost per SMI beneficiary.
- In 2001, SMI benefits grew rapidly, registering a 12-percent increase over the level in 2000. This rate of growth is largely attributable to legislation enacted in 1997 and 1999, including the introduction of new preventative-care benefits and the shift of a further one-sixth of the cost of certain home health care services from HI to SMI.
- SMI benefits have historically increased very rapidly, although growth moderated significantly in the late 1990s. Over the next 10 years, the average annual increase in benefit payments is estimated to be 6.6 percent, compared to a growth rate 5.1 percent for the economy as a whole.
- SMI outlays were 1.0 percent of GDP in 2001 and are projected to grow to about 3.7 percent by 2076. Growth of this magnitude would result in a significantly larger obligation for SMI beneficiaries and the federal budget.

We note with great concern that past Medicare costs have generally grown significantly faster than the GDP and that this trend is expected to continue under present law. Further effective and decisive action is necessary to build upon the strong steps taken in recent reforms.

## 4. Key Medicare Data for Calendar Year 2001

| | HI | SMI | Total |
|---|---|---|---|
| *Enrollment:* | | | |
| Aged (millions) | 34.0 | 32.7 | 34.4[1] |
| Disabled (millions) | 5.7 | 5.0 | 5.7[1] |
| Total (millions) | 39.7 | 37.7 | 40.1[1] |
| Increase since 2000 | 1.2% | 0.9% | 1.2% |
| Increase since 1991 | 15.1% | 13.5% | 14.7% |
| Percent receiving covered services in 2001 | 22% | 87% | — |
| *Income:* | | | |
| Total income (billions) | $174.6 | $98.6 | $273.3 |
| Increase since 2000 | 4.5% | 9.7% | 6.3% |
| Increase since 1991 | 96.6% | 92.5% | 95.1% |
| *Expenditures:* | | | |
| Total benefits (billions) | $141.2 | $99.7 | $240.9 |
| Increase since 2000 | 9.9% | 12.1% | 10.8% |
| Increase since 1991 | 97.3% | 105.4% | 102.6% |
| Average benefit per enrollee | $3,554 | $2,645 | $6,199 |
| Increase since 2000 | 8.5% | 11.1% | 9.6% |
| Increase since 1991 | 71.7% | 85.5% | 77.3% |
| Administrative costs (billions) | $2.2 | $1.7 | $3.9 |
| Percentage of total expenditures | 1.5% | 1.7% | 1.6% |
| *Trust fund operations in calendar year 2001 (billions):* | | | |
| Fund assets (12/31/00) | $177.5 | $44.0 | $221.5 |
| Total income | 174.6 | 98.6 | 273.3 |
| Total expenditures | 143.4 | 101.4 | 244.8 |
| Fund assets (12/31/01) | 208.7 | 41.3 | 250.0 |
| Net change in assets | 31.3 | -2.8 | 28.5 |

[1]Number of beneficiaries with HI and/or SMI coverage.

## *C. ECONOMIC AND DEMOGRAPHIC ASSUMPTIONS*

Actual future Medicare expenditures will depend on a number of factors, including the size and composition of the population eligible for benefits, changes in the volume and intensity of hospital, physician, skilled nursing, home health, and other medical services received by beneficiaries, and increases in the price per service. For HI, future trust fund income will depend on the size and characteristics of the covered work force and the level of workers' earnings. These factors will depend in turn upon future birth rates, death rates, labor force participation rates, wage increases, and many other economic and demographic circumstances affecting Medicare.

To illustrate the uncertainty and sensitivity inherent in estimates of future Medicare trust fund operations, projections have been prepared under a "low cost" and a "high cost" set of assumptions as well as under the intermediate assumptions. In addition, section IV.D of this report presents a supplementary analysis of uncertainty for the SMI trust fund, using statistical methods. For simplicity of presentation, much of the analysis in this overview centers on the projections under intermediate assumptions. However, it is important to recognize that actual conditions are very likely to differ from that scenario or from any other specific set of assumptions.

Many of the demographic and economic variables that determine Medicare costs and income are common to the Old-Age, Survivors, and Disability Insurance (OASDI) program and are explained in detail in the report of the OASDI Board of Trustees. As shown in table I.C1 below, these variables include changes in the Consumer Price Index (CPI) and wages, real interest rates, fertility rates, and mortality rates. ("Real" indicates that the effects of inflation have been removed.) The assumptions vary, in most cases, from year to year during the first 5 to 30 years before reaching their so-called "ultimate" values for the remainder of the 75-year projection period. These ultimate values are shown in table I.C1.

Other assumptions are specific to HI and SMI. As with all of the assumptions underlying the Trustees' financial projections, the HI- and SMI-specific assumptions are reviewed annually and updated based on the latest available data and analysis of trends. In addition, the assumptions and projection methodology are subject to periodic review by independent panels of expert actuaries and economists. The most recent such review was conducted by the 2000 Medicare Technical Review Panel, which issued its findings in December 2000.

*Overview*

The panel's report is available on the Centers for Medicare & Medicaid Services web site at http://www.hcfa.gov/pubforms/actuary/TechnicalPanel/.

**Table I.C1.—Ultimate Assumptions**

| | Intermediate | Low Cost | High Cost |
|---|---|---|---|
| Economic: | | | |
| Annual percentage change in: | | | |
| Gross Domestic Product (GDP) per capita | 4.2 | 4.0 | 4.3 |
| Average wage in covered employment | 4.1 | 3.6 | 4.6 |
| Consumer Price Index (CPI) | 3.0 | 2.0 | 4.0 |
| Real-wage differential (percent) | 1.1 | 1.6 | 0.6 |
| Real interest rate (percent) | 3.0 | 3.7 | 2.2 |
| Demographic: | | | |
| Total fertility rate (children per woman) | 1.95 | 2.2 | 1.7 |
| Average annual percentage reduction in total age-sex adjusted death rates from 2026 to 2076[1] | 0.73 | 0.35 | 1.29 |
| Health cost growth: | | | |
| Annual percentage change in per beneficiary Medicare expenditures (excluding demographic impacts) | 5.2 | [2] | [2] |

[1]Actual ultimate assumptions for reductions in death rates are specified in detail—by age group, sex, and cause of death.
[2]See section II.B for further explanation.

The assumed long-range rate of growth in Medicare expenditures is one of the most critical determinants of the projected cost of HI- and SMI-covered health care services in the more distant future. For HI and SMI, the long-range increase in average expenditures per beneficiary (excluding demographic impacts) is assumed to equal growth in per capita GDP plus 1 percentage point. The growth rates are estimated year by year for the next 12 years, reflecting the impact of specific statutory provisions. Expenditure growth for years 13 to 25 is assumed to grade smoothly into the long-range assumptions.

The long-range expenditure growth assumptions are based on the recommendation of the 2000 Medicare Technical Review Panel. The panel believed that, in the long run, Medicare and overall health care spending would have the same per capita growth rate. Their conclusion that both Medicare costs and overall health care spending will grow faster than GDP was largely based on the historical impact of advances in medical technology on health care cost increases, which they expected to continue indefinitely. They also considered other factors contributing to health care cost increases, the assumptions of other forecasters, and the "sustainability" of such cost increases in the very long range.

In HI, for the high cost assumptions, the annual increase in costs (relative to increases in taxable payroll) during the initial 25-year

period is assumed to be 2 percentage points greater than under the intermediate assumptions. Under low cost assumptions, the increase during the same period is assumed to be 2 percentage points less than under intermediate assumptions. The 2-percent differentials for the high and low assumptions are assumed to decline gradually until 2051, when the same rate of increase in HI costs (relative to taxable payroll) is assumed for all three sets of assumptions. Because of its automatic financing provisions, the SMI trust fund is expected to be adequately financed into the indefinite future, so a long-range analysis using high cost and low cost assumptions is not conducted. Such assumptions would, however, have substantial implications for projected SMI costs and thus for beneficiaries and the economy as a whole.

While it is reasonable to expect that actual trust fund experience will fall within the range defined by the three alternative sets of assumptions, no definite assurance can be given in light of the wide variations in experience that have occurred since the beginning of the Medicare program. In general, a greater degree of confidence can be placed in the assumptions and estimates for the earlier years than for the later years. Nonetheless, even for the earlier years, the estimates are only an indication of the expected trend and the general range of future HI and SMI experience.

## *D. FINANCIAL OUTLOOK FOR THE MEDICARE PROGRAM*

This report evaluates the financial status of the HI and SMI trust funds. To that end, projections are shown for HI tax revenues, total income, and expenditures and for SMI premiums, general revenue transfers, total income, and expenditures. For HI, the Trustees apply formal tests of financial status for both the short range and the long range; for SMI, the Trustees assess the ability to meet incurred costs over the period for which financing has been set. Often, however, individuals may focus primarily on HI and place less emphasis on the financial aspects of the SMI trust fund.

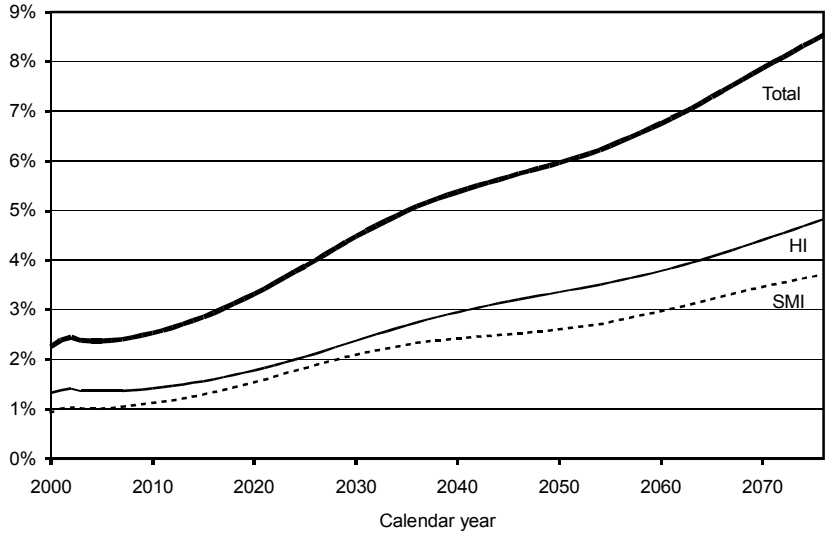
This imbalance occurs in large part because of the very different ways in which HI and SMI are financed. HI is subject to substantial variation in asset growth, since financing is established through statutory tax rates that cannot be adjusted except by enactment of new legislation. In contrast, SMI premiums and general revenue financing are reestablished annually to match expected costs for the following year. (Beneficiary premiums cover approximately 25 percent of SMI expenditures, with general revenues making up the balance.) As such, the SMI trust fund is free from periodic financing crises, and attention to its expenditure growth and financing requirements tends to be muted.

Despite the significant differences in eligibility rules, benefit provisions, and financing between HI and SMI, the two parts of Medicare are closely related. Most beneficiaries are enrolled in both HI and SMI, and many of them receive health care services from both parts of Medicare in a given year. Efforts to improve and reform either part must necessarily involve the other part as well. In view of the anticipated growth in Medicare expenditures, it is also important to consider the balance among the various sources of revenues for financing Medicare and the manner in which these will change over time under present law.

In this section, the projected total expenditures for the Medicare program are considered, along with the primary sources of financing. Figure I.D1 shows projected costs as a percentage of GDP. Medicare expenditures represented 2.40 percent of GDP in 2001. A number of factors affect HI and SMI cost growth, as described elsewhere in this report. Total Medicare spending is projected to increase to about 5 percent of GDP over the next 35 years under the intermediate assumptions and to more than 8 percent of GDP by the end of the 75-year period. For comparison, that cost would represent roughly

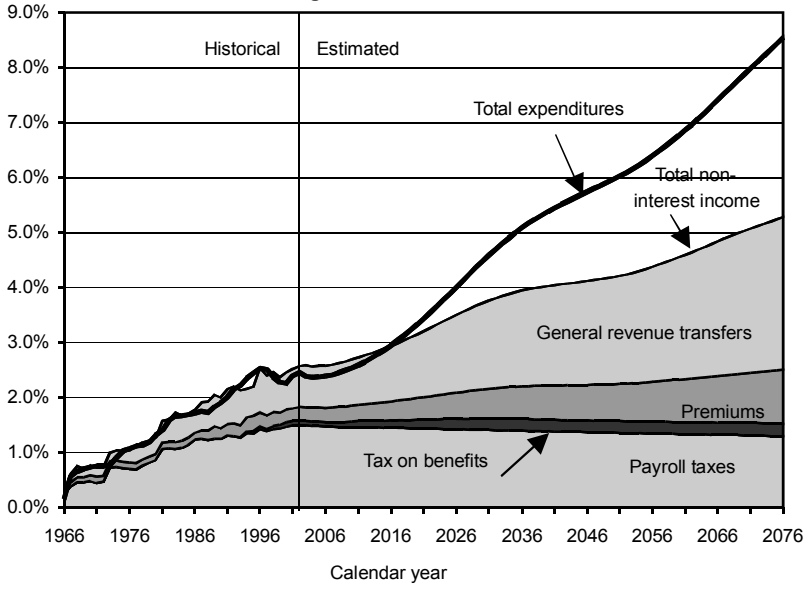
one-fourth more than today's cost for Medicare and Social Security combined.

**Figure I.D1.—Medicare Incurred Expenditures as a Percentage of the Gross Domestic Product**




The past and projected amounts of Medicare revenues, under present law, are shown in figure I.D2. Interest income is excluded since it would not be a significant part of program financing in the long range. Medicare revenues—from HI payroll taxes, HI income from the taxation of Social Security benefits, HI and SMI premiums, and SMI general revenues—are compared to total Medicare expenditures. As one would expect, the two amounts are generally very similar in past years, since these revenues represented the major sources of program financing. Over the next 15 years, such Medicare revenues are estimated to slightly exceed program expenditures, reflecting the automatic financing of SMI plus an expected excess of HI tax income over expenditures (as described previously in this Overview). Thereafter, however, overall expenditures are projected to exceed aggregate revenues. Again, the growing difference arises from the projected imbalance between HI tax income and expenditures. Throughout this period, SMI revenues would continue to approximately match SMI expenditures, due to the annual adjustment of the financing.

**Figure I.D2.—Medicare Sources of Non-Interest Income and Expenditures as a Percentage of the Gross Domestic Product**




As shown in figure I.D2, payroll tax revenues increased rapidly as a percentage of GDP in the past, due to increases in the HI payroll tax rate and maximum taxable earnings base, the latter of which was eliminated in 1994. In the future, however, payroll taxes are not projected to grow faster than GDP primarily because no further increases in the tax rate are scheduled in present law. (The ratio decreases slowly over time, since wages, salaries, and self-employment income are expected to decline gradually as a share of total compensation, with faster growth in fringe benefits making up the difference.) HI revenue from income taxes on Social Security benefits would increase as a share of GDP as additional beneficiaries become subject to such taxes.

By comparison, growth in SMI premiums and general fund transfers is expected to continue to outpace GDP growth and HI payroll tax growth in the future. This phenomenon occurs primarily because, under present law, SMI revenue increases at the same rate as expenditures, whereas HI revenue does not. Thus, as the HI sources of revenue become increasingly inadequate to cover HI costs, SMI revenues would represent a growing share of total Medicare revenues. Indeed, if nothing were done to address the large financing gap projected for HI under current law and total expenditures exceed future income as shown in figure I.D2, then general revenue transfers

would ultimately constitute the largest single source of income to the Medicare program as a whole—and would place a large burden on the federal budget. Although a smaller share of the total, SMI premiums would grow just as rapidly as general revenues, thereby also placing a growing burden on beneficiaries. (Section II.C of this report provides a further assessment of the implications of SMI cost growth for the federal budget and for beneficiaries.)

This section has summarized the total financial obligation posed by Medicare and the manner in which it is financed. These are important issues for policy makers and the public to consider. Under present law, however, the HI and SMI components of Medicare have separate and distinct trust funds, each with its own sources of revenues and mandated expenditures. Accordingly, the financial status of each Medicare trust fund must be assessed separately. The next two sections of this report present such assessments for the HI trust fund and the SMI trust fund, respectively.

## *E. HI TRUST FUND FINANCIAL STATUS*

### 1. 2001 Trust Fund Financial Operations

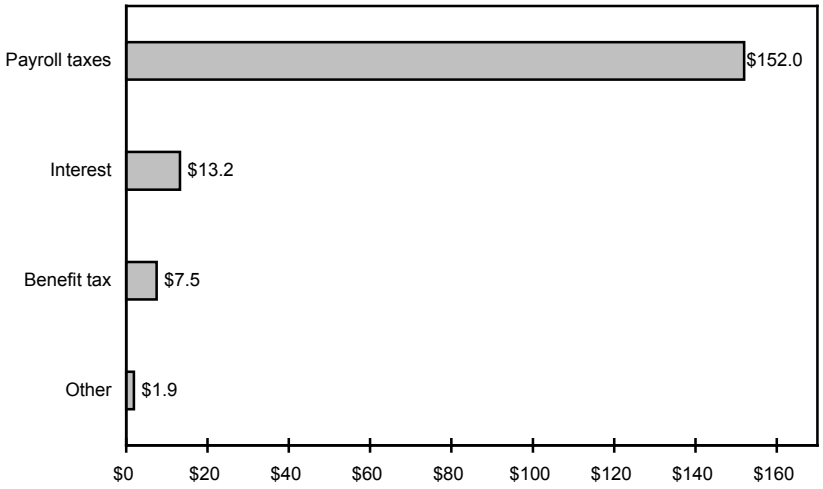
Total HI income in calendar year 2001 was $174.6 billion, and total expenditures were $143.4 billion. The assets of the fund therefore increased by a net total of $31.3 billion, the fourth consecutive year that the trust fund has experienced a positive cash flow. As of December 31, 2001, the HI trust fund had $208.7 billion in assets.

#### *a. Income*

The $174.6 billion in income received by the HI trust fund last year was derived from the following sources:

- Payroll taxes. The primary source of financing for HI is the payroll tax on covered earnings. Employees and their employers each pay 1.45 percent of earnings, while self-employed workers pay 2.9 percent of their net income. HI payroll taxes amounted to $152.0 billion in calendar year 2001, or 87 percent of total HI income.
- Interest. Interest income of $13.2 billion was paid in 2001 on the U.S. Treasury securities held by the trust fund. This income accounted for 7.5 percent of HI revenue. The average rate of interest earned on trust fund assets in 2001 was 6.9 percent.
- Taxation of benefits. A portion of the federal income taxes that people pay on their Social Security benefits is allocated to the HI trust fund. In 2001, $7.5 billion was deposited in the trust fund from taxation of Social Security benefits, accounting for 4 percent of total HI income.
- Other. An additional $1.9 billion in miscellaneous revenue, representing about 1.1 percent of total HI income, was also received in 2001. (See section II.B for a discussion of these items.)

**Figure I.E1.—HI Income in Calendar Year 2001**
[In billions]

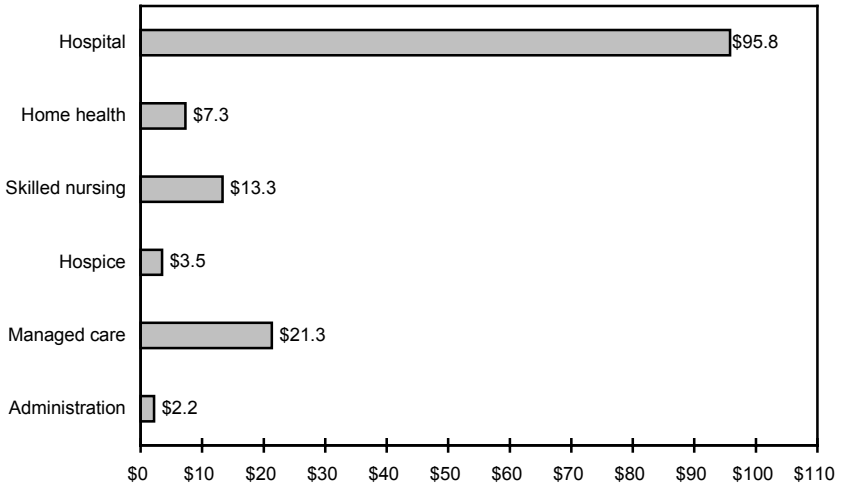



### *b. Expenditures*

The HI fund spent $143.4 billion in calendar year 2001. The major expenditures consisted of the following:

- Benefit payments. Benefit payments represented 98 percent of HI outlays. About 68 percent of these payments were for fee-for-service inpatient hospital services. Fee-for-service expenditures for skilled nursing, home health, and hospice care represented 10 percent, 5 percent, and 2 percent of total HI benefits, respectively. Payments to managed care plans were 15 percent of total benefits.
- Administrative expenses. Approximately $2.2 billion, or 1.5 percent of HI outlays during calendar year 2001, paid the administrative expenses of the trust fund. This amount included funds to support the Medicare intermediaries (generally insurance companies) that assist in administering HI, as well as funds for federal salaries and related expenses.

**Figure I.E2.—HI Expenditures in Calendar Year 2001**
[In billions]

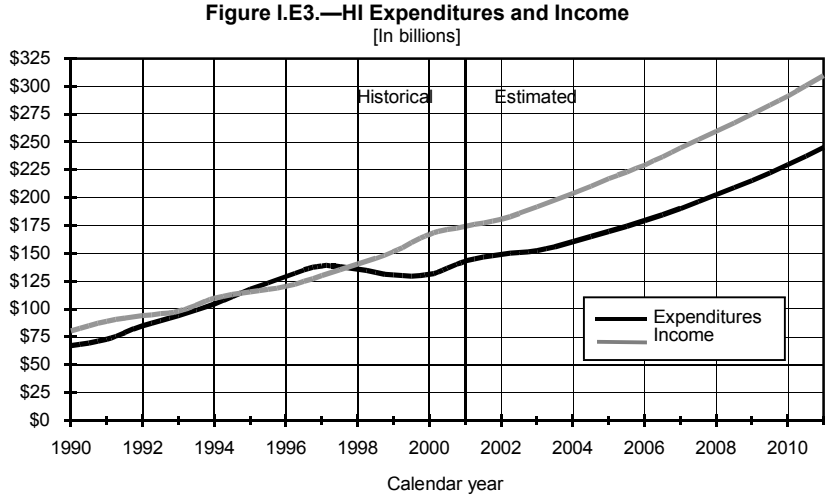



## 2. Actuarial Estimates

### *a. 10-Year Actuarial Estimates (2002-2011)*

For 1998 through 2002, annual growth in HI expenditures is estimated to average about 1 percent as a result of the Balanced Budget Act of 1997 (BBA) and because of favorable price and utilization trends. From then on, however, expenditure growth is expected to increase to the level of about 6 percent. Currently, the HI trust fund is experiencing significant annual surpluses of income over expenditures. After 2012, these surpluses are projected to gradually decline until turning to deficits in 2022 and later.

**Figure I.E3.—HI Expenditures and Income**
[In billions]




The BBA reduced the rate of growth in HI expenditures through a combination of measures. New prospective payment systems were implemented—in 1998 for Medicare payments to skilled nursing facilities and in 2000 for home health agencies. In addition, annual payment updates for all HI health care providers were constrained. Finally, the majority of home health care services were reclassified as an SMI benefit, shifting the cost of such services over a 6-year period from the HI trust fund to the SMI trust fund. The Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999 and the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 eased certain of these provisions somewhat, but the overall net impact of all these Acts is still to reduce HI expenditures substantially.

Table I.E1 presents the projected operations of the HI trust fund under the intermediate assumptions for the next decade. At the beginning of 2002, HI assets were above the level of annual expenditures. The Board of Trustees has recommended that assets be maintained at a level at least equal to annual expenditures, to serve as an adequate contingency reserve in the event of adverse economic or other conditions. This guideline represents a more stringent standard than just maintaining a positive balance.

Based on the 10-year projection shown in table I.E1, the Board of Trustees applies an explicit test of short-range financial adequacy, which is described in section II.B of this report. For the third consecutive year, the HI trust fund meets this test.

**Table I.E1.—Estimated Operations of the HI Trust Fund under Intermediate Assumptions, Calendar Years 2001-2011**

[Dollar amounts in billions]

| Calendar year | Total income | Total expenditures | Change in fund | Fund at year end | Ratio of assets to expenditures[1] (percent) |
|---|---|---|---|---|---|
| 2001[2] | $174.6 | $143.4 | $31.3 | $208.7 | 124 |
| 2002 | 180.9 | 149.3 | 31.6 | 240.3 | 140 |
| 2003 | 192.0 | 152.6 | 39.4 | 279.7 | 157 |
| 2004 | 204.0 | 160.4 | 43.6 | 323.3 | 174 |
| 2005 | 216.9 | 169.8 | 47.2 | 370.5 | 190 |
| 2006 | 229.5 | 179.8 | 49.7 | 420.2 | 206 |
| 2007 | 244.8 | 190.5 | 54.3 | 474.5 | 221 |
| 2008 | 259.7 | 202.7 | 57.0 | 531.5 | 234 |
| 2009 | 275.2 | 215.7 | 59.5 | 591.0 | 246 |
| 2010 | 291.5 | 229.7 | 61.7 | 652.8 | 257 |
| 2011 | 309.7 | 245.1 | 64.6 | 717.3 | 266 |

[1]Ratio of assets in the fund at the beginning of the year to expenditures during the year.
[2]Figures for 2001 represent actual experience.

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

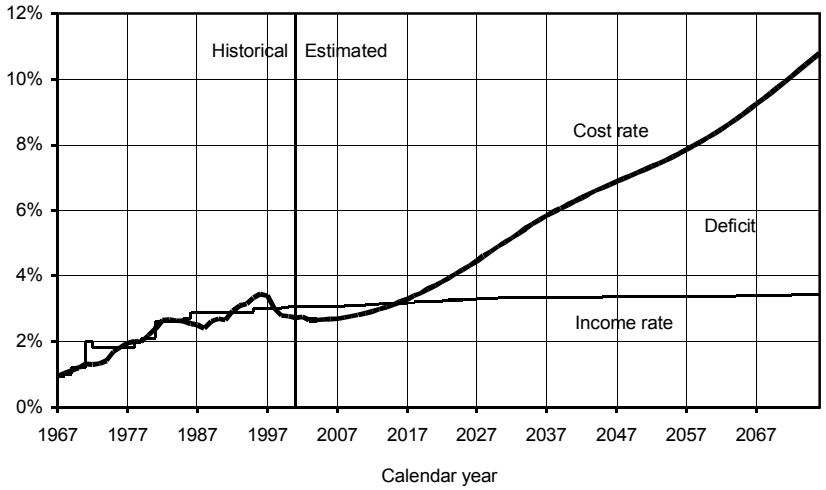
The income and expenditure estimates shown in table I.E1 are slightly lower than those shown in the 2001 annual report. This is primarily due to somewhat lower inflation assumptions.

### *b. 75-Year Actuarial Estimates (2002-2076)*

Each year, estimates of the financial and actuarial status of the HI trust fund are prepared for the next 75 years. Although financial outcomes over periods as long as 75 years are inherently uncertain, the results can provide valuable information for policy makers. In particular, such estimates can indicate whether the trust fund—as seen from today's vantage point—is considered to be in satisfactory financial condition.

Because of the difficulty in comparing dollar values for different periods without some type of relative scale, income and expenditure amounts are shown relative to the earnings in covered employment that are taxable under HI (referred to as "taxable payroll"). The ratio of tax income (including both payroll taxes and income from taxation of Social Security benefits, but excluding interest income) to taxable payroll is called the "income rate," and the ratio of expenditures to taxable payroll is the "cost rate."

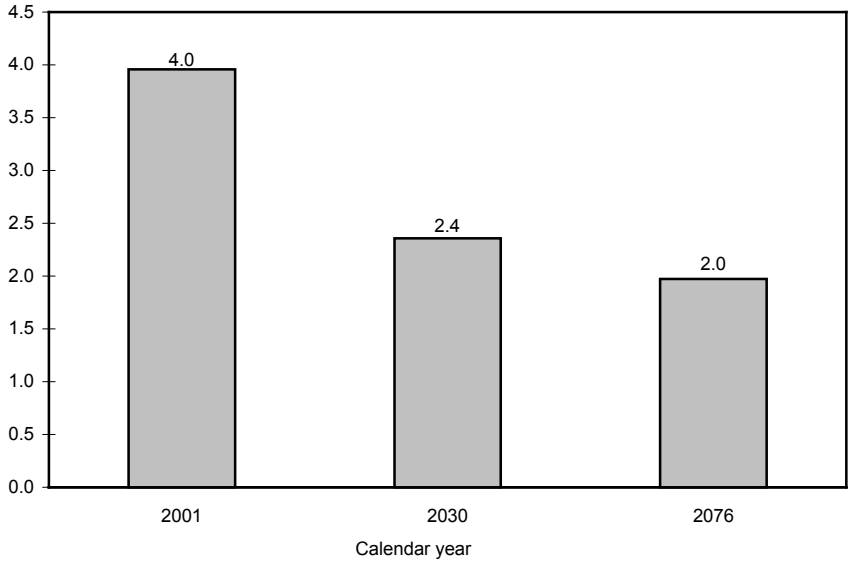
**Figure I.E4.—Long-Range HI Income and Cost as a Percentage of Taxable Payroll, Intermediate Assumptions**




As indicated in figure I.E4, HI cost rates are projected to exceed tax income by a rapidly growing margin after 2015. Income rates are projected to remain fairly steady, while cost rates sharply escalate between 2010 and 2030 and continue to increase throughout the period. By 2076, projected expenditures would be fully three times the level of scheduled tax revenues—a very substantial deficit by any standard.

Since HI payroll tax rates are not scheduled to change in the future under present law, payroll tax income as a percentage of taxable payroll will remain constant at 2.90 percent. Income from taxation of benefits will increase only gradually as a greater proportion of Social Security beneficiaries become subject to such taxation over time. Thus, the income rate is not expected to increase significantly over current levels.

**Figure I.E5.—Workers per HI Beneficiary**
[Based on intermediate assumptions]

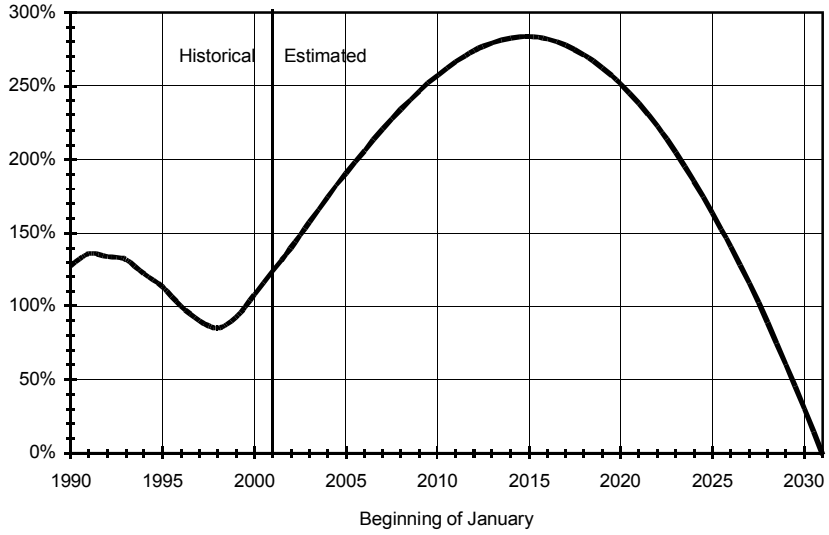



The cost rates, though, will sharply escalate—in part due to health care cost increases that exceed wage growth, but also due to the attainment of eligibility of those born during the 1946-1965 baby boom. For the most part, current benefits are paid for by current workers. The baby boom generation will therefore be financed by the relatively small number of persons born after the baby boom. For example, in 2001 there were 40 million beneficiaries with 157 million workers to support them. In 2030, as the last baby boomer turns 65, there would be an estimated 77 million beneficiaries with 182 million workers to support them. This means that every beneficiary in 2001 had 4.0 workers to pay for his or her HI benefit, but in 2030 there would be only about 2.4 workers. The ratio would then continue to decline until there are only 2.0 workers per beneficiary by 2076, reflecting an assumed continuation of fertility rates at roughly the same level as the last 2 decades and further improvements in life expectancy.

Under the intermediate assumptions, the assets of the HI trust fund would increase from about 140 percent of annual expenditures at the beginning of 2002 to 283 percent at the beginning of 2015. Thereafter, assets would decline relative to annual expenditures and, without corrective legislation, would be exhausted in 2030, as illustrated in figure I.E6. To the extent that actual future conditions vary from the

intermediate assumptions, the date of exhaustion could differ substantially in either direction from this estimate. Under the low cost assumptions, trust fund assets would increase throughout the long-range projection period. Under the high cost assumptions, however, asset depletion would occur in the relatively near future, in 2018. The wide variation in asset growth under the three alternative sets of assumptions illustrates the extreme sensitivity of the HI trust fund to even moderate variations in expenditure growth rates. This sensitivity necessitates continued careful monitoring of actual trust fund performance as it develops, even though the expected outlook currently appears very favorable in the short range.

**Figure I.E6.—HI Trust Fund Balance at Beginning of Year as a Percentage of Annual Expenditures**




The year-by-year cost rates and income rates shown in figure I.E4 can be summarized into single values representing, in effect, the average value over a given period. (Sections II.B and IV.E describe how these summarized values are calculated.) The difference between the summarized income and cost rates is called the "actuarial balance." Based on the intermediate assumptions, an actuarial balance deficit of 2.02 percent of taxable payroll is projected for the 75-year period, representing the difference between the summarized income rate of 3.34 percent and the corresponding cost rate of 5.36 percent. The actuarial balance varies from a slight surplus of 0.2 percent of taxable payroll under the low cost assumptions to a deficit of 6.5 percent under the high cost assumptions. The actuarial balance has

traditionally served as a convenient single measurement to summarize the financial status of the HI trust fund. It can be interpreted as the percentage-point change in the tax rate that would be required to bring the trust fund into balance if no other changes were made. (See section II for details and limitations of summary measures.)

To correct the remaining financial imbalance under the intermediate assumptions, the 2.90-percent payroll tax (for employees and employers combined) would have to be immediately increased to 4.92 percent, or expenditures would have to be reduced by a corresponding amount (or some combination of such changes).[2] More realistically, the tax and/or benefit changes could be made gradually, rather than immediately, but would ultimately have to reach much more substantial levels to eliminate the deficit throughout the long-range period.

The HI trust fund thus continues to fail the Trustees' test for long-range solvency (discussed in section II), which is based on the actuarial balance. The magnitude of this failure is considerable. The test is met under the low cost assumptions but would fail by a very wide margin under the high cost assumptions. The fact that the trust fund is projected to be in or near deficit under a broad range of economic and demographic assumptions reinforces the importance of addressing the remaining long-range imbalance through further legislation.

[2]Under such a scenario, tax income would initially be substantially greater than expenditures, and trust fund assets would accumulate rapidly. Subsequently, however, financing would be increasingly inadequate, and assets would be drawn down to cover the difference. At the end of the 75-year period, tax income would cover only about 50-60 percent of annual expenditures.

## *F. SMI TRUST FUND FINANCIAL STATUS*

### 1. 2001 Trust Fund Financial Operations

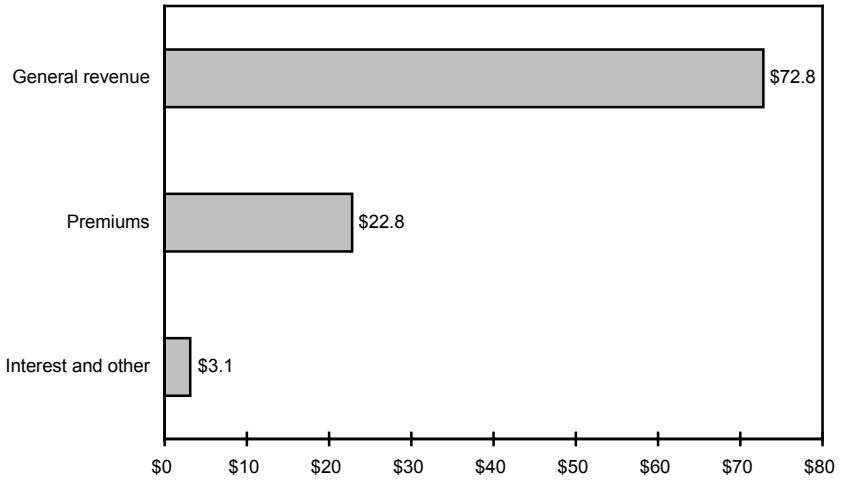
SMI income in calendar year 2001 was $98.6 billion, and total expenditures were $101.4 billion. The fund balance therefore decreased by a net total of $2.8 billion. As of December 31, 2001, the SMI trust fund had a balance of $41.3 billion.

#### *a. Income*

The $98.6 billion in income received by the SMI trust fund last year was derived from the following sources:

- General revenue. Transfers from the general fund of the treasury were the largest source of income, accounting for $72.8 billion—or about 74 percent of total SMI income—in calendar year 2001. The general revenue contribution is determined by means of a statutory formula based on expected cost per beneficiary less expected premium collections. The statutory formula also allows for the maintenance of a small reserve to cover any unforeseen contingencies.
- Premiums. Premium collections amounted to $22.8 billion, or about 23 percent of calendar year 2001 income. Premium rates are set annually, based on a method specified in the law. In calendar year 2001, the SMI premium was $50.00 per month.
- Interest. Interest income on the U.S. Treasury securities held by the trust fund, plus a very small amount of other income, amounted to $3.1 billion, or about 3 percent of total SMI income in calendar year 2001.

**Figure I.F1.—SMI Income in Calendar Year 2001**
[In billions]

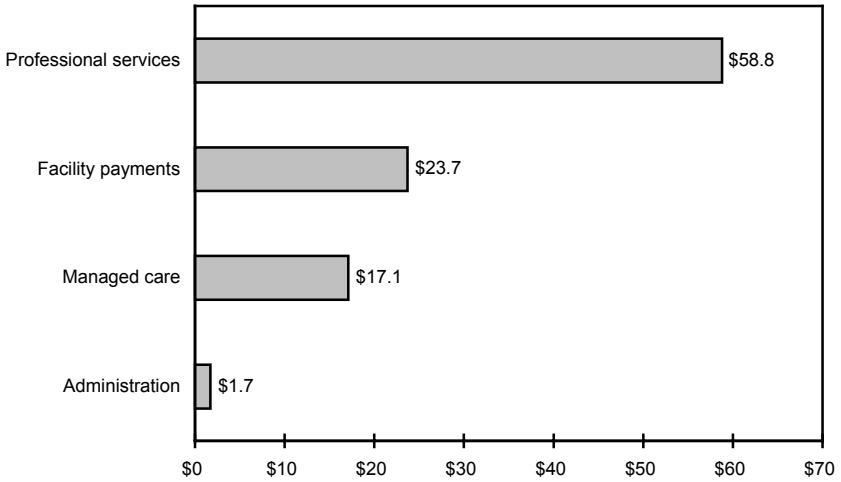



### *b. Expenditures*

The SMI fund spent $101.4 billion last year. The major expenditures consisted of the following:

- Benefit payments. Approximately 98 percent of SMI outlays in calendar year 2001 were for benefit payments to providers of services and managed care plans. Managed care payments were about 17 percent of all benefit payments. Within the fee-for-service sector, 59 percent of total benefits was paid last year for physician and other professional services—the largest type of benefit payment. Finally, payments to such establishments as outpatient hospital facilities and home health agencies made up about 24 percent of total SMI benefit outlays in 2001.
- Administrative expenses. Approximately $1.7 billion, or 1.7 percent of SMI outlays during calendar year 2001, paid the administrative expenses of the trust fund. This amount included funds to support the Medicare carriers and intermediaries (generally insurance companies) that assist in administering SMI, as well as funds for federal salaries and related expenses.

**Figure I.F2.—SMI Expenditures in Calendar Year 2001**
[In billions]




## 2. Actuarial Estimates

SMI differs fundamentally from OASDI and HI in regard to the nature of financing and the method by which financial status is evaluated. In particular, the SMI premium and the corresponding income from general revenues are established annually at a level sufficient to cover the following year's expenditures. Thus, SMI is automatically in financial balance under present law. In OASDI and HI, however, financing established many years earlier may prove significantly higher or lower than subsequent actual costs. Moreover, SMI is voluntary (whereas OASDI and HI are generally compulsory), and income is not based on payroll taxes. These disparities result in a financial assessment that differs in some respects from that for OASDI or HI, as described in the following sections.

### *a. 10-Year Actuarial Estimates (2002-2011)*

Table I.F1 shows the estimated operations of the SMI trust fund under the intermediate assumptions during calendar years 2001 through 2011. As indicated, both income and expenditures are estimated to grow at about 7 percent per year for most of the 10-year period, with the exception of 3- to 5- percent increases for 2003 and 2004. Income and outgo would remain in balance as a result of the annual adjustment of premium and general revenue income to match costs. Assets held in the trust fund are projected to decrease slightly in 2002, as part of an effort to adjust asset levels to better match the trust fund's contingency needs. After 2002, assets held in the fund are

projected to increase sufficiently to maintain an adequate contingency reserve for the trust fund. Similar projections under the low cost and high cost assumptions are shown in section II of this report. Under all assumptions, SMI would grow rapidly but would remain adequately financed into the indefinite future because of the automatic financing on a year-to-year basis. Continuing rapid growth, however, has significant implications both for beneficiaries and for the federal budget, as discussed more fully in subsequent sections.

**Table I.F1.—Estimated Operations of the SMI Trust Fund under Intermediate Assumptions, Calendar Years 2001-2011**

[Dollar amounts in billions]

| Calendar year | Total income | Total expenditures | Change in fund | Fund at year end |
|---|---|---|---|---|
| 2001[1] | $98.6 | $101.4 | -$2.8 | $41.3 |
| 2002 | 104.2 | 108.1 | -3.9 | 37.3 |
| 2003 | 112.6 | 111.6 | 1.0 | 38.3 |
| 2004 | 117.4 | 116.9 | 0.5 | 38.8 |
| 2005 | 125.4 | 124.2 | 1.2 | 40.0 |
| 2006 | 134.4 | 133.1 | 1.3 | 41.3 |
| 2007 | 144.3 | 142.9 | 1.4 | 42.7 |
| 2008 | 155.8 | 154.4 | 1.4 | 44.1 |
| 2009 | 168.0 | 166.5 | 1.5 | 45.5 |
| 2010 | 182.1 | 178.9 | 3.3 | 48.8 |
| 2011 | 195.9 | 192.0 | 3.9 | 52.7 |

[1]Figures for 2001 represent actual experience.

The estimated costs shown in this annual report are significantly lower over the next 10 years than those in the 2001 annual report. The lower estimates are partly a result of (1) outpatient hospital payments and SMI home health payments for 2001 that were lower than the estimates in the 2001 annual report, and (2) much lower projected physician payments through the "sustainable growth rate" provision of the law (as described more fully in section II.C). Overall, costs shown in this report are still expected to increase faster than the economy as a whole. Thus, even though SMI is considered adequately financed by traditional standards, the continuing trend of relatively rapid cost increases remains a source of great concern.

The primary test of financial adequacy for SMI pertains to the level of the financing that has been formally established for a given period (normally, through the end of the current calendar year). SMI financing is considered satisfactory if it is sufficient to fund all services provided through that period, as well as associated administrative expenses. Further, to protect against the possibility that cost increases under SMI will be higher than assumed, the trust fund needs assets adequate to cover a reasonable degree of variation between actual and projected costs.

According to these tests, the financing established through December 2002, together with a small amount of trust fund assets, is estimated to be sufficient to cover benefits and administrative costs incurred through that time period. The tests of financial adequacy are met under intermediate assumptions as well as under lower-range and upper-range projections. Planned SMI financing is sufficient to maintain a level of trust fund assets that is able to cover a reasonable degree of variation between actual costs and projected costs.

During 1996-1998, SMI expenditures increased somewhat more slowly than expected when financing was established for each of these years. As a result, income from premiums and general revenues exceeded costs, and trust fund assets grew to a level above that which is generally considered adequate for a contingency reserve for the SMI trust fund. Therefore, following the practice used in 1997-2001, the financing for 2002 was set below the level estimated to fully cover costs, with the expectation that a small portion of trust fund assets would be used in 2002 to make up the difference. This procedure is intended to gradually bring trust fund assets in line with the lower level that is adequate for contingency purposes. As a result, the 2002 premium of $54.00 reflects the 2002 expected benefit and administrative costs offset by a small portion of trust fund assets.

The amount of the contingency reserve needed in SMI is much smaller (both in absolute dollars and as a fraction of annual costs) than in HI or OASDI. This is so because the SMI premium rate and corresponding general revenue transfers are determined annually based on estimated future costs, while the HI and OASDI payroll tax rates are set in law and are therefore much more difficult to adjust should circumstances change.

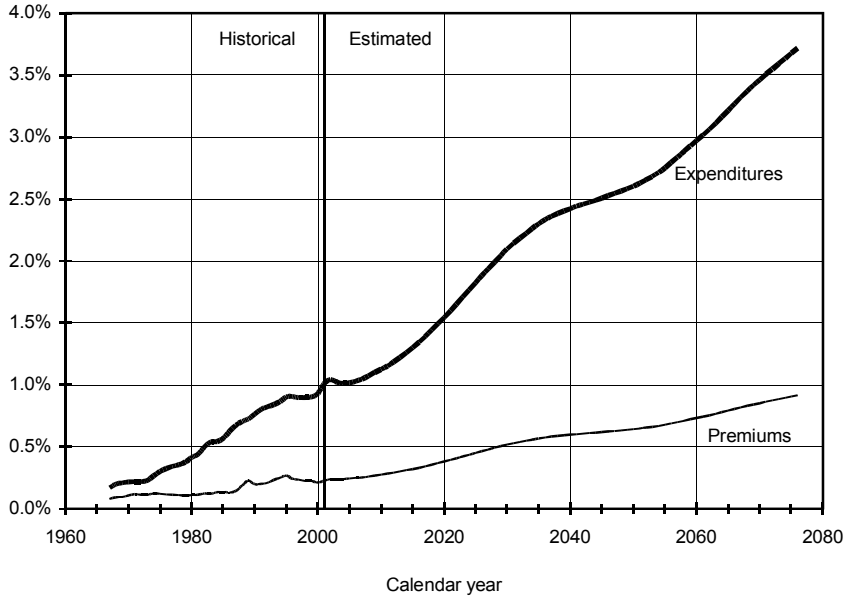
***b. 75-Year Actuarial Estimates (2002-2076)***

Figure I.F3 shows past SMI expenditures and premium income as a percentage of the Gross Domestic Product (GDP) and projections through 2076 based on intermediate assumptions. Under these assumptions, annual SMI expenditures would grow from about 1 percent of GDP in 2001 to about 2.1 percent of GDP within 30 years.

Projecting forward 75 years is difficult, given the many uncertainties about future performance of the economy and other variables, but it allows for the presentation of future trends that may reasonably be expected to occur. Most importantly, this forecast reflects

(1) continuing growth in the volume and intensity of services provided per beneficiary throughout the projection period, and (2) the impact of a large increase in SMI beneficiaries starting in about 2010 as the 1946-65 baby boom generation turns age 65 and begins to receive benefits. Other key demographic trends are also reflected, including continuing improvements in life expectancy and future birth rates at roughly the same level as the last 2 decades.

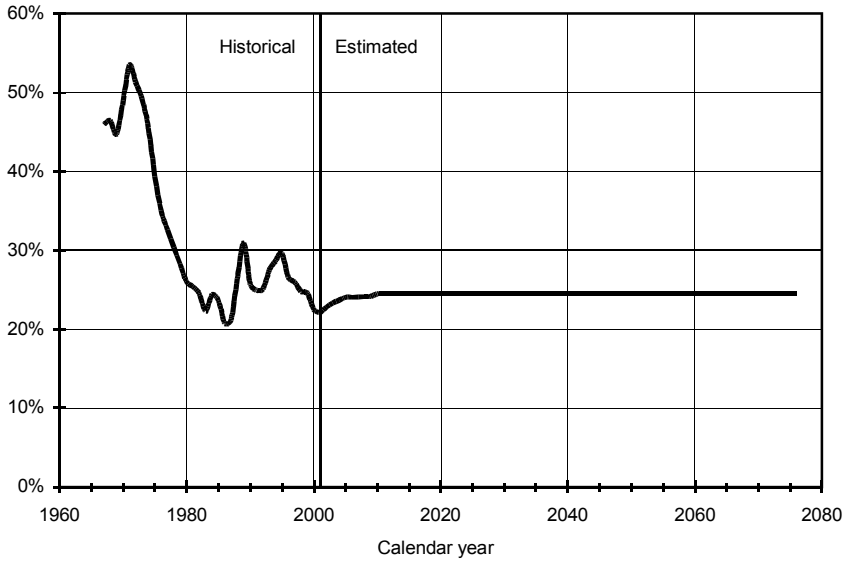
**Figure I.F3.—SMI Expenditures and Premiums as a Percentage of the Gross Domestic Product**




The Balanced Budget Act of 1997 (BBA) made numerous changes to the Medicare program, many of them quite substantial. One of the most important provides for the monthly SMI premium to be permanently established at the level of about 25 percent of expenditures, as shown in figure I.F4. Prior to this legislation, premiums would have represented a steadily declining share of costs. Other provisions in the BBA include a new prospective payment system for outpatient hospital services under Medicare and coverage of several new preventive or "screening" benefits. In addition, annual payment updates for certain SMI health care providers are constrained, and a problem with beneficiary coinsurance for outpatient hospital services is gradually being corrected. Finally, more than half of home health care services are reclassified as an SMI benefit, shifting the cost of such services over a 6-year period from the HI trust fund to the SMI trust fund. Collectively, the SMI benefit provisions in the BBA result in a net increase in costs. SMI

costs were further increased by the provisions of the Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999 and the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000.

**Figure I.F4.—Premium Income as a Percentage of SMI Expenditures**




The projected SMI cost under present law would place steadily increasing demands on beneficiaries and society at large. Over time, the SMI premiums and coinsurance amounts paid by beneficiaries would represent a growing share of their total income. In 2001, for example, about 6 percent of a typical 65-year-old's Social Security benefit was withheld to pay the monthly SMI premium of $50.00. Twenty years later, under the intermediate assumptions, the same beneficiary's premium would require about 11 percent of his or her benefit. Similarly, SMI general revenues in fiscal year 2001 were equivalent to about 6 percent of the personal and corporate federal income taxes collected in that year. If such taxes were to remain at their current level, relative to the national economy, then SMI general revenue financing in 2076 would represent roughly 24 percent of total income taxes. Further details regarding these illustrations are presented in section II.C.

## *G. CONCLUSION*

The primary purpose of the annual report of the Board of Trustees is to assess the financial status of the HI and SMI trust funds. Because the two parts of Medicare are financed in very different ways, this assessment must be performed individually for each trust fund. Nonetheless, it is important to consider the overall cost of Medicare benefits, together with the sources and relative magnitudes of the different forms of revenues that finance these benefits. Total Medicare expenditures were $244.8 billion in 2001 and are expected to increase in future years at a faster pace than either workers' earnings or the economy overall. As a percentage of GDP, expenditures are projected to more than triple over the long-range projection period, from 2.4 percent currently to 8.6 percent in 2076 (based on our intermediate set of assumptions and assuming no changes to present law). Growth of this magnitude, if realized, would place a substantially greater strain on the nation's workers, Medicare beneficiaries, and the federal budget.

Overall, the HI financial projections in this year's report are very similar to those shown last year. The projected depletion of the HI trust fund is postponed from 2029 until 2030 as a result of slightly more favorable long-range economic growth rate assumptions and higher estimated revenues from the taxation of Social Security benefits.[3] For the third consecutive year, the HI trust fund meets our short-range test of financial adequacy. This is a small but welcome improvement in the nearer-term financial outlook for the HI trust fund.

The long-range financial projections shown for HI, however, continue to show a very substantial financial imbalance, with future HI income falling short of projected expenditures by a wide margin. The long-range HI actuarial deficit in this year's report is 2.02 percent of taxable payroll, based on our intermediate set of assumptions.

Accordingly, the HI trust fund fails to meet our long-range test of close actuarial balance. Based on our intermediate assumptions, income from all sources is projected to continue to exceed expenditures for the next 20 years, but to fall short by steadily increasing amounts in 2022 and later. Costs are expected to exceed tax revenues after 2015, indicating that HI would increasingly draw on interest payments on invested assets and subsequently the

[3]See the annual report of the OASDI Board of Trustees for a description of the estimate revisions for revenues from the income taxation of Social Security benefits.

redemption of those assets. While the projected tax shortfalls can be temporarily met in this way, future income and assets would be sufficient to support projected expenditures only until 2030 under the intermediate assumptions. Thus, without additional legislation, the fund would be exhausted in the future—initially producing payment delays, but very quickly leading to a curtailment of health care services to beneficiaries.

To bring the HI trust fund into actuarial balance over the next 75 years under the intermediate assumptions, either outlays would have to be reduced by 38 percent or income increased by 60 percent (or some combination of the two) throughout the 75-year period. While such changes would eliminate the overall deficit, they would not balance income and expenditures year by year. Such a change would close only about one-fourth of the projected imbalance in 2076.

The financial outlook for SMI is very different than for HI, although rapid expenditure growth is a serious issue for both parts of Medicare. The financing established for the SMI trust fund for calendar year 2002 is estimated to be sufficient to cover expenditures for that year and to preserve an adequate contingency reserve in the SMI trust fund. Moreover, trust fund income is projected to equal expenditures for all future years—but only because beneficiary premiums and government general revenue contributions are set to meet expected costs each year.

As in past reports, we note with great concern that SMI costs have generally grown significantly faster than GDP and that this trend is expected to continue under present law. Initially, the projected increases are attributable in part to assumed continuing growth in the volume and intensity of services provided per beneficiary. Demographic factors, including the post-World War II baby boom generation attaining eligibility age starting in 2010, will also have a major influence on the growth in SMI costs. Consequently, we continue to be very concerned by the rate of growth in SMI expenditures.

The automatic financing provisions for SMI prevent periodic financial crises. As a result, there has been substantially less attention directed toward the financial status of SMI than to HI—even though SMI expenditures have increased faster than HI expenditures in most years and are expected to continue to do so for a number of years in the future.

*Overview*

Given the past and projected cost of SMI, we urge the nation's policy makers to consider effective means of controlling SMI costs in the near term. For the longer term, the Administration and the Congress should work together to develop legislative proposals to address the large increases in SMI costs associated with the baby boom attaining eligibility age at the same time that they address the HI cost increases caused by the aging of that generation.

The projections shown in this report continue to demonstrate the need for timely and effective action to address the financial challenges facing Medicare—both the remaining financial imbalance facing the HI trust fund and the continuing problem of rapid growth in SMI expenditures. We believe that solutions can and must be found to ensure the financial integrity of HI in the long term and to provide effective means of controlling SMI costs. Consideration of further reforms should occur in the relatively near future. The unexpectedly favorable conditions resulting in the anticipated HI trust fund surpluses over the next 2 decades could change, and deficits could recur sooner than projected. In addition, the sooner the solutions are enacted, the more flexible and gradual they can be. Finally, the early introduction of further reforms increases the time available for affected individuals and organizations—including health care providers, beneficiaries, and taxpayers—to adjust their expectations.

We are encouraged by the widespread interest in Congress and the Administration in improving Medicare's financial status. We believe that effective and decisive action is necessary to build upon the strong steps taken in recent reforms.

## II. ACTUARIAL ANALYSIS

### *A. Medicare Financial Projections*

Medicare is the nation's second largest social insurance program, exceeded only by Social Security (OASDI). Although Medicare's two component parts—Hospital Insurance and Supplementary Medical Insurance—are very different from each other in many key respects, it is important to consider the overall cost of Medicare and the manner in which that cost is financed. By reviewing Medicare's total expenditures, the financial obligation posed by the program can be assessed. Similarly, the sources and relative magnitudes of HI and SMI revenues are an important policy matter.

The issues of Medicare's total cost to society and how that cost is met are different from the question of the financial status of the Medicare trust funds. The latter focuses on whether a specific trust fund's income and expenditures are in balance. As discussed later in this section, such an analysis must be performed for each trust fund individually. The separate HI and SMI financial projections prepared for this purpose, however, can be usefully combined for the broader purposes outlined above. To that end, this section presents information on combined HI and SMI costs and revenues. Sections II.B and II.C of this report present detailed assessments of the financial status of the HI trust fund and the SMI trust fund, respectively.

Table II.A1 shows past and projected Medicare income, expenditures, and trust fund assets in dollar amounts for fiscal years.[4] Projections are shown under the intermediate set of assumptions for the short-range projection period 2002 through 2011. Corresponding information for calendar years is shown in table II.A2. (A more detailed breakdown of expenditures and income for HI and SMI separately is provided in tables II.B5 and II.C5.)

[4]Amounts are shown on a "cash" basis, reflecting actual expenditures made during the year, even if the payments were for services performed in an earlier year. Similarly, income amounts represent amounts actually received during the year, even if incurred in an earlier year.

**Table II.A1.—Total Medicare Income, Expenditures, and Trust Fund Assets during Fiscal Years 1970-2011**

[In millions]

| Fiscal year | Total income | Total expenditures[1] | Net change in assets | Assets at end of year |
|---|---|---|---|---|
| Historical data: | | | | |
| 1970 | $7,490 | $7,149 | $341 | $2,734 |
| 1975 | 16,890 | 14,782 | 2,108 | 11,294 |
| 1980 | 35,690 | 35,025 | 665 | 19,022 |
| 1985 | 75,510 | 71,384 | 4,126 | 31,923 |
| 1990 | 125,701 | 109,709 | 15,991 | 110,158 |
| 1995 | 173,016 | 180,096 | -7,080 | 143,394 |
| 1996 | 203,160 | 194,263 | 8,897 | 152,291 |
| 1997 | 209,354 | 210,389 | -1,035 | 151,256 |
| 1998 | 220,158 | 213,412 | 6,746 | 158,002 |
| 1999 | 238,293 | 211,959 | 26,334 | 184,336 |
| 2000 | 248,920 | 219,276 | 29,644 | 213,980 |
| 2001 | 266,350 | 241,175 | 25,174 | 239,154 |
| Intermediate estimates: | | | | |
| 2002 | 285,265 | 252,376 | 32,889 | 272,043 |
| 2003 | 298,878 | 262,214 | 36,664 | 308,707 |
| 2004 | 316,102 | 273,852 | 42,250 | 350,957 |
| 2005 | 337,451 | 292,669 | 44,782 | 395,739 |
| 2006 | 358,269 | 304,883 | 53,387 | 449,125 |
| 2007 | 382,386 | 327,899 | 54,486 | 503,612 |
| 2008 | 407,971 | 350,692 | 57,279 | 560,891 |
| 2009 | 435,050 | 375,546 | 59,504 | 620,395 |
| 2010 | 465,858 | 401,545 | 64,313 | 684,708 |
| 2011 | 498,223 | 433,986 | 64,237 | 748,945 |

[1]Expenditures are the sum of benefit payments and administrative expenses.

**Table II.A2.—Total Medicare Income, Expenditures, and Trust Fund Assets during Calendar Years 1970-2011**

[In millions]

| Calendar year | Total income | Total expenditures[1] | Net change in assets | Assets at end of year |
|---|---|---|---|---|
| Historical data: | | | | |
| 1970 | $8,180 | $7,493 | $687 | $3,390 |
| 1975 | 17,653 | 16,316 | 1,337 | 11,961 |
| 1980 | 36,971 | 36,822 | 149 | 18,279 |
| 1985 | 76,503 | 72,294 | 4,209 | 31,423 |
| 1990 | 126,285 | 110,984 | 15,301 | 114,415 |
| 1995 | 175,333 | 184,203 | -8,870 | 143,397 |
| 1996 | 210,212 | 200,337 | 9,875 | 153,274 |
| 1997 | 212,078 | 213,576 | -1,498 | 151,774 |
| 1998 | 228,258 | 213,401 | 14,857 | 166,631 |
| 1999 | 232,499 | 212,959 | 19,540 | 186,172 |
| 2000 | 257,088 | 221,758 | 35,329 | 221,502 |
| 2001 | 273,258 | 244,766 | 28,493 | 249,995 |
| Intermediate estimates: | | | | |
| 2002 | 285,117 | 257,473 | 27,644 | 277,639 |
| 2003 | 304,628 | 264,250 | 40,378 | 318,017 |
| 2004 | 321,450 | 277,364 | 44,085 | 362,103 |
| 2005 | 342,335 | 293,971 | 48,364 | 410,467 |
| 2006 | 363,957 | 312,918 | 51,039 | 461,506 |
| 2007 | 389,054 | 333,373 | 55,681 | 517,187 |
| 2008 | 415,420 | 357,035 | 58,385 | 575,572 |
| 2009 | 443,205 | 382,225 | 60,980 | 636,552 |
| 2010 | 473,594 | 408,583 | 65,010 | 701,563 |
| 2011 | 505,587 | 437,100 | 68,487 | 770,050 |

[1]Expenditures are the sum of benefit payments and administrative expenses.

Past amounts of Medicare expenditures and revenues have grown rapidly. Total income to the HI and SMI trust funds has generally been relatively close to total expenditures. Each fund's excess of income over expenditures has been invested in U.S. Treasury securities, with total fund assets accumulating to $250.0 billion at the end of calendar year 2001. Combined expenditures in 2001 were $244.8 billion.

Medicare expenditures are projected to increase at an average annual rate of 6.0 percent during 2002-2011. Total income is expected to grow at roughly the same rate during this period because (1) SMI income automatically grows at the same rate as SMI expenditures,[5] and (2) HI interest income is growing very rapidly as HI assets accumulate. More typically, HI payroll tax revenues will increase at approximately the same rate as the total wages, salaries, and self-employment income of the nation's workers, on which the tax is assessed. Health care costs, in contrast, will increase not only as a function of wage growth, but also as a result of increases in the utilization of health services and their intensity or average complexity. Historically, per capita health care expenditures have increased significantly more rapidly than either wages or the economy overall, and this differential has been evident not only for Medicare but also for other government health programs (such as Medicaid) and private health insurance. The comparison of Medicare income and expenditure trends has also been affected by growth differentials between the number of workers and the number of Medicare beneficiaries. With past declines in birth rates, continuing improvements in life expectancy, and prevailing rates of disability incidence, the number of beneficiaries has generally grown faster than the labor force.

The other primary sources of Medicare financing—SMI premiums and general revenues—will grow at the same rate as SMI expenditures under present law.

Expressing Medicare expenditures as a percentage of GDP gives a relative measure of the size of the Medicare program compared to the general economy. The projection of this measure affords the public an idea of the relative financial resources that will be necessary to pay for Medicare services.

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[5]Under current law, SMI premium and general revenue rates are set each year to match the following year's estimated expenditures.

Table II.A3 shows past and estimated future Medicare expenditures under the intermediate assumptions expressed as a percentage of GDP.[6] Medicare expenditures represented 0.7 percent of GDP in 1970[7] and had grown to 2.4 percent of GDP in 2001, reflecting rapid increases in the factors affecting health care cost growth, as mentioned previously.

**Table II.A3.—HI and SMI Incurred Expenditures as a Percentage of the Gross Domestic Product[1]**

| Calendar year | HI | SMI | Total |
|---|---|---|---|
| Historical data: | | | |
| 1970 | 0.52 | 0.22 | 0.74 |
| 1975 | 0.73 | 0.30 | 1.03 |
| 1980 | 0.90 | 0.41 | 1.32 |
| 1985 | 1.12 | 0.56 | 1.69 |
| 1990 | 1.14 | 0.76 | 1.90 |
| 1995 | 1.55 | 0.90 | 2.45 |
| 1996 | 1.63 | 0.90 | 2.53 |
| 1997 | 1.62 | 0.89 | 2.52 |
| 1998 | 1.48 | 0.89 | 2.37 |
| 1999 | 1.38 | 0.90 | 2.28 |
| 2000 | 1.33 | 0.93 | 2.26 |
| 2001 | 1.39 | 1.01 | 2.40 |
| Intermediate estimates: | | | |
| 2002 | 1.42 | 1.04 | 2.45 |
| 2003 | 1.37 | 1.02 | 2.39 |
| 2004 | 1.36 | 1.01 | 2.37 |
| 2005 | 1.36 | 1.01 | 2.38 |
| 2006 | 1.36 | 1.03 | 2.39 |
| 2007 | 1.37 | 1.04 | 2.41 |
| 2008 | 1.38 | 1.07 | 2.45 |
| 2009 | 1.40 | 1.10 | 2.49 |
| 2010 | 1.42 | 1.12 | 2.54 |
| 2011 | 1.44 | 1.15 | 2.59 |
| 2015 | 1.57 | 1.30 | 2.86 |
| 2020 | 1.79 | 1.54 | 3.33 |
| 2025 | 2.06 | 1.83 | 3.89 |
| 2030 | 2.38 | 2.10 | 4.48 |
| 2035 | 2.70 | 2.30 | 5.00 |
| 2040 | 2.96 | 2.42 | 5.38 |
| 2045 | 3.18 | 2.51 | 5.69 |
| 2050 | 3.36 | 2.60 | 5.97 |
| 2055 | 3.55 | 2.75 | 6.31 |
| 2060 | 3.79 | 2.97 | 6.76 |
| 2065 | 4.08 | 3.22 | 7.29 |
| 2070 | 4.41 | 3.46 | 7.87 |
| 2075 | 4.76 | 3.67 | 8.43 |

[1]Expenditures are the sum of benefit payments and administrative expenses.

[6]In contrast to the expenditure amounts shown in tables II.A1 and II.A2, long-range expenditure projections are shown on an incurred basis. Incurred amounts relate to the expenditures for services *performed* in a given year, even if those expenditures are paid in a later year.

[7]Medicare was enacted on July 30, 1965 and began financial operations in July 1966.

As with the other projections in this report, the estimates shown in table II.A3 assume no change in current law. The 75-year projection period fully allows for the presentation of future developments that may reasonably be expected to occur, such as the impact of a large increase in enrollees that will take place after the next 10 years. This increase in the number of beneficiaries will occur because the relatively large number of persons born during the period between the end of World War II and the mid-1960s (known as the baby boom) will reach eligibility age and begin to receive benefits. Moreover, as the average age of Medicare beneficiaries increases, these individuals will experience greater health care utilization and costs, thereby adding further to growth in program expenditures. Table II.A4 shows past and projected enrollment in the Medicare program.

**Table II.A4.—Medicare Enrollment**

[In thousands]

| Calendar year | HI | SMI | Total[1] |
|---|---|---|---|
| Historical data: | | | |
| 1970 | 20,104 | 19,496 | 20,398 |
| 1975 | 24,481 | 23,744 | 24,864 |
| 1980 | 28,002 | 27,278 | 28,433 |
| 1985 | 30,621 | 29,869 | 31,081 |
| 1990 | 33,747 | 32,568 | 34,252 |
| 1995 | 37,175 | 35,641 | 37,594 |
| 1996 | 37,701 | 36,104 | 38,122 |
| 1997 | 38,099 | 36,445 | 38,514 |
| 1998 | 38,472 | 36,756 | 38,889 |
| 1999 | 38,766 | 37,022 | 39,188 |
| 2000 | 39,162 | 37,315 | 39,579 |
| 2001 | 39,651 | 37,657 | 40,060 |
| Intermediate estimates: | | | |
| 2002 | 39,996 | 38,029 | 40,339 |
| 2003 | 40,421 | 38,365 | 40,816 |
| 2004 | 40,927 | 38,766 | 41,314 |
| 2005 | 41,456 | 39,194 | 41,834 |
| 2006 | 42,065 | 39,683 | 42,434 |
| 2007 | 42,826 | 40,300 | 43,186 |
| 2008 | 43,737 | 41,070 | 44,088 |
| 2009 | 44,663 | 41,869 | 45,003 |
| 2010 | 45,548 | 42,620 | 45,878 |
| 2011 | 46,624 | 43,492 | 46,944 |
| 2015 | 52,542 | 48,713 | 52,830 |
| 2020 | 61,093 | 56,336 | 61,359 |
| 2025 | 70,091 | 64,526 | 70,355 |
| 2030 | 77,368 | 71,264 | 77,639 |
| 2035 | 81,575 | 75,207 | 81,850 |
| 2040 | 83,622 | 77,226 | 83,896 |
| 2045 | 85,268 | 78,640 | 85,537 |
| 2050 | 88,007 | 80,692 | 87,784 |
| 2055 | 90,415 | 83,276 | 90,671 |
| 2060 | 93,812 | 86,448 | 94,058 |
| 2065 | 96,968 | 89,340 | 97,199 |
| 2070 | 100,425 | 92,551 | 100,633 |
| 2075 | 103,619 | 95,489 | 103,799 |

[1]Number of beneficiaries with HI and/or SMI coverage.

For both HI and SMI, costs beyond the first 25-year projection period are based on the assumption that per beneficiary expenditures will increase at the same rate as per capita GDP plus 1 percentage point. Based on these assumptions, Medicare expenditures as a percentage of GDP are projected to increase rapidly, from 2.4 percent in 2001 to 5.0 percent in 2035 and then to 8.4 percent in 2075. After 2035, both HI and SMI expenditures as a percentage of GDP are expected to increase steadily, with HI outpacing SMI slightly as the population ages, since HI benefits are more age-sensitive than are those for SMI.

The past and projected amounts of Medicare revenues as a percentage of GDP are shown in table II.A5, based on the intermediate assumptions. Interest income is excluded, since, under present law, it would not be a significant part of program financing in the long range.

**Table II.A5.—Medicare Sources of Income and Expenditures as a Percentage of the Gross Domestic Product**

| Calendar year | Payroll taxes | Tax on benefits | Premiums[1] | General revenue | Total income[2] | Total expenditures |
|---|---|---|---|---|---|---|
| Historical data: | | | | | | |
| 1970 | 0.5 | — | 0.1 | 0.2 | 0.8 | 0.7 |
| 1980 | 0.9 | — | 0.1 | 0.3 | 1.3 | 1.3 |
| 1990 | 1.2 | — | 0.2 | 0.6 | 2.0 | 1.9 |
| 2000 | 1.5 | 0.1 | 0.2 | 0.7 | 2.5 | 2.3 |
| Intermediate estimates: | | | | | | |
| 2010 | 1.5 | 0.1 | 0.3 | 0.8 | 2.7 | 2.5 |
| 2020 | 1.4 | 0.2 | 0.4 | 1.2 | 3.1 | 3.3 |
| 2030 | 1.4 | 0.2 | 0.5 | 1.6 | 3.7 | 4.5 |
| 2040 | 1.4 | 0.2 | 0.6 | 1.8 | 4.0 | 5.4 |
| 2050 | 1.4 | 0.2 | 0.7 | 1.9 | 4.2 | 6.0 |
| 2060 | 1.3 | 0.2 | 0.8 | 2.2 | 4.5 | 6.8 |
| 2070 | 1.3 | 0.2 | 0.9 | 2.6 | 5.0 | 7.9 |

[1]Includes both HI and SMI premium revenues.
[2]Excludes interest earnings on invested HI and SMI trust fund assets.

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

In 2001, HI payroll taxes represented about 60 percent of total non-interest income to the Medicare program. General revenues (primarily those for SMI) were the next largest source of overall financing, at about 28 percent. Beneficiary premiums (again, primarily for SMI) were third, at 9 percent. Under current law, HI tax revenues are projected to fall increasingly short of HI expenditures after 2015. In contrast, SMI premium and general revenues will keep pace with SMI expenditure growth. Consequently, in the absence of legislation, HI tax income would represent a declining portion of total Medicare revenues. In 2029, for example, just prior to the projected exhaustion of the HI trust fund, currently scheduled HI payroll taxes would represent about 38 percent of total

non-interest Medicare income. General revenues and beneficiary premiums would equal about 42 and 14 percent, respectively.

Under current law, the HI and SMI trust funds are separate and distinct, each with its own sources of financing. There are no provisions for using HI revenues to finance SMI expenditures, or vice versa, or for lending assets between the two trust funds. Moreover, the eligibility rules, benefit provisions, and financing methods are very different between these Medicare components. In particular, the SMI trust fund is automatically in financial balance under current law, whereas the HI fund is not.

For these reasons, the financial status of the Medicare trust funds can only be evaluated by separately assessing the status of each fund. The following two sections of this report present such assessments for HI and SMI, respectively.

## *B. HI Financial Status*

### 1. HI Financial Operations in Fiscal Year 2001

The Federal Hospital Insurance Trust Fund was established on July 30, 1965 as a separate account in the U.S. Treasury. All the HI financial operations are handled through this fund.

A statement of the revenue and expenditures of the fund in fiscal year 2001, and of its assets at the beginning and end of the fiscal year, is presented in table II.B1.

The total assets of the trust fund amounted to $168,084 million on September 30, 2000. During fiscal year 2001, total revenue amounted to $171,014 million, and total expenditures were $141,723 million. Total assets thus increased by $29,290 million during the year, to $197,374 million on September 30, 2001.

**Table II.B1.—Statement of Operations of the HI Trust Fund during Fiscal Year 2001**
[In thousands]

| | |
|---|---|
| Total assets of the trust fund, beginning of period | $168,084,032 |
| Revenue: | |
| Payroll taxes | $151,930,505 |
| Income from taxation of OASDI benefits | 4,903,000 |
| Interest on investments | 12,290,245 |
| Premiums collected from voluntary participants | 1,439,510 |
| Transfer from Railroad Retirement account | 421,800 |
| Reimbursement, transitional uninsured coverage | 453,000 |
| Military service credits of 2001 | 1,887 |
| Quinquennial adjustment of Military Service Credits | -1,177,000 |
| Reimbursement, program management general fund | 148,411 |
| Interest on reimbursements, SSA[1] | 77 |
| Interest on reimbursements, CMS[1] | 760 |
| Interest on reimbursements, Railroad Retirement | 47,889 |
| Other | 591 |
| Reimbursement, Union Activity | 1,478 |
| Fraud and abuse control receipts: | |
| Criminal fines | 2,894 |
| Civil monetary penalties | 6,060 |
| Civil penalties and damages, CMS | 13,517 |
| Civil penalties and damages, Department of Justice | 441,099 |
| Fraud and abuse appropriation for FBI | 88,000 |
| Total revenue | $171,013,722 |
| Expenditures: | |
| Net benefit payments | $139,355,695 |
| Administrative expenses: | |
| Treasury administrative expenses | 40,270 |
| Salaries and expenses, SSA[2] | 554,317 |
| Salaries and expenses, CMS[3] | 840,284 |
| Salaries and expenses, Office of the Secretary, HHS | 2,828 |
| Medicare Payment Advisory Commission | 4,800 |
| Fraud and abuse control expenses: | |
| HHS Medicare integrity program | 607,909 |
| HHS Office of Inspector General | 190,547 |
| Department of Justice | 38,818 |
| FBI | 88,000 |
| Total expenditures | $141,723,469 |
| Total assets of the trust fund, end of period | $197,374,285 |

[1]A positive figure represents a transfer to the HI trust fund from the other trust funds. A negative figure represents a transfer from the HI trust fund to the other funds.
[2]For facilities, goods, and services provided by SSA.
[3]Includes administrative expenses of the intermediaries.

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

### *a. Revenues*

The trust fund's primary source of income consists of amounts appropriated to it, under permanent authority, on the basis of taxes paid by workers, their employers, and individuals with self-employment income, in work covered by HI. Included in HI are workers covered under the OASDI program, those covered under the Railroad Retirement program, and certain federal, state, and local employees not otherwise covered under the OASDI program.

HI taxes are payable on a covered individual's total wages and self-employment income, without limit. For calendar years prior to 1994, taxes were computed on a person's annual earnings up to a specified maximum annual amount, called the maximum tax base. (Legislation enacted in 1993 removed the limit on taxable income beginning in calendar year 1994.)

The HI tax rates applicable in each of the calendar years 1966 and later are shown in table II.B2. For 2003 and thereafter, the tax rates shown are the rates scheduled in present law. The maximum tax bases for 1966-1993 are also presented.

**Table II.B2.—Tax Rates and Maximum Tax Bases**

| | | Tax rate (Percentage of taxable earnings) | |
|---|---|---|---|
| Calendar years | Maximum tax base | Employees and employers, each | Self-employed |
| Past experience: | | | |
| 1966 | $6,600 | 0.35 | 0.35 |
| 1967 | 6,600 | 0.50 | 0.50 |
| 1968-71 | 7,800 | 0.60 | 0.60 |
| 1972 | 9,000 | 0.60 | 0.60 |
| 1973 | 10,800 | 1.00 | 1.00 |
| 1974 | 13,200 | 0.90 | 0.90 |
| 1975 | 14,100 | 0.90 | 0.90 |
| 1976 | 15,300 | 0.90 | 0.90 |
| 1977 | 16,500 | 0.90 | 0.90 |
| 1978 | 17,700 | 1.00 | 1.00 |
| 1979 | 22,900 | 1.05 | 1.05 |
| 1980 | 25,900 | 1.05 | 1.05 |
| 1981 | 29,700 | 1.30 | 1.30 |
| 1982 | 32,400 | 1.30 | 1.30 |
| 1983 | 35,700 | 1.30 | 1.30 |
| 1984 | 37,800 | 1.30 | 2.60 |
| 1985 | 39,600 | 1.35 | 2.70 |
| 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 |
| 1991 | 125,000 | 1.45 | 2.90 |
| 1992 | 130,200 | 1.45 | 2.90 |
| 1993 | 135,000 | 1.45 | 2.90 |
| 1994-2002 | no limit | 1.45 | 2.90 |
| Scheduled in present law: | | | |
| 2003 & later | no limit | 1.45 | 2.90 |

Total HI payroll tax income in fiscal year 2001 amounted to $151,931 million—an increase of 10.3 percent over the amount of $137,738 million for the preceding 12-month period. This growth in tax income resulted from the higher level of earnings in covered employment, together with an increase in the number of covered workers in the labor force. It also reflected adjustments for underestimation of tax appropriations in prior periods.

Up to 85 percent of an individual's or couple's OASDI benefits may be subject to federal income taxation if their income exceeds certain thresholds. The income tax revenue attributable to the first 50 percent of OASDI benefits is allocated to the OASI and DI trust funds. The revenue associated with the amount between 50 and 85 percent of benefits is allocated to the HI trust fund. Income from the taxation of OASDI benefits amounted to $4,903 million in fiscal year 2001. This amount is smaller than in previous years as a result of a clerical error resulting in an incorrect amount being transferred in April 2001. The principal component of the error was corrected in December 2001, when the extra amount was transferred to the HI trust fund. The interest component of the error requires legislation to correct, and that is currently being pursued.

Another substantial source of trust fund income is interest credited from investments in government securities held by the fund. In fiscal year 2001, $12,290 million in interest was credited to the fund. The investment procedures of the fund are described later in this section.

Section 1818 of the Social Security Act provides that certain persons not otherwise eligible for HI protection may obtain coverage by enrolling in HI and paying a monthly premium. Premiums collected from such voluntary participants in fiscal year 2001 amounted to about $1,440 million.

The Railroad Retirement Act provides for a system of coordination and financial interchange between the Railroad Retirement program and the HI trust fund. This financial interchange requires a transfer that would place the HI trust fund in the same position in which it would have been if railroad employment had always been covered under the Social Security Act. In accordance with these provisions, a transfer of $422 million in principal and about $28 million in interest from the Railroad Retirement program's Social Security Equivalent Benefit Account to the HI trust fund balanced the two systems as of September 30, 2000. This amount, together with interest to the date of transfer totaling about $20 million, was transferred to the trust fund in June 2001.

Two sections of the statute authorize HI benefits for certain uninsured persons aged 65 and over. Entitlement to HI benefits was provided to almost all persons aged 65 and over, or near that age, when the HI trust fund first began operations. Legislation in 1982 added similar transitional entitlement for those federal employees who would retire before having had a chance to earn sufficient

quarters of Medicare-qualified federal employment. The costs of such coverage, including administrative expenses, are reimbursed from the general fund of the treasury. In fiscal year 2001, such reimbursement amounted to $453 million: $451 million for estimated benefit payments and $2 million for administrative expenses. The $451 million for benefit payments consisted of $319 million for non-federal uninsured and $132 million for federal uninsured beneficiaries.

The Social Security Act grants certain wage credits to individuals who serve in the military. Section 217(g) of the Act provides for periodic transfers between the general fund of the treasury and the HI trust fund, if needed to adjust prior payments for the costs arising from wage credits granted for military service before 1957. The quinquennial adjustment to the amount transferred in 1983 was paid from the HI trust fund to the general fund of the treasury in September 2001 in the amount of $1,177 million. This adjustment resulted from a substantial reduction in the level of projected benefits due to recent legislation.

Prior to 2002, section 229(b) authorized annual payments from the general fund of the treasury equivalent to the combined employee and employer payroll taxes that would be paid on the current year's military service wage credits if such credits were covered wages. The HI trust fund should have received approximately $60 million in each of 2000 and 2001 under this provision. Due to problems involving the budget appropriations for the Department of Defense, however, the full reimbursement was not made, and only about $2 million was received in each year. Public Law 107-117, enacted in January 2002, eliminated these deemed wage credits and the associated trust fund reimbursements after 2001 and directed the Department of Defense to develop a plan for reimbursing the HI trust fund for the missing transfers in 2000 and 2001. For purposes of the HI income projections shown in this report, the missing transfers are assumed not to be reimbursed.

The Health Insurance Portability and Accountability Act of 1996 established a health care fraud and abuse control account within the HI trust fund. Monies derived from the fraud and abuse control program are transferred from the general fund of the treasury to the HI trust fund. During fiscal year 2001, the trust fund was credited with about $552 million in receipts from this program.

***b. Expenditures***

Expenditures for HI benefit payments and administrative expenses are paid out of the trust fund. All expenses incurred by the Department of Health and Human Services, the Social Security Administration, the Department of the Treasury (including the Internal Revenue Service), and the Department of Justice in administering HI are charged to the trust fund. Such administrative duties include payment of benefits, the collection of taxes, fraud and abuse control activities, and experiments and demonstration projects designed to determine various methods of increasing efficiency and economy in providing health care services, while maintaining the quality of such services, under HI and SMI.

In addition, Congress has authorized expenditures from the trust funds for construction, rental and lease, or purchase contracts of office buildings and related facilities for use in connection with the administration of HI. These costs are included in trust fund expenditures. The net worth of facilities and other fixed capital assets, however, is not carried in the statement of trust fund assets presented in this report, since the value of fixed capital assets does not represent funds available for benefit or administrative expenditures and is not, therefore, considered in assessing the actuarial status of the funds.

Of the $141,723 million in total HI expenditures, $139,356 million represented net benefits paid from the trust fund for health services.[8] Net benefit payments increased 8.9 percent in fiscal year 2001 over the corresponding amount of $127,934 million paid during the preceding fiscal year. This increase reflected the impact of the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000. In addition, the portion of costs of home health services transferred to the SMI trust fund decreased at the start of the prospective payment system in October 2000. Additional information on HI benefits by type of service is available in section III.A.

The remaining $2,368 million of expenditures was for net HI administrative expenses, after adjustments to the preliminary allocation of administrative costs among the Social Security and Medicare trust funds and the general fund of the treasury. This

[8]Net benefits equal the total, gross amounts initially paid from the trust fund during the year, less recoveries of overpayments identified through fraud and abuse control activities.

amount includes $925 million for the health care fraud and abuse control program.

### *c. Actual experience versus prior estimates*

Table II.B3 compares the actual experience in fiscal year 2001 with the estimates presented in the 2000 and 2001 annual reports. A number of factors can contribute to differences between estimates and subsequent actual experience. In particular, actual values for key economic and other variables can differ from assumed levels, and legislative and regulatory changes may be adopted after a report's preparation. The comparison in table II.B3 indicates that actual HI tax income was higher than estimated in both the 2000 and 2001 reports, primarily as a result of economic growth in 2000-2001 that was more favorable than anticipated. Actual HI benefit payments in fiscal year 2001 were about the same as the amount projected in the 2001 report and slightly lower than the amount projected in the 2000 report.

**Table II.B3.—Comparison of Actual and Estimated Operations of the HI Trust Fund, Fiscal Year 2001**

[Dollar amounts in millions]

| | | Comparison of actual experience with estimates for fiscal year 2001 published in- | | | |
|---|---|---|---|---|---|
| | | 2001 report | | 2000 report | |
| Item | Actual amount | Estimated amount[1] | Actual as percentage of estimate | Estimated amount[1] | Actual as percentage of estimate |
| Payroll taxes | $151,931 | $149,755 | 101 | $146,921 | 103 |
| Benefit payments | 139,356 | 139,118 | 100 | 141,106 | 99 |

[1]Under the intermediate assumptions.

### *d.* Assets

The portion of the trust fund that is not required to meet current expenditures for benefits and administration is invested, on a daily basis, primarily in interest-bearing obligations of the U.S. Government. The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the trust fund. The law requires that these special public-debt obligations bear interest, at a rate based on the average market yield (computed on the basis of market quotations as of the end of the calendar month immediately preceding the date of such issue), on all marketable interest-bearing obligations of the United States forming a part of the public debt that are not due or callable until after the expiration of

4 years from the end of such month. Currently, all invested assets of the HI trust fund are in the form of such special-issue securities.[9]

Table II.B4 shows the total assets of the fund and their distribution at the end of fiscal years 2000 and 2001. The assets of the HI trust fund at the end of fiscal year 2001 totaled $197,374 million: $197,137 million in the form of U.S. Government obligations and an undisbursed balance of $237 million.

**Table II.B4.—Assets of the HI Trust Fund, by Type, at the End of Fiscal Years 2000 and 2001[1]**

| | September 30, 2000 | September 30, 2001 |
|---|---|---|
| Investments in public-debt obligations sold only to the trust funds (special issues): | | |
| Certificates of indebtedness: | | |
| 5.125-percent, 2002 | —— | $2,217,481,000.00 |
| 5.625-percent, 2002 | —— | 163,377,000.00 |
| 6.000-percent, 2001 | $7,044,143,000.00 | —— |
| 6.250-percent, 2001 | 746,955,000.00 | —— |
| Bonds: | | |
| 5.625-percent, 2003-2016 | —— | 43,828,225,000.00 |
| 5.875-percent, 2011-2012 | 8,754,457,000.00 | 8,754,457,000.00 |
| 6.000-percent, 2012-2014 | 20,598,023,000.00 | 20,598,023,000.00 |
| 6.250-percent, 2002 | 363,198,000.00 | 337,501,000.00 |
| 6.250-percent, 2003-2008 | 10,364,115,000.00 | 10,364,115,000.00 |
| 6.500-percent, 2001 | 1,703,916,000.00 | —— |
| 6.500-percent, 2002-2015 | 45,880,458,000.00 | 45,880,458,000.00 |
| 6.875-percent, 2011 | 2,166,172,000.00 | 2,166,172,000.00 |
| 7.000-percent, 2011 | 3,368,466,000.00 | 3,368,466,000.00 |
| 7.250-percent, 2001 | 225,129,000.00 | —— |
| 7.250-percent, 2002-2009 | 10,349,161,000.00 | 10,349,161,000.00 |
| 7.375-percent, 2001 | 867,960,000.00 | —— |
| 7.375-percent, 2002-2007 | 12,524,733,000.00 | 12,524,733,000.00 |
| 8.125-percent, 2001 | 901,274,00.00 | —— |
| 8.125-percent, 2002-2006 | 10,922,061,000.00 | 10,922,061,000.00 |
| 8.375-percent, 2001 | 2,509,152,000.00 | —— |
| 8.625-percent, 2001 | 686,250,000.00 | —— |
| 8.625-percent, 2002 | 3,195,402,000.00 | 3,195,402,000.00 |
| 8.750-percent, 2001 | 2,185,751,000.00 | —— |
| 8.750-percent, 2002-2005 | 17,202,892,000.00 | 17,202,892,000.00 |
| 9.250-percent, 2001 | 1,034,542,000.00 | —— |
| 9.250-percent, 2002-2003 | 5,264,486,000.00 | 5,264,486,000.00 |
| Total investments | $168,858,696,000.00 | $197,137,010,000.00 |
| Undisbursed balance[2] | -774,664,347.12 | 237,274,835.02 |
| Total assets | $168,084,031,652.88 | $197,374,284,835.02 |

[1]Certificates of indebtedness and bonds are carried at par value, which is the same as book value.
[2]Negative figures represent an extension of credit against securities to be redeemed within the following few days.

New securities at a total par value of $204,396 million were acquired during the fiscal year through the investment of revenue and the reinvestment of funds made available from the redemption of securities. The par value of securities redeemed during the fiscal year

[9]Investments may also be made in obligations guaranteed as to both principal and interest by the United States, including certain federally sponsored agency obligations.

was $176,117 million. Thus, the net increase in the par value of the investments held by the fund during fiscal year 2001 amounted to $28,278 million.

The effective annual rate of interest earned by the assets of the HI trust fund during the 12 months ending on December 31, 2001 was 6.9 percent. Interest on special issues is paid semiannually on June 30 and December 31. The interest rate on public-debt obligations issued for purchase by the trust fund in June 2001 was 5.625 percent, payable semiannually.

**2. 10-Year Actuarial Estimates (2002-2011)**

While the previous section addressed the transactions of the HI trust fund during the preceding fiscal year, this section presents estimates of the trust fund's operations and financial status for the next 10 years. The long-range actuarial status of the trust fund is discussed in the next section. In both this and the following section, no changes are assumed to occur in the present statutory provisions and regulations under which HI operates.

The estimates shown in this section provide detailed information concerning the short-range financial status of the trust fund. The estimated levels of future income and outgo, annual differences between income and outgo, and annual trust fund balances are explained and examined. Two particularly important short-range solvency measures for the HI trust fund—the estimated year of exhaustion and the test of short-range financial adequacy—are also discussed.

To illustrate the sensitivity of future costs to different economic and demographic trends, estimates are shown under three alternative sets of assumptions, which are intended to portray a reasonable range of possible future trends. Due to the uncertainty inherent in such projections, however, the actual operations of the HI trust fund in the future could differ significantly from these estimates.

The expected operations of the HI trust fund during fiscal years 2002 to 2011, together with the past experience, are shown in table II.B5.[10]

[10]The income and expenditures shown in table II.B5 differ somewhat from those shown in the President's Fiscal Year 2003 Budget. The estimates presented in this report are based on different demographic and economic projections, and they do not reflect the implementation of proposed changes in laws and regulations that were included in the budget.

*Actuarial Analysis*

The estimates shown in this table are based on the intermediate set of assumptions. The assumptions underlying the intermediate projections are presented in section III.A of this report.

The increases in estimated income shown in table II.B5 primarily reflect increases in payroll tax income to the trust fund. As noted previously, the main source of HI financing is the payroll tax on covered earnings paid by employees, employers, and self-employed workers. While the payroll tax rate is scheduled to remain constant, covered earnings are assumed to increase in every year through 2011 under the intermediate assumptions. These increases in taxable earnings are due primarily to projected increases both in the number of HI workers covered and in the average earnings of these workers.

Over the next 10 years, most of the smaller sources of financing for the HI trust fund are projected to increase as well. More detailed descriptions of these sources of income can be found in section II.B1.

Interest earnings have been a significant source of income to the trust fund for many years, having ranked second only to payroll taxes. As the trust fund grows in the future, with income in excess of expenditures, interest earnings would grow more rapidly than the other components of HI income.

Expenditures for benefits are projected to increase in fiscal years 2002 to 2011. For about the first half of this period, HI benefits would increase at a slower rate than income due to the savings provisions of the Balanced Budget Act of 1997 (BBA) (as subsequently modified in 1999 and 2000). After this time, benefits are expected to increase at a faster rate than income for the remainder of the short-range period and beyond.

The estimated expenditures of the HI trust fund reflect the transfer of certain home health services from HI to SMI, as specified by the BBA. Beginning January 1998, for individuals enrolled in both HI and SMI, HI covers the first 100 home health visits following a hospital or skilled nursing facility stay of at least 3 days, and coverage of all other home health services for these individuals is transferred from HI to SMI. Therefore, all benefit payments for those transferred services are to be paid out of the SMI trust fund beginning January 1998. However, for the 6-year period 1998 through 2003, sums of money are to be transferred from the HI trust fund to the SMI trust fund to phase in the financial impact of the transfer of these services. The sums of money to be transferred are determined

so that the net additional expenditures of the SMI trust fund will be one-sixth of the cost of the services transferred in 1998, incremented by an additional one-sixth of the cost each year thereafter. The HI benefit payments for 1998 through 2003 shown throughout this report represent the sum of the regular payments for HI-covered services and the funds transferred to the SMI trust fund.

The actual operations of HI are organized, in general, on a calendar-year basis. Earnings subject to taxation and the applicable tax rates are established by calendar year, as are the inpatient hospital deductible and other cost-sharing amounts. The projected operations of the trust fund on a calendar-year basis are shown in table II.B6.

**Table II.B5.—Operations of the HI Trust Fund during Fiscal Years 1970-2011**

[In millions]

| | Income | | | | | | | | Expenditures | | | Trust fund | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiscal year[1] | Payroll taxes | Income from taxation of benefits | Railroad Retirement account transfers | Reimburse-ment for uninsured persons | Premiums from voluntary enrollees | Payments for military wage credits | Interest and other income[2] | Total income | Benefit payments[3] | Adminis-trative expenses[4] | Total expendi-tures | Net increase in fund | Fund at end of year |
| Historical data: | | | | | | | | | | | | | |
| 1970 | $4,785 | — | $64 | $617 | — | $11 | $137 | $5,614 | $4,804 | $149 | $4,953 | $661 | $2,677 |
| 1975 | 11,291 | — | 132 | 481 | $6 | 48 | 609 | 12,568 | 10,353 | 259 | 10,612 | 1,956 | 9,870 |
| 1980 | 23,244 | — | 244 | 697 | 17 | 141 | 1,072 | 25,415 | 23,790 | 497 | 24,288 | 1,127 | 14,490 |
| 1985 | 46,490 | — | 371 | 766 | 38 | 86 | 3,182 | 50,933 | 47,841 | 813 | 48,654 | 4,103[5] | 21,277 |
| 1990 | 70,655 | — | 367 | 413 | 113 | 107 | 7,908 | 79,563 | 65,912 | 774 | 66,687 | 12,876 | 95,631 |
| 1995 | 98,053 | 3,913 | 396 | 462 | 998 | 61 | 10,963 | 114,847 | 113,583 | 1,300 | 114,883 | -36 | 129,520 |
| 1996 | 106,934 | 4,069 | 401 | 419 | 1,107 | -2,293[6] | 10,496 | 121,135 | 124,088 | 1,229 | 125,317 | -4,182 | 125,338 |
| 1997 | 112,725 | 3,558 | 419 | 481 | 1,279 | 70 | 10,017 | 128,548 | 136,175 | 1,661 | 137,836 | -9,287 | 116,050 |
| 1998 | 121,913 | 5,067 | 419 | 34 | 1,320 | 67 | 9,382 | 138,203 | 135,487[7] | 1,653 | 137,140 | 1,063 | 117,113 |
| 1999 | 134,385 | 6,552 | 430 | 652 | 1,401 | 71 | 9,523 | 153,015 | 129,463[7] | 1,978 | 131,441 | 21,574 | 138,687 |
| 2000 | 137,738 | 8,787 | 465 | 470 | 1,392 | 2 | 10,827 | 159,681 | 127,934[7] | 2,350 | 130,284 | 29,397 | 168,084 |
| 2001 | 151,931 | 4,903 | 470 | 453 | 1,440 | -1,175[8] | 12,993 | 171,014 | 139,356[7] | 2,368 | 141,723 | 29,290 | 197,374 |
| Intermediate estimates: | | | | | | | | | | | | | |
| 2002 | 153,409 | 11,119 | 458 | 442 | 1,492 | 0 | 14,067 | 180,987 | 143,373[7] | 2,615 | 145,988 | 35,000 | 232,374 |
| 2003 | 161,366 | 9,024 | 463 | 393 | 1,553 | 0 | 15,561 | 188,360 | 148,655[7] | 2,781 | 151,436 | 36,923 | 269,297 |
| 2004 | 169,916 | 9,588 | 475 | 202 | 1,640 | 0 | 18,043 | 199,865 | 155,382 | 2,857 | 158,239 | 41,625 | 310,923 |
| 2005 | 180,704 | 10,235 | 486 | 195 | 1,742 | 0 | 20,689 | 214,050 | 166,082 | 2,951 | 169,033 | 45,018 | 355,940 |
| 2006 | 189,262 | 10,771 | 494 | 202 | 1,854 | 0 | 23,521 | 226,104 | 172,446 | 3,044 | 175,490 | 50,614 | 406,554 |
| 2007 | 199,543 | 11,756 | 513 | 211 | 1,973 | 0 | 26,575 | 240,570 | 184,461 | 3,137 | 187,598 | 52,972 | 459,527 |
| 2008 | 209,482 | 12,944 | 532 | 220 | 2,092 | 0 | 29,818 | 255,089 | 196,147 | 3,237 | 199,384 | 55,705 | 515,232 |
| 2009 | 219,546 | 14,367 | 553 | 230 | 2,222 | 0 | 33,208 | 270,126 | 208,884 | 3,341 | 212,225 | 57,901 | 573,133 |
| 2010 | 231,514 | 16,012 | 575 | 237 | 2,367 | 0 | 36,556 | 287,262 | 222,502 | 3,447 | 225,949 | 61,313 | 634,445 |
| 2011 | 243,316 | 18,927 | 599 | 244 | 2,519 | 0 | 40,140 | 305,745 | 239,863 | 3,563 | 243,426 | 62,319 | 696,764 |

[1]Fiscal years 1970 and 1975 consist of the 12 months ending on June 30 of each year; fiscal years 1980 and later consist of the 12 months ending on September 30 of each year.
[2]Other income includes recoveries of amounts reimbursed from the trust fund that are not obligations of the trust fund, receipts from the fraud and abuse control program, and a small amount of miscellaneous income.
[3]Includes costs of Peer Review Organizations (beginning with the implementation of the prospective payment system on October 1, 1983).
[4]Includes costs of experiments and demonstration projects. Beginning in 1997, includes fraud and abuse control expenses, as provided for by Public Law 104-191.
[5]Includes repayment of loan principal, from the OASI trust fund, of $1,824 million.
[6]Includes the lump-sum general revenue adjustment of -$2,366 million, as provided for by section 151 of Public Law 98-21.
[7]For 1998 to 2003, includes monies transferred to the SMI trust fund for home health agency costs, as provided for by Public Law 105-33.
[8]Includes the lump-sum general revenue adjustment of -$1,177 million, as provided for by section 151 of Public Law 98-21.

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

**Table II.B6.—Operations of the HI Trust Fund during Calendar Years 1970-2011**

[In millions]

| | Income | | | | | | | | Expenditures | | | Trust fund | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year | Payroll taxes | Income from taxation of benefits | Railroad Retirement account transfers | Reimburse-ment for uninsured persons | Premiums from voluntary enrollees | Payments for military wage credits | Interest and other income[1] | Total income | Benefit payments[2] | Adminis-trative expenses[3] | Total expendi-tures | Net increase in fund | Fund at end of year |
| Historical data: | | | | | | | | | | | | | |
| 1970 | $4,881 | — | $66 | $863 | — | $11 | $158 | $5,979 | $5,124 | $157 | $5,281 | $698 | $3,202 |
| 1975 | 11,502 | — | 138 | 621 | $7 | 48 | 664 | 12,980 | 11,315 | 266 | 11,581 | 1,399 | 10,517 |
| 1980 | 23,848 | — | 244 | 697 | 18 | 141 | 1,149 | 26,097 | 25,064 | 512 | 25,577 | 521 | 13,749 |
| 1985 | 47,576 | — | 371 | 766 | 41 | -719[4] | 3,362 | 51,397 | 47,580 | 834 | 48,414 | 4,808[5] | 20,499 |
| 1990 | 72,013 | — | 367 | 413 | 122 | -993[6] | 8,451 | 80,372 | 66,239 | 758 | 66,997 | 13,375 | 98,933 |
| 1995 | 98,421 | 3,913 | 396 | 462 | 954 | 61 | 10,820 | 115,027 | 116,368 | 1,236 | 117,604 | -2,577 | 130,267 |
| 1996 | 110,585 | 4,069 | 401 | 419 | 1,199 | -2,293[7] | 10,222 | 124,603 | 128,632 | 1,297 | 129,929 | -5,325 | 124,942 |
| 1997 | 114,670 | 3,558 | 419 | 481 | 1,319 | 70 | 9,637 | 130,154 | 137,762 | 1,690 | 139,452 | -9,298 | 115,643 |
| 1998 | 124,317 | 5,067 | 419 | 34 | 1,316 | 67 | 9,327 | 140,547 | 133,990[8] | 1,782 | 135,771 | 4,776 | 120,419 |
| 1999 | 132,306 | 6,552 | 430 | 652 | 1,447 | 71 | 10,139 | 151,597 | 128,766[8] | 1,866 | 130,632 | 20,965 | 141,385 |
| 2000 | 144,351 | 8,787 | 465 | 470 | 1,382 | 2 | 11,729 | 167,185 | 128,458[8] | 2,636 | 131,095 | 36,090 | 177,475 |
| 2001 | 151,994 | 7,533 | 470 | 453 | 1,370 | -1,175[9] | 13,986 | 174,630 | 141,183[8] | 2,195 | 143,379 | 31,251 | 208,726 |
| Intermediate estimates: | | | | | | | | | | | | | |
| 2002 | 155,185 | 8,489 | 458 | 442 | 1,533 | 0 | 14,810 | 180,917 | 146,675[8] | 2,653 | 149,328 | 31,589 | 240,315 |
| 2003 | 163,820 | 9,024 | 463 | 393 | 1,559 | 0 | 16,745 | 192,004 | 149,817[8] | 2,807 | 152,624 | 39,380 | 279,695 |
| 2004 | 172,741 | 9,588 | 475 | 202 | 1,667 | 0 | 19,336 | 204,009 | 157,550 | 2,874 | 160,424 | 43,585 | 323,280 |
| 2005 | 182,179 | 10,235 | 486 | 195 | 1,767 | 0 | 22,086 | 216,947 | 166,801 | 2,976 | 169,777 | 47,170 | 370,451 |
| 2006 | 191,166 | 10,771 | 494 | 202 | 1,883 | 0 | 25,017 | 229,533 | 176,734 | 3,066 | 179,800 | 49,733 | 420,183 |
| 2007 | 202,109 | 11,756 | 513 | 211 | 2,003 | 0 | 28,184 | 244,775 | 187,298 | 3,160 | 190,458 | 54,317 | 474,500 |
| 2008 | 212,349 | 12,944 | 532 | 220 | 2,122 | 0 | 31,502 | 259,670 | 199,400 | 3,262 | 202,662 | 57,008 | 531,508 |
| 2009 | 222,948 | 14,367 | 553 | 230 | 2,255 | 0 | 34,870 | 275,223 | 212,350 | 3,367 | 215,717 | 59,506 | 591,014 |
| 2010 | 233,906 | 16,012 | 575 | 237 | 2,404 | 0 | 38,325 | 291,460 | 226,247 | 3,474 | 229,721 | 61,739 | 652,752 |
| 2011 | 245,338 | 18,927 | 599 | 244 | 2,557 | 0 | 41,995 | 309,660 | 241,490 | 3,592 | 245,082 | 64,578 | 717,331 |

[1]Other income includes recoveries of amounts reimbursed from the trust fund that are not obligations of the trust fund, receipts from the fraud and abuse control program, and a small amount of miscellaneous income.
[2]Includes costs of Peer Review Organizations (beginning with the implementation of the prospective payment system on October 1, 1983).
[3]Includes costs of experiments and demonstration projects. Beginning in 1997, includes fraud and abuse control expenses, as provided for by Public Law 104-191.
[4]Includes the lump-sum general revenue adjustment of -$805 million, as provided for by section 151 of Public Law 98-21.
[5]Includes repayment of loan principal, from the OASI trust fund, of $1,824 million.
[6]Includes the lump-sum general revenue adjustment of -$1,100 million, as provided for by section 151 of Public Law 98-21.
[7]Includes the lump-sum general revenue adjustment of -$2,366 million, as provided for by section 151 of Public Law 98-21.
[8]For 1998 to 2003, includes monies transferred to the SMI trust fund for home health agency costs, as provided for by Public Law 105-33.
[9]Includes the lump-sum general revenue adjustment of -$1,177 million, as provided for by section 151 of Public Law 98-21.

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

Since future economic, demographic, and health care usage and cost experience may differ considerably from the intermediate assumptions on which the cost estimates shown in tables II.B5 and II.B6 were based, projections have also been prepared on the basis of two different sets of assumptions, labeled "low cost" and "high cost." The three sets of assumptions were selected to illustrate the sensitivity of costs to different economic and demographic trends, and to provide an indication of the uncertainty associated with HI financial projections. The low cost and high cost alternatives provide for a fairly wide range of possible experience. While actual experience may be expected to fall within the range, no assurance can be made that this will be the case, particularly in light of the wide variations in experience that have occurred since the beginning. The assumptions used in preparing projections under the low cost and high cost alternatives, as well as under the intermediate assumptions, are discussed more fully in section III.A of this report.

The estimated operations of the HI trust fund during calendar years 2001 to 2011, for total income and expenditures under all three alternatives, are summarized in table II.B7. The trust fund ratio, defined as the ratio of assets at the beginning of the year to expenditures during the year, was 124 percent for 2001. Under the intermediate assumptions, the trust fund ratio is projected to increase until 2015. Thereafter, the ratio would decline beyond the 10-year short-term projection period, with the fund becoming exhausted in 2030 under the intermediate assumptions. Under the low cost alternative, trust fund assets would increase steadily throughout the 75-year projection period, while under the high cost alternative, exhaustion would occur in 2018, somewhat after the 10-year period. Without corrective legislation, therefore, the assets of the HI trust fund would be exhausted within the next 16 to 28 years under the high cost and intermediate assumptions. The fact that exhaustion would occur under a fairly broad range of future economic conditions, and is expected to occur in the not-distant future, indicates the importance of addressing the HI trust fund's financial imbalance.

**Table II.B7.—Estimated Operations of the HI Trust Fund during Calendar Years 2001-2011, under Alternative Sets of Assumptions**

[Dollar amounts in billions]

| Calendar year | Total income | Total expenditures | Net increase in fund | Fund at end of year | Ratio of assets to expenditures[1] (percent) |
|---|---|---|---|---|---|
| Intermediate: | | | | | |
| 2001[2] | $174.6 | $143.4 | $31.3 | $208.7 | 124 |
| 2002 | 180.9 | 149.3 | 31.6 | 240.3 | 140 |
| 2003 | 192.0 | 152.6 | 39.4 | 279.7 | 157 |
| 2004 | 204.0 | 160.4 | 43.6 | 323.3 | 174 |
| 2005 | 216.9 | 169.8 | 47.2 | 370.5 | 190 |
| 2006 | 229.5 | 179.8 | 49.7 | 420.2 | 206 |
| 2007 | 244.8 | 190.5 | 54.3 | 474.5 | 221 |
| 2008 | 259.7 | 202.7 | 57.0 | 531.5 | 234 |
| 2009 | 275.2 | 215.7 | 59.5 | 591.0 | 246 |
| 2010 | 291.5 | 229.7 | 61.7 | 652.8 | 257 |
| 2011 | 309.7 | 245.1 | 64.6 | 717.3 | 266 |
| Low cost: | | | | | |
| 2001[2] | $174.6 | $143.4 | $31.3 | 208.7 | 124 |
| 2002 | 182.5 | 146.0 | 36.5 | 245.2 | 143 |
| 2003 | 194.5 | 147.0 | 47.5 | 292.7 | 167 |
| 2004 | 207.3 | 151.9 | 55.4 | 348.1 | 193 |
| 2005 | 219.7 | 156.9 | 62.8 | 410.9 | 222 |
| 2006 | 231.7 | 162.0 | 69.7 | 480.6 | 254 |
| 2007 | 245.5 | 167.3 | 78.2 | 558.8 | 287 |
| 2008 | 260.2 | 174.0 | 86.3 | 645.1 | 321 |
| 2009 | 276.3 | 181.1 | 95.2 | 740.3 | 356 |
| 2010 | 293.2 | 188.5 | 104.7 | 845.0 | 393 |
| 2011 | 312.2 | 196.6 | 115.6 | 960.5 | 430 |
| High cost: | | | | | |
| 2001[2] | $174.6 | $143.4 | $31.3 | $208.7 | 124 |
| 2002 | 179.2 | 152.8 | 26.4 | 235.1 | 137 |
| 2003 | 191.1 | 159.4 | 31.6 | 266.8 | 147 |
| 2004 | 205.1 | 172.0 | 33.1 | 299.9 | 155 |
| 2005 | 217.6 | 185.5 | 32.1 | 332.0 | 162 |
| 2006 | 231.2 | 201.2 | 30.0 | 362.1 | 165 |
| 2007 | 251.1 | 220.9 | 30.1 | 392.2 | 164 |
| 2008 | 267.1 | 241.7 | 25.4 | 417.6 | 162 |
| 2009 | 281.5 | 263.0 | 18.5 | 436.1 | 159 |
| 2010 | 296.5 | 286.2 | 10.3 | 446.4 | 152 |
| 2011 | 313.4 | 312.4 | 1.0 | 447.4 | 143 |

[1]Ratio of assets in the fund at the beginning of the year to expenditures during the year.
[2]Figures for 2001 represent actual experience.

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

The Board of Trustees has established an explicit test of short-range financial adequacy. The requirements of this test are as follows: (1) If the HI trust fund ratio is at least 100 percent at the beginning of the projection period, then it must be projected to remain at or above 100 percent throughout the 10-year projection period; (2) alternatively, if the fund ratio is initially less than 100 percent, it must be projected to reach a level of at least 100 percent within 5 years (and the trust fund not be depleted at any time during this period), and then remain at or above 100 percent throughout the rest of the 10-year period. This test is applied to trust fund projections made under the intermediate assumptions.

Failure of the trust fund to meet this test is an indication that HI solvency over the next 10 years is in question and that action is needed to improve the short-range financial adequacy of the trust fund. As can be seen from table II.B7, the HI trust fund meets this short-range test. The trust fund ratio, which was above the 100-percent level at the beginning of 2002, is projected to increase through 2011. Accordingly, the financing for HI is considered adequate in the short-range projection period (2002-2011).

The ratios of assets in the HI trust fund at the beginning of each calendar year to total expenditures during that year are shown in table II.B8 for all past years since the beginning. Figure II.B1 shows these historical trust fund ratios and the projected ratios under the three sets of assumptions. Figure II.B2 shows end-of-year trust fund balances in dollars for historical years and for projected years under the three sets of assumptions. On both figures, the labels "I," "II," and "III" indicate projections under the low cost, intermediate, and high cost alternatives, respectively. Both figures illustrate the HI trust fund's expected growth over the next few years, even under adverse conditions such as those assumed in the high cost alternative. Figure II.B1 also indicates, however, the slowing of the growth of assets (as a percentage of expenditures) in the relatively near future, except under conditions of exceptionally robust economic growth and modest health care cost increases, as assumed in the low cost alternative.

**Table II.B8.—Ratio of Assets at the Beginning of the Year to Expenditures during the Year for the HI Trust Fund**

| Calendar year | Ratio |
|---|---|
| 1967 | 28% |
| 1968 | 25 |
| 1969 | 43 |
| 1970 | 47 |
| 1971 | 54 |
| 1972 | 47 |
| 1973 | 40 |
| 1974 | 69 |
| 1975 | 79 |
| 1976 | 77 |
| 1977 | 66 |
| 1978 | 57 |
| 1979 | 54 |
| 1980 | 52 |
| 1981 | 45 |
| 1982 | 52 |
| 1983 | 20 |
| 1984 | 29 |
| 1985 | 32 |
| 1986 | 41 |
| 1987 | 79 |
| 1988 | 101 |
| 1989 | 115 |
| 1990 | 128 |
| 1991 | 136 |
| 1992 | 136 |
| 1993 | 131 |
| 1994 | 122 |
| 1995 | 113 |
| 1996 | 100 |
| 1997 | 90 |
| 1998 | 85 |
| 1999 | 92 |
| 2000 | 108 |
| 2001 | 124 |

**Figure II.B1.—HI Trust Fund Balance at Beginning of Year as a Percentage of Annual Expenditures**

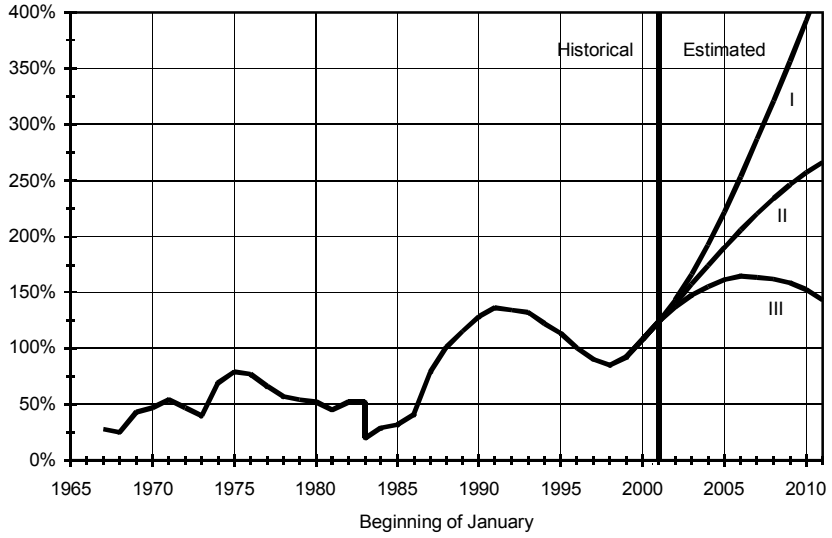
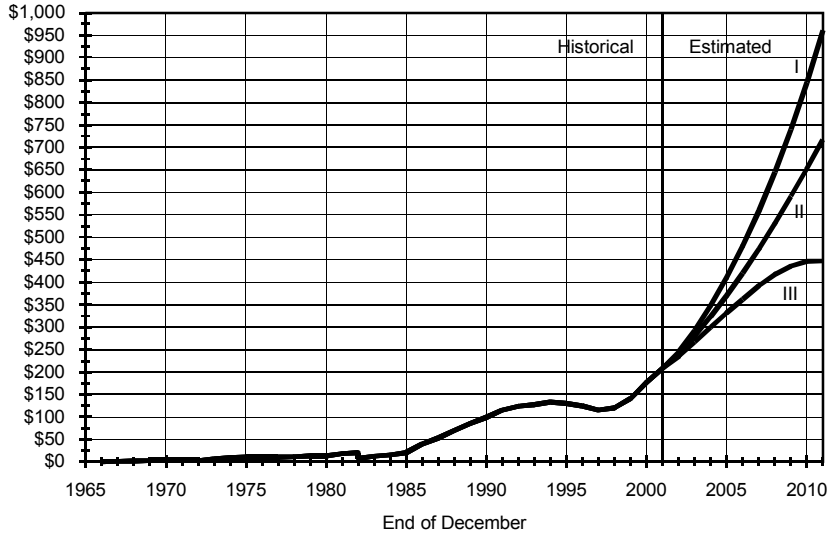



**Figure II.B2.—HI Trust Fund Balance at End of Year**

[In billions]



The Trustees have recommended that HI trust fund assets be maintained at a level of at least 100 percent of annual expenditures. Such a level is estimated to provide a cushion of roughly 5 years or more in the event that income falls short of expenditures, thereby allowing time for policy makers to devise and implement legislative corrections. Thus, while the short-range test is stringent, it is intended to ensure that health care benefits continue to be available without interruption to the millions of aged and disabled Americans who rely on such coverage.

### 3. 75-Year Actuarial Estimates (2002-2076)

In section II.B2, HI expected operations over the next 10 years were presented. In this section, the long-range actuarial status of the trust fund is examined under the three alternative sets of assumptions. The assumptions used in preparing projections are summarized in section III.A of this report.

The long-range actuarial status of the HI trust fund is measured by comparing, on a year-by-year basis, the income (from payroll taxes and from taxation of OASDI benefits) with the corresponding incurred costs, expressed as percentages of taxable payroll.[11] These percentages are referred to as "income rates" and "cost rates," respectively. For this purpose, both income and costs are projected under present law.

The historical HI costs, expressed as percentages of taxable payroll, are shown in table II.B9. The ratio of expenditures to taxable payroll has generally increased over time, rising from 0.94 percent in 1967 to 3.40 percent in 1996 and reflecting both the higher rate of increase in medical care costs than in average earnings subject to HI taxes, and the more rapid increase in the number of HI beneficiaries than in the number of covered workers. Cost rates declined significantly between 1996 and 2000 to 2.64 percent in 2000, due to favorable economic performance, the impact of the Balanced Budget Act of 1997, and efforts to curb fraud and abuse in the Medicare program. The cost rate increased to 2.69 in 2001 as a result of the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000.

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[11]Taxable payroll is the total amount of wages, salaries, tips, self-employment income, and other earnings subject to the HI payroll tax. Only incurred expenditures (benefits and administrative costs) attributable to insured beneficiaries are considered, since expenditures for noninsured persons are expected to be financed through general revenue transfers and premium payments rather than through payroll taxes.

*Actuarial Analysis*

The projected HI costs under the intermediate assumptions, expressed as percentages of taxable payroll, and the income rates under current law for selected years over the 75-year period 2002-2076, are shown in table II.B10. Further increases in the ratio of expenditures to taxable payroll under the intermediate assumptions result from the projection that HI costs will generally continue to increase at a higher rate than taxable earnings, as discussed in section III.A. An important exception is expected for 2003, when the Balanced Budget Act of 1997 and subsequent legislation will substantially reduce the rate of growth in HI expenditures. After 2015, as can be seen from the selected years shown in table II.B10, on a year-by-year basis the income rates under current law are projected to be insufficient, by a growing margin, to support the projected costs. By the end of the long-range projection period, HI tax income is estimated to cover less than one-third of the cost. As a result, the trust fund is seriously out of financial balance in the long range, and substantial measures will be required to increase revenues and/or reduce expenditures.

**Table II.B9.—Historical HI Cost Rates**

| Calendar year | Cost rates[1] |
|---|---|
| 1967 | 0.94% |
| 1968 | 1.04 |
| 1969 | 1.12 |
| 1970 | 1.20 |
| 1971 | 1.32 |
| 1972 | 1.30 |
| 1973 | 1.33 |
| 1974 | 1.42 |
| 1975 | 1.69 |
| 1976 | 1.83 |
| 1977 | 1.95 |
| 1978 | 2.00 |
| 1979 | 1.99 |
| 1980 | 2.19 |
| 1981 | 2.39 |
| 1982 | 2.65 |
| 1983 | 2.67[2] |
| 1984 | 2.63 |
| 1985 | 2.62 |
| 1986 | 2.54 |
| 1987 | 2.51 |
| 1988 | 2.40 |
| 1989 | 2.62 |
| 1990 | 2.69 |
| 1991 | 2.65 |
| 1992 | 2.92 |
| 1993 | 3.09 |
| 1994 | 3.15 |
| 1995 | 3.25 |
| 1996 | 3.40 |
| 1997 | 3.36 |
| 1998 | 2.99 |
| 1999 | 2.77 |
| 2000 | 2.64 |
| 2001 | 2.69 |

[1]Estimated costs attributable to insured beneficiaries only, on an incurred basis. Benefits and administrative costs for noninsured persons are expected to be financed through general revenue transfers and premium payments, rather than through payroll taxes. Gratuitous credits for military service after 1956 are included in taxable payroll.

[2]Deemed credits for military service before 1984 were attributed to the year in which the service had occurred. If all such credits had been attributed in 1983, HI expenditures in 1983 would have been lower by 0.18 percent of taxable payroll.

**Table II.B10.—Projected HI Cost and Income Rates[1]**

| Calendar year | Cost rates[2] | Income rates | Difference[3] |
|---|---|---|---|
| 2002 | 2.75% | 3.06% | +0.32% |
| 2003 | 2.65 | 3.07 | +0.41 |
| 2004 | 2.66 | 3.07 | +0.41 |
| 2005 | 2.67 | 3.07 | +0.40 |
| 2006 | 2.68 | 3.07 | +0.39 |
| 2007 | 2.70 | 3.07 | +0.38 |
| 2008 | 2.73 | 3.08 | +0.35 |
| 2009 | 2.77 | 3.09 | +0.33 |
| 2010 | 2.81 | 3.10 | +0.29 |
| 2011 | 2.86 | 3.13 | +0.27 |
| 2015 | 3.12 | 3.16 | +0.04 |
| 2020 | 3.59 | 3.22 | -0.38 |
| 2025 | 4.19 | 3.27 | -0.92 |
| 2030 | 4.89 | 3.32 | -1.58 |
| 2035 | 5.58 | 3.34 | -2.24 |
| 2040 | 6.18 | 3.34 | -2.84 |
| 2045 | 6.70 | 3.35 | -3.35 |
| 2050 | 7.16 | 3.35 | -3.81 |
| 2055 | 7.64 | 3.36 | -4.27 |
| 2060 | 8.22 | 3.38 | -4.84 |
| 2065 | 8.92 | 3.39 | -5.53 |
| 2070 | 9.74 | 3.40 | -6.34 |
| 2075 | 10.61 | 3.41 | -7.19 |

[1]Under the intermediate assumptions.
[2]See footnote 1 of table II.B9.
[3]Difference between the income rates and cost rates. Negative values represent deficits.

While year-by-year comparisons are necessary to measure the adequacy of HI financing, the financial status of the trust fund is often summarized, over a specific valuation period, by a single measure known as the actuarial balance. The actuarial balance of the HI trust fund is defined as the difference between the summarized income rate for the valuation period and the summarized cost rate for the same period.

The summarized income rates, cost rates, and actuarial balance are based upon the present values of future income on an incurred basis, future insured costs on an incurred basis, and future taxable payroll. The present values are calculated, as of the beginning of the valuation period, by discounting the future annual amounts of income and outgo at the assumed rates of interest credited to the HI trust fund. The summarized income and cost rates over the projection period are then obtained by dividing the present value of income and cost, respectively, by the present value of taxable payroll. The difference between the summarized income rate and cost rate over the long-range projection period, after an adjustment to take into account the fund balance at the valuation date and a target trust fund balance at the end of the valuation period, is the actuarial balance.

In keeping with a decision by the Board of Trustees that it is advisable to maintain a balance in the trust fund equal to a minimum of 1 year's expenditures, the target trust fund balance is equal to the following year's estimated costs at the end of the 75-year projection period. It should be noted that projecting an end-of-period target trust fund balance does not necessarily insure that the trust fund will maintain such a balance on a year-by-year basis.

The actuarial balance can be interpreted as the immediate, level, and permanent percentage that must be added to the current-law income rates and/or subtracted from the current-law cost rates throughout the entire valuation period in order for the financing to support HI costs and provide for the targeted trust fund balance at the end of the projection period. The income rate increase according to this method is 2.02 percent of taxable payroll. However, if no changes were made until the year the trust fund would be exhausted, then the required increase would be 4.09 percent of taxable payroll under the intermediate assumptions. If changes were instead made year by year, as needed to balance each year's costs and tax revenues, then the changes would be minimal through about 2020, but would grow rapidly thereafter to more than 7 percent of taxable payroll by the end of the projection period.

The actuarial balances under all three alternative sets of assumptions, for the next 25, 50, and 75 years, as well as for each 25-year subperiod, are shown in table II.B11. The summarized income rate for the entire 75-year period under the intermediate assumptions is 3.34 percent of taxable payroll. The summarized HI cost under the intermediate assumptions, for the entire 75-year period, is 5.36 percent. As a result, the HI trust fund fails to meet the Trustees' long-range test of close actuarial balance by a wide margin. (Section IV.E contains a summary of the requirements of this test.)

**Table II.B11.—HI Actuarial Balances, under Three Sets of Assumptions**

| | Intermediate assumptions | Alternative | |
|---|---|---|---|
| | | Low Cost | High Cost |
| Valuation periods:[1] | | | |
| 25 years, 2002-2026: | | | |
| Summarized income rate | 3.33% | 3.31% | 3.36% |
| Summarized cost rate | 3.32 | 2.54 | 4.43 |
| Actuarial balance | 0.01 | 0.77 | -1.07 |
| 50 years, 2002-2051: | | | |
| Summarized income rate | 3.33 | 3.29 | 3.38 |
| Summarized cost rate | 4.39 | 2.75 | 7.47 |
| Actuarial balance | -1.06 | 0.54 | -4.09 |
| 75 years, 2002-2076: | | | |
| Summarized income rate | 3.34 | 3.29 | 3.42 |
| Summarized cost rate | 5.36 | 3.09 | 9.89 |
| Actuarial balance | -2.02 | 0.20 | -6.47 |
| 25-year subperiods:[2] | | | |
| 2002-2026: | | | |
| Summarized income rate | 3.15 | 3.13 | 3.17 |
| Summarized cost rate | 3.17 | 2.45 | 4.18 |
| Actuarial balance | -0.02 | 0.68 | -1.00 |
| 2027-2051: | | | |
| Summarized income rate | 3.34 | 3.27 | 3.42 |
| Summarized cost rate | 5.90 | 3.05 | 11.44 |
| Actuarial balance | -2.56 | 0.22 | -8.02 |
| 2052-2076: | | | |
| Summarized income rate | 3.38 | 3.27 | 3.55 |
| Summarized cost rate | 8.77 | 4.21 | 18.22 |
| Actuarial balance | -5.38 | -0.93 | -14.67 |

[1]Income rates include beginning trust fund balances, and cost rates include the cost of attaining a trust fund balance at the end of the period equal to 100 percent of the following year's estimated expenditures.
[2]Income rates do not include beginning trust fund balances, and cost rates do not include the cost of attaining a non-zero trust fund balance at the end of the period.

Notes: 1. Cost rates are based on HI expenditures incurred for benefit payments and administrative costs for insured beneficiaries, computed on a present-value basis and expressed as a percentage of taxable payroll. The difference between the summarized income rate and the summarized cost rate is termed the actuarial balance.
2. Totals do not necessarily equal the sums of rounded components.

The divergence in outcomes among the three alternatives is reflected both in the estimated operations of the trust fund on a cash basis (as discussed in section II.B2) and in the 75-year summarized costs. The variations in the underlying assumptions can be characterized as (1) moderate in terms of magnitude of the differences on a year-by-year basis, and (2) persistent over the duration of the projection period. Under the low cost alternative, the summarized cost rate for the 75-year valuation period is 3.09 percent of taxable payroll, and the summarized income rate is 3.29 percent of taxable payroll; hence, HI income rates provided in current law would be adequate under the low cost alternative. Under the high cost alternative, the summarized cost rate for the 75-year projection

period is 9.89 percent of taxable payroll, almost three times the summarized income rate of 3.42 percent of taxable payroll.

Past experience has indicated that economic and demographic conditions that are as financially adverse as those assumed under the high cost alternative can, in fact, occur. None of the alternative projections should be viewed as unlikely or unrealistic. The wide range of results under the three alternatives is indicative of the uncertainty of HI's future cost and its sensitivity to future economic and demographic conditions. Accordingly, it is important that an adequate balance be maintained in the HI trust fund, as a reserve for contingencies, and that financial imbalances be addressed promptly through corrective legislation.

A valuation period of 75 years is needed to fully present the future developments that may reasonably be expected to occur, such as the impact of the large shift in the demographic composition of the population that will take place beginning in the next decade. As table II.B10 indicates, estimated HI expenditures, expressed as percentages of taxable payroll, increase rapidly beginning around 2010. This rapid increase in costs occurs in part because the relatively large number of persons born during the period between the end of World War II and the mid-1960s (known as the baby boom) will reach eligibility age and begin to receive benefits, while the relatively smaller number of persons born during later years will comprise the labor force. During the last 25 years of the projection period, the projected demographic impacts stabilize somewhat.[12]

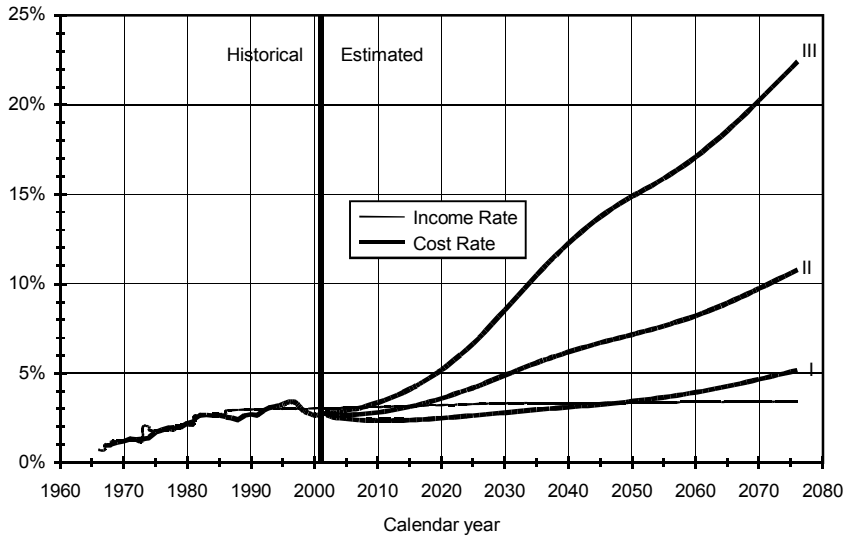
Costs beyond the initial 25-year projection period for the intermediate estimate are based upon the assumption that average HI expenditures per beneficiary will increase at a rate of 1 percent greater than the Gross Domestic Product (GDP) per capita. Therefore, changes in the next 50 years of the projection period reflect both the impact of the changing demographic composition of the population and average benefits that increase more rapidly than average wages. Beyond the initial 25-year projection period, the low cost and high cost alternatives assume that HI cost increases, relative to taxable payroll increases, are initially 2 percent less rapid and 2 percent more rapid, respectively, than the results under the intermediate assumptions. The initial 2-percent differentials are assumed to

[12]HI costs as a percentage of taxable payroll are projected to continue to increase due to demographic changes, reflecting assumed further improvements in life expectancy and assumed birth rates that are at roughly the same level as those experienced during the last 2 decades.

gradually decrease until the year 2051, when HI cost increases (relative to taxable payroll) are assumed to be the same as under the intermediate assumptions.

Figure II.B3 shows the year-by-year costs as a percentage of taxable payroll for each of the three sets of assumptions, as well as the projected income rates. The income rates are shown only for the intermediate assumptions in order to simplify the graphical presentation—and because the variation in the income rates by alternative is very small (by 2076, the annual income rates under the low cost and high cost alternatives differ by only about 0.4 percent of taxable payroll). Figure II.B3 illustrates the magnitude of the projected HI financial imbalance by displaying the divergence of the costs and income rates under each set of assumptions. The labels "I," "II," and "III" indicate projections under the low cost, intermediate, and high cost alternatives, respectively.

**Figure II.B3.—Estimated HI Cost and Income Rates as a Percentage of Taxable Payroll**




The 75-year HI actuarial balance, under the intermediate assumptions, is estimated to be –2.02 percent of taxable payroll, as shown in table II.B11. The actuarial balance under the intermediate assumptions as reported in the 2001 annual report was –1.97 percent. The major reasons for the change in the 75-year actuarial balance are summarized in table II.B12. In more detail, these changes consist of the following:

(1) Change in valuation period: Changing the valuation period from 2001-2075 to 2002-2076 adds a large deficit year to the calculation of the actuarial balance. The effect on the actuarial balance is –0.08 percent of taxable payroll.

(2) Updating the projection base: The cost as a percentage of payroll for 2001 was slightly less than estimated in last year's report. In the absence of other changes, starting the projection from the lower actual cost rate in 2001 results in a permanently lower level of projected costs and lower level of projected income, with an average improvement in the actuarial balance of +0.01 percent of taxable payroll.

(3) Managed care assumptions: Reductions in the projected levels of managed care enrollment result in a +0.01 percent change in the actuarial balance. Under the current reimbursement mechanism for Medicare+Choice plans, even with implementation of improved risk adjustment methods, reimbursement for managed care enrollees is estimated to somewhat exceed their average fee-for-service costs. This estimated loss to the HI trust fund is reduced because of the lower enrollment assumption.

(4) Hospital assumptions: Changes in the hospital assumptions described in the next section result in a –0.03 percent change in the actuarial balance. The primary assumption contributing to this change is slightly faster assumed growth in hospital prices for the next 4 years relative to the assumptions in last year's report.

(5) Other provider assumptions: Changes to the non-hospital provider utilization and price assumptions result in a –0.06 percent change in the actuarial balance. The primary factor is a higher assumed percentage of home health agency services covered by HI, rather than by SMI.

(6) Economic and demographic assumptions: Changes in the economic and demographic assumptions described in the next section result in a +0.05 percent improvement in the actuarial balance. The economic assumption changes include an increase in the ultimate real-wage growth rates, which increase the present value of taxable payroll.[13]

(7) Benefit tax projections: Revised estimates of HI revenues from the income taxation of Social Security benefits result

[13]Increased wages also increase HI expenditures, but to a lesser extent than taxable payroll.

in an increase in projected revenues after 2010, relative to those shown in last year's report. This change improves the actuarial balance by +0.05 percent of taxable payroll.

**Table II.B12.—Change in the 75-Year Actuarial Balance since the 2001 Report**

| | |
|---|---|
| 1. Actuarial balance, intermediate assumptions, 2001 report | -1.97% |
| 2. Changes: | |
| a. Valuation period | -0.08 |
| b. Base estimate | +0.01 |
| c. Managed care assumptions | +0.01 |
| d. Hospital assumptions | -0.03 |
| e. Other provider assumptions | -0.06 |
| f. Economic and demographic assumptions | +0.05 |
| g. Benefit tax projection | +0.05 |
| Net effect, above changes | -0.05 |
| 3. Actuarial balance, intermediate assumptions, 2002 report | -2.02 |

## 4. Long-Range HI Sensitivity Analysis

This section presents estimates that illustrate the sensitivity of the long-range cost rate and actuarial balance of HI to changes in selected individual assumptions. The estimates based on the three alternative sets of assumptions (that is, intermediate, low cost, and high cost) demonstrate the effects of varying all of the principal assumptions simultaneously in order to portray a generally more optimistic or pessimistic future, in terms of the projected financial status of the HI trust fund. In the sensitivity analysis presented in this section, the intermediate set of assumptions is used as the reference point, and one assumption at a time is varied within that alternative. Similar variations in the selected assumptions within the other alternatives would result in similar variations in the long-range estimates.

Each table that follows shows the effects of changing a particular assumption on the HI summarized income rates, summarized cost rates, and actuarial balances (as defined earlier in this report) for 25-year, 50-year, and 75-year valuation periods. Because the income rate varies only slightly with changes in assumptions, it is not considered in the discussion of the tables. The change in each of the actuarial balances is approximately equal to the change in the corresponding cost rate, but in the opposite direction. For example, a lower projected cost rate would result in an improvement in the corresponding projected actuarial balance.

### *a. Real-Wage Differential*

Table II.B13 shows the estimated HI income rates, cost rates, and actuarial balances on the basis of the intermediate assumptions, with various assumptions about the real-wage differential. These assumptions are that the ultimate real-wage differential will be 0.6 percentage point (as assumed for the high cost alternative), 1.1 percentage point (as assumed for the intermediate assumptions), and 1.6 percentage points (as assumed for the low cost alternative). In each case, the ultimate annual increase in the Consumer Price Index (CPI) is assumed to be 3.0 percent (as assumed for the intermediate assumptions), yielding ultimate percentage increases in average annual wages in covered employment of 3.6, 4.1, and 4.6 percent under the three illustrations, respectively.

Past increases in real earnings have exhibited substantial variation. During 1951-1970, real earnings grew by an average of 2.2 percent per year. During 1972-1996, however, the average annual increase in real earnings amounted to only 0.53 percent.[14] The possibility of continuing poor performance in real-wage growth is a matter of some concern to analysts and policy makers; thus, the sensitivity of HI costs to future real-wage growth is important. As shown in table II.B13, projected HI costs are, in fact, fairly sensitive to the assumed growth rates in real wages. For the 75-year period 2002-2076, the summarized cost rate decreases from 5.60 percent (for a real-wage differential of 0.6 percentage point) to 5.15 percent (for a differential of 1.6 percentage points). The HI actuarial balance over this period shows a corresponding improvement for faster rates of growth in real wages.

[14]This period was chosen because it begins and ends with years in which the economy reached full employment. The period thus allows measurement of trend growth over complete economic cycles.

**Table II.B13.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Real-Wage Assumptions**

[As a percentage of taxable payroll]

| Valuation period | Ultimate percentage increase in wages-CPI[1] | | |
|---|---|---|---|
| | 3.6-3.0 | 4.1-3.0 | 4.6-3.0 |
| Summarized income rate: | | | |
| 25-year: 2002-2026 | 3.36 | 3.33 | 3.31 |
| 50-year: 2002-2051 | 3.37 | 3.33 | 3.31 |
| 75-year: 2002-2076 | 3.39 | 3.34 | 3.32 |
| Summarized cost rate: | | | |
| 25-year: 2002-2026 | 3.42 | 3.32 | 3.25 |
| 50-year: 2002-2051 | 4.58 | 4.39 | 4.25 |
| 75-year: 2002-2076 | 5.60 | 5.36 | 5.15 |
| Actuarial balance: | | | |
| 25-year: 2002-2026 | -0.06 | 0.01 | 0.07 |
| 50-year: 2002-2051 | -1.21 | -1.06 | -0.95 |
| 75-year: 2002-2076 | -2.22 | -2.02 | -1.84 |

[1]The first value in each pair is the assumed ultimate annual percentage increase in average wages in covered employment. The second value is the assumed ultimate annual percentage increase in the CPI. The difference between the two values is the real-wage differential.

The sensitivity of the HI actuarial balance to different real-wage assumptions is significant, but not as substantial as one might intuitively expect. Higher real-wage differentials immediately increase both HI expenditures for health care and wages for all workers. Though there is a full effect on wages and payroll taxes, the effect on benefits is only partial, since not all health care costs are wage-related. Thus, the HI cost rate decreases with increasing real-wage differentials, because the higher real-wage levels increase the taxable payroll to a greater extent than they increase HI benefits. In particular, each 0.5-percentage-point increase in the assumed real-wage differential increases the long-range HI actuarial balance, on average, by about 0.19 percent of taxable payroll.

### *b. Consumer Price Index*

Table II.B14 shows the estimated HI income rates, cost rates, and actuarial balances on the basis of the intermediate alternative, with various assumptions about the rate of increase for the CPI. These assumptions are that the ultimate annual increase in the CPI will be 2.0 percent (as assumed for the low cost alternative), 3.0 percent (as assumed for the intermediate assumptions), and 4.0 percent (as assumed for the high cost alternative). In each case, the ultimate real-wage differential is assumed to be 1.1 percent (as assumed for the intermediate assumptions), yielding ultimate percentage increases in average annual wages in covered employment of 3.1, 4.1, and 5.1 percent under the three illustrations.

**Table II.B14.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various CPI-Increase Assumptions**

[As a percentage of taxable payroll]

| Valuation period | Ultimate percentage increase in wages-CPI[1] | | |
|---|---|---|---|
| | 3.1-2.0 | 4.1-3.0 | 5.1-4.0 |
| Summarized income rate: | | | |
| 25-year: 2002-2026 | 3.34 | 3.33 | 3.31 |
| 50-year: 2002-2051 | 3.34 | 3.33 | 3.31 |
| 75-year: 2002-2076 | 3.35 | 3.34 | 3.32 |
| Summarized cost rate: | | | |
| 25-year: 2002-2026 | 3.32 | 3.32 | 3.31 |
| 50-year: 2002-2051 | 4.42 | 4.39 | 4.37 |
| 75-year: 2002-2076 | 5.40 | 5.36 | 5.32 |
| Actuarial balance: | | | |
| 25-year: 2002-2026 | 0.01 | 0.01 | 0.00 |
| 50-year: 2002-2051 | -1.08 | -1.06 | -1.06 |
| 75-year: 2002-2076 | -2.04 | -2.02 | -2.01 |

[1]The first value in each pair is the assumed ultimate annual percentage increase in average wages in covered employment. The second value is the assumed ultimate annual percentage increase in the CPI.

For all three periods, the cost rate decreases slightly with greater assumed rates of increase in the CPI. Over the 75-year projection period, for example, the cost rate decreases from 5.40 percent (for CPI increases of 2.0 percent) to 5.32 percent (for CPI increases of 4.0 percent). The relative insensitivity of projected HI cost rates to different levels of general inflation occurs because inflation is assumed to affect both the taxable payroll of workers and medical care costs about equally.[15] In practice, differing rates of inflation could occur between the economy in general and the medical-care sector. The effect of such a difference can be judged from the sensitivity analysis shown in the subsequent section on miscellaneous health care cost factors. The effect of each 1.0-percentage-point increase in the rate of change assumed for the CPI is an increase in the long-range actuarial balance of about 0.02 percent of taxable payroll, on average.

### *c. Real-Interest Rate*

Table II.B15 shows the estimated HI income rates, cost rates, and actuarial balances under the intermediate alternative, with various assumptions about the annual real-interest rate for special public-debt obligations issuable to the trust fund. These assumptions are that the ultimate annual real-interest rate will be 2.2 percent (as assumed for the high cost alternative), 3.0 percent (as assumed for the intermediate assumptions), and 3.7 percent (as assumed for the

[15]The slight sensitivity shown in the table results primarily from the fact that the fiscal year 2002 payment rates for all providers have already been set. If the 2002 payments were allowed to be affected by CPI changes, there would be no projected effect due to these changes.

low cost alternative). In each case, the ultimate annual increase in the CPI is assumed to be 3.0 percent (as assumed for the intermediate assumptions), resulting in ultimate annual yields of 5.2, 6.0, and 6.7 percent under the three illustrations.

**Table II.B15.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Real-Interest Assumptions**

[As a percentage of taxable payroll]

| Valuation period | Ultimate annual real-interest rate | | |
|---|---|---|---|
| | 2.2 percent | 3.0 percent | 3.7 percent |
| Summarized income rate: | | | |
| 25-year: 2002-2026 | 3.32 | 3.33 | 3.34 |
| 50-year: 2002-2051 | 3.33 | 3.33 | 3.34 |
| 75-year: 2002-2076 | 3.34 | 3.34 | 3.35 |
| Summarized cost rate: | | | |
| 25-year: 2002-2026 | 3.36 | 3.32 | 3.29 |
| 50-year: 2002-2051 | 4.60 | 4.39 | 4.26 |
| 75-year: 2002-2076 | 5.82 | 5.36 | 5.08 |
| Actuarial balance: | | | |
| 25-year: 2002-2026 | -0.04 | 0.01 | 0.05 |
| 50-year: 2002-2051 | -1.27 | -1.06 | -0.93 |
| 75-year: 2002-2076 | -2.47 | -2.02 | -1.73 |

For all periods, the cost rate decreases with increasing real-interest rates. Over 2002-2076, for example, the summarized HI cost rate would decline from 5.82 percent (for an ultimate real-interest rate of 2.2 percent) to 5.08 percent (for an ultimate real-interest rate of 3.7 percent). Thus, each 1.0-percentage-point increase in the assumed real-interest rate increases the long-range actuarial balance, on average, by about 0.49 percent of taxable payroll. The fact that the HI actuarial balance is sensitive to the interest assumption is not an indication of the actual role that interest plays in the financing. In reality, interest finances very little of the HI cost. The sensitivity of the actuarial balance to the interest assumption is implicit in the present-value method used to determine the actuarial balance, since the present-value calculations are very sensitive to the interest rates used to discount future amounts to their present equivalent values.

### *d. Health Care Cost Factors*

Table II.B16 shows the estimated HI income rates, cost rates, and actuarial balances on the basis of the intermediate set of assumptions, with two variations on the relative annual growth rate in the aggregate cost of providing covered health care services to HI beneficiaries. These assumptions are that the ultimate annual growth rate in such costs, relative to the growth in taxable payroll, will be 1 percent slower than the intermediate assumption, the same as the intermediate assumption, and 1 percent faster than the intermediate

assumption. In each case, the taxable payroll will be the same as assumed for the intermediate assumptions.

As noted previously, factors such as wage and price increases may simultaneously affect both HI tax income and the costs incurred by hospitals and other providers of medical care to HI beneficiaries. (The sensitivity of the trust fund's financial status to these factors is evaluated in sections II.B4a and II.B4b.) Other factors, such as the utilization of services by beneficiaries or the relative complexity of the services provided, can affect provider costs without affecting HI tax income. The sensitivity analysis shown in table II.B16 illustrates the financial effect of any combination of these factors that results in aggregate provider costs increasing by 1 percentage point faster or slower than the intermediate assumptions, relative to growth in taxable payroll under the intermediate assumptions.

**Table II.B16.—Estimated HI Income Rates, Cost Rates, and Actuarial Balances, Based on Intermediate Estimates with Various Health Care Cost Growth Rate Assumptions**

[As a percentage of taxable payroll]

| | Annual cost/payroll relative growth rate | | |
|---|---|---|---|
| Valuation period | -1 percentage point | 0 percentage point | +1 percentage point |
| Summarized income rate: | | | |
| 25-year: 2002-2026 | 3.33 | 3.33 | 3.33 |
| 50-year: 2002-2051 | 3.33 | 3.33 | 3.33 |
| 75-year: 2002-2076 | 3.34 | 3.34 | 3.34 |
| Summarized cost rate: | | | |
| 25-year: 2002-2026 | 2.89 | 3.32 | 3.82 |
| 50-year: 2002-2051 | 3.37 | 4.39 | 5.84 |
| 75-year: 2002-2076 | 3.62 | 5.36 | 8.00 |
| Actuarial balance: | | | |
| 25-year: 2002-2026 | 0.43 | 0.01 | -0.48 |
| 50-year: 2002-2051 | -0.04 | -1.06 | -2.50 |
| 75-year: 2002-2076 | -0.28 | -2.02 | -4.66 |

As illustrated in table II.B16, the financial status of the HI trust fund is extremely sensitive to the relative growth rates for health care service costs versus taxable payroll. For the 75-year period, the cost rate increases from 3.62 percent (for an annual cost/payroll growth rate of 1 percentage point less than the intermediate assumptions) to 8.00 percent (for an annual cost/payroll growth rate of 1 percentage point more than the intermediate assumptions). Each 1.0-percentage-point increase in the assumed cost/payroll relative growth rate decreases the long-range actuarial balance, on average, by about 2.19 percent of taxable payroll.

## *C. SMI Financial Status*

### 1. SMI Financial Operations in Fiscal Year 2001

The Federal Supplementary Medical Insurance Trust Fund was established on July 30, 1965 as a separate account in the U.S. Treasury. All the financial operations of SMI are handled through this fund.

A statement of the revenue and expenditures of the SMI trust fund in fiscal year 2001, and of the fund's assets at the beginning and end of the fiscal year, is presented in table II.C1.

**Table II.C1.—Statement of Operations of the SMI Trust Fund during Fiscal Year 2001**
[In thousands]

| | | |
|---|---|---|
| Total assets of the trust fund, beginning of period | | $45,895,505 |
| Revenue: | | |
| Premiums from enrollees: | | |
| Enrollees aged 65 and over | $19,446,788 | |
| Disabled enrollees under age 65 | 2,860,574 | |
| Total premiums | | 22,307,362 |
| Government contributions: | | |
| Enrollees aged 65 and over | 57,982,337 | |
| Disabled enrollees under age 65 | 11,855,803 | |
| Total Government contributions | | 69,838,141 |
| Other | | 3,458 |
| Interest: | | |
| Interest on investments | 3,187,827 | |
| Interest on amounts of interfund transfers[1] | -687 | |
| Total interest | | 3,187,140 |
| Total revenue | | 95,336,101 |
| Expenditures: | | |
| Net benefit payments | | 97,466,033 |
| Administrative expenses: | | |
| Medicaid Part B Premium | 59,784 | |
| Treasury administration expenses | 379 | |
| Salaries and expenses, CMS[2] | 1,424,950 | |
| Salaries and expenses, Office of the Secretary, HHS | 1,756 | |
| Salaries and expenses, SSA | 491,219 | |
| Medicare Payment Advisory Commission | 3,200 | |
| Railroad Retirement administrative expenses | 4,497 | |
| Total administrative expenses | | 1,985,783 |
| Total expenditures | | 99,451,816 |
| Net addition to the trust fund | | -4,115,715 |
| Total assets of the trust fund, end of period | | 41,779,790 |

[1]A positive figure represents a transfer of interest to the SMI trust fund from the other trust funds. A negative figure represents a transfer of interest from the SMI trust fund to the other trust funds.
[2]Includes administrative expenses of the carriers and intermediaries.

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

The total assets of the trust fund amounted to $45,896 million on September 30, 2000. During fiscal year 2001, total revenue amounted to $95,336 million, and total expenditures were $99,452 million. Total assets thus decreased $4.1 billion during the year, to $41,780 million as of September 30, 2001.

The decline in assets occurred as part of an intentional effort to reduce the size of the SMI trust fund to a more appropriate level for a contingency reserve. Beneficiary premiums and general fund contributions for 2001 were purposely set slightly below normal levels in an effort to gradually adjust asset levels, following their rapid accumulation in recent years.

***a. Revenues***

The major sources of revenue of the SMI trust fund are (1) contributions of the federal government that are authorized to be appropriated and transferred from the general fund of the treasury, and (2) premiums paid by eligible persons who are voluntarily enrolled. Eligible persons aged 65 and over have been able to enroll in SMI since its inception in July 1966. Since July 1973, disabled persons who are under age 65 and who have met certain eligibility requirements have also been able to enroll.

Of the total SMI revenue, $22,307 million represented premium payments by (or on behalf of) aged and disabled enrollees—an increase of 8.7 percent over the amount of $20,515 million for the preceding year. This increase resulted from the growth of the number of persons enrolled in SMI and the increase in the SMI premium to $50.00 for 2001.

Premiums paid for fiscal years 1967 through 1973 were matched by an equal amount of government contributions. Beginning July 1973, the amount of government contributions corresponding to premiums paid by each of the two groups of enrollees is determined by applying a "matching ratio," prescribed in the law for each group, to the amount of premiums received from that group. The ratio is equal to (1) twice the monthly actuarial rate applicable to the particular group of enrollees, minus the standard monthly premium rate, divided by (2) the standard monthly premium rate.

Standard monthly premium rates and actuarial rates are promulgated each year by the Secretary of Health and Human Services. Past monthly premium rates and actuarial rates are shown

in table II.C2, together with the corresponding percentages of SMI costs covered by the premium rate. Estimated future premium amounts under the intermediate set of assumptions appear in section IV.C.

**Table II.C2.—Standard Monthly Premium Rates, Actuarial Rates, and Premium Rates as a Percentage of SMI Cost**

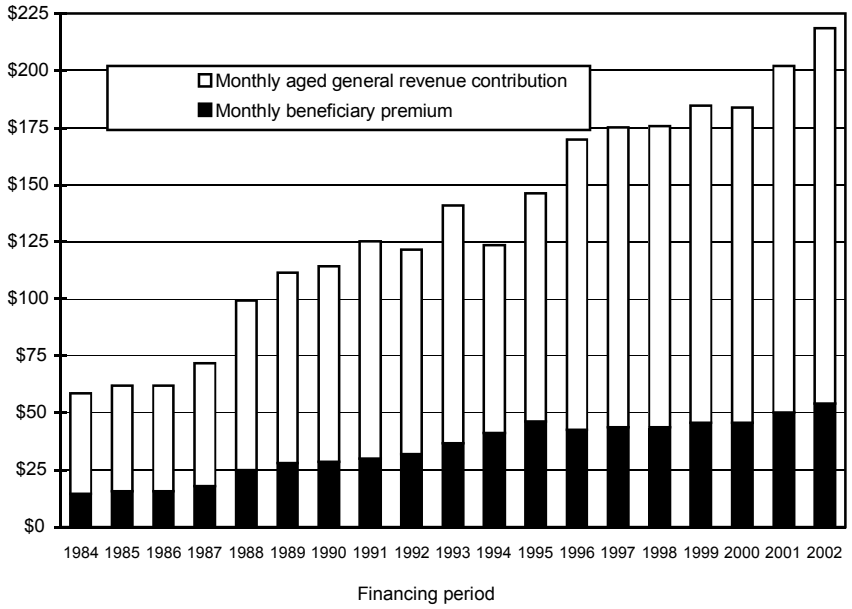
| | | Monthly actuarial rate | | Premium rates as a percentage of SMI cost | |
|---|---|---|---|---|---|
| | Standard monthly premium rate | Enrollees aged 65 and over | Disabled enrollees under age 65 | Enrollees aged 65 and over | Disabled enrollees under age 65 |
| July 1966-March 1968 | $3.00 | — | — | 50.0% | — |
| April 1968-June 1970 | 4.00 | — | — | 50.0 | — |
| 12-month period ending June 30 of | | | | | |
| 1971 | 5.30 | — | — | 50.0 | — |
| 1972 | 5.60 | — | — | 50.0 | — |
| 1973 | 5.80 | — | — | 50.0 | — |
| 1974[1] | 6.30 | $6.30 | $14.50 | 50.0 | 21.7% |
| 1975 | 6.70 | 6.70 | 18.00 | 50.0 | 18.6 |
| 1976 | 6.70 | 7.50 | 18.50 | 44.7 | 18.1 |
| 1977 | 7.20 | 10.70 | 19.00 | 33.6 | 18.9 |
| 1978 | 7.70 | 12.30 | 25.00 | 31.3 | 15.4 |
| 1979 | 8.20 | 13.40 | 25.00 | 30.6 | 16.4 |
| 1980 | 8.70 | 13.40 | 25.00 | 32.5 | 17.4 |
| 1981 | 9.60 | 16.30 | 25.50 | 29.4 | 18.8 |
| 1982 | 11.00 | 22.60 | 36.60 | 24.3 | 15.0 |
| 1983 | 12.20 | 24.60 | 42.10 | 24.8 | 14.5 |
| July 1983-December 1983 | 12.20 | 27.00 | 46.10 | 22.6 | 13.2 |
| Calendar year | | | | | |
| 1984 | 14.60 | 29.20 | 54.30 | 25.0 | 13.4 |
| 1985 | 15.50 | 31.00 | 52.70 | 25.0 | 14.7 |
| 1986 | 15.50 | 31.00 | 40.80 | 25.0 | 19.0 |
| 1987 | 17.90 | 35.80 | 53.00 | 25.0 | 16.9 |
| 1988 | 24.80 | 49.60 | 48.60 | 25.0 | 25.5 |
| 1989 | 31.90[2] | 55.80 | 34.30 | 25.0[3] | 40.7[3] |
| 1990 | 28.60 | 57.20 | 44.10 | 25.0 | 32.4 |
| 1991 | 29.90 | 62.60 | 56.00 | 23.9 | 26.7 |
| 1992 | 31.80 | 60.80 | 80.80 | 26.2 | 19.7 |
| 1993 | 36.60 | 70.50 | 82.90 | 26.0 | 22.1 |
| 1994 | 41.10 | 61.80 | 76.10 | 33.3 | 27.0 |
| 1995 | 46.10 | 73.10 | 105.80 | 31.5 | 21.8 |
| 1996 | 42.50 | 84.90 | 105.10 | 25.0 | 20.2 |
| 1997 | 43.80 | 87.60 | 110.40 | 25.0 | 19.8 |
| 1998 | 43.80 | 87.90 | 97.10 | 24.9 | 22.6 |
| 1999 | 45.50 | 92.30 | 103.00 | 24.6 | 22.1 |
| 2000 | 45.50 | 91.90 | 121.10 | 24.8 | 18.8 |
| 2001 | 50.00 | 101.00 | 132.20 | 24.8 | 18.9 |
| 2002 | 54.00 | 109.30 | 123.10 | 24.7 | 21.9 |

[1]In accordance with limitations on the costs of health care imposed under Phase III of the Economic Stabilization program, the standard premium rates for July and August 1973 were set at $5.80 and $6.10, respectively. Effective September 1973, the rate increased to $6.30.
[2]This rate includes the $4.00 catastrophic coverage monthly premium that was paid by most enrollees under the Medicare Catastrophic Coverage Act of 1988 (subsequently repealed).
[3]The premium rates as a percentage of SMI cost for calendar year 1989 apply to the non-catastrophic portion of the standard monthly premium rate.

Figures II.C1 and II.C2 are graphic representations of the monthly per capita financing rates, for financing periods since 1983, for enrollees aged 65 and over and for disabled individuals under age 65, respectively. The graphs show the portion of the financing contributed by the beneficiaries and by general revenues. As indicated, general revenue financing is the major source of SMI income.

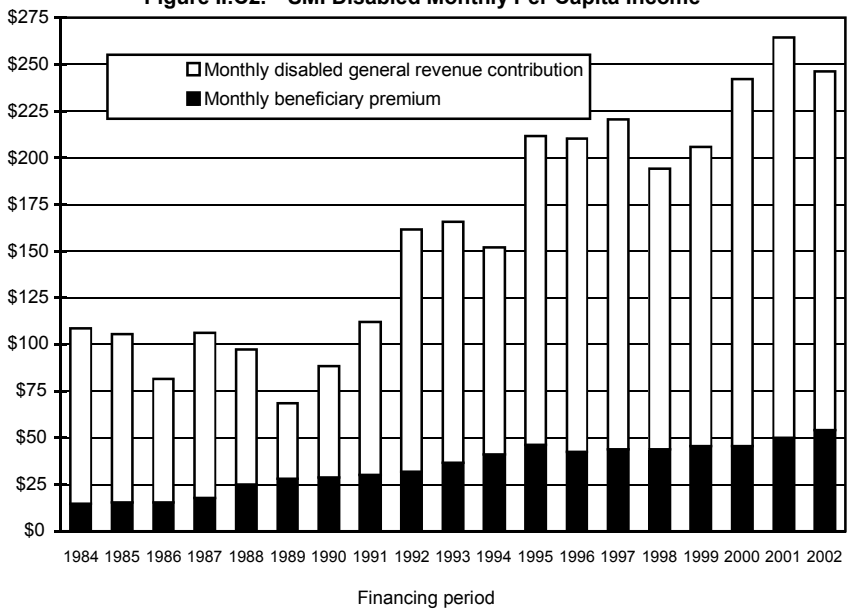
In fiscal year 2001, contributions received from the general fund of the treasury amounted to $69,838 million, which accounted for 73.3 percent of total revenue.

**Figure II.C1.—SMI Aged Monthly Per Capita Income[1]**




[1]The amounts shown do not include the catastrophic coverage monthly premium rate for 1989.

**Figure II.C2.—SMI Disabled Monthly Per Capita Income[1]**




[1]See footnote 1 of figure II.C1.

Another source of SMI revenue is interest received on investments held by the fund. The investment procedures of the fund are described later in this section. In fiscal year 2001, $3,187 million of revenue consisted almost entirely of interest on the investments of the trust fund.

The Managing Trustee may accept and deposit in the SMI trust fund unconditional money gifts or bequests made for the benefit of the fund. Contributions in the amount of $3 million were made in fiscal year 2001.

### *b. Expenditures*

Expenditures for SMI benefit payments and administrative expenses are paid out of the trust fund. All expenses incurred by the Department of Health and Human Services, the Social Security Administration, and the Department of the Treasury in administering SMI are charged to the trust fund. Such administrative duties include payment of benefits, the fraud and abuse control activities, and experiments and demonstration projects designed to determine various methods of increasing efficiency and

economy in providing health care services, while maintaining the quality of such services, under HI and SMI.

In addition, Congress has authorized expenditures from the trust funds for construction, rental and lease, or purchase contracts of office buildings and related facilities for use in connection with the administration of SMI. Such costs are included in trust fund expenditures. The net worth of facilities and other fixed capital assets is not carried in the statement of trust fund assets presented in this report, since the value of fixed capital assets does not represent funds available for benefit or administrative expenditures and is not, therefore, pertinent in assessing the actuarial status of the funds.

Of the $99,452 million in total SMI expenditures, $97,466 million represented net benefits paid from the trust fund for health services.[16] Net benefits increased 11.8 percent over the corresponding amount of $87,212 million paid during the preceding fiscal year. This increase reflected the continuing impact of the transfer of a portion of costs of home health care services from the HI trust fund, as specified in the Balanced Budget Act of 1997. Payments to establishments such as outpatient hospital facilities and home health agencies increased about 13.1 percent from 2000 to 2001, in large part due to the provisions of the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000. Expenditures for physician and other professional services—the largest type of benefit—grew about 13.1 percent over the 2000 expenditures, reflecting significant growth in the volume and intensity of services performed together with a "bonus" payment increase of 3 percent under the sustainable growth rate provisions of the Balanced Budget Act of 1997. Managed care payments increased only about 6.3 percent from 2000, as a result of a significant decline in enrollment in such plans. Additional information on SMI benefits by type of service is available in section III.B.

The remaining $1,986 million of expenditures was for net SMI administrative expenses, after adjustments to the preliminary allocation of administrative costs among the Social Security and Medicare trust funds and the general fund of the treasury.

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[16]Net benefits equal the total, gross amounts initially paid from the trust fund during the year less recoveries of overpayments identified through fraud and abuse control activities.

### *c. Actual experience versus prior estimates*

Table II.C3 compares the actual experience in fiscal year 2001 with the estimates presented in the 2000 and 2001 annual reports. The estimates for premiums from enrollees and government contributions in both reports were very close to actual experience. Actual SMI benefit payments in fiscal year 2001 were slightly lower than estimated in the 2001 annual report and slightly higher than in the 2000 report. The results are due, in part, to lower payments to outpatient hospital facilities than had been estimated and, to a lesser extent, to higher physician volume and intensity than had been estimated. The results also reflect the impact of the Benefits Improvement and Protection Act of 2000, which was enacted after the 2000 Trustees Report was released.

**Table II.C3.—Comparison of Actual and Estimated Operations of the SMI Trust Fund, Fiscal Year 2001**

[Dollar amounts in millions]

| | | Comparison of actual experience with estimates for fiscal year 2001 published in: | | | |
|---|---|---|---|---|---|
| | | 2001 report | | 2000 report | |
| Item | Actual amount | Estimated amount[1] | Actual as percentage of estimate | Estimated amount[1] | Actual as percentage of estimate |
| Premiums from enrollees | $22,307 | $22,036 | 101 | $22,102 | 101 |
| Government contributions | 69,838 | 69,777 | 100 | 71,105 | 98 |
| Benefit payments | 97,466 | 99,339 | 98 | 96,043 | 101 |

[1]Under the intermediate assumptions.

## d. Assets

The portion of the trust fund that is not required to meet current expenditures for benefits and administration is invested in interest-bearing obligations of the U.S. Government.

The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the trust fund. The law requires that these special public-debt obligations shall bear interest, at a rate based on the average market yield (computed on the basis of market quotations as of the end of the calendar month immediately preceding the date of such issue), on all marketable interest-bearing obligations of the United States forming a part of the public debt that are not due or callable until after the expiration of 4 years from the end of that calendar month. Since the inception of the SMI trust fund,

the assets have always been invested in special public-debt obligations.[17]

Table II.C4 shows a comparison of the total assets of the SMI trust fund and their distribution at the end of fiscal years 2000 and 2001. At the end of 2001, assets totaled $41,780 million: $41,978 million in the form of obligations of the U.S. Government and an undisbursed balance of -$199 million. A comparison of assets of the trust fund with liabilities for incurred but unpaid benefits (and related administrative expenses) is shown in section II.C2.

**Table II.C4.—Assets of the SMI Trust Fund, by Type, at the End of Fiscal Years 2000 and 2001[1]**

| | September 30, 2000 | September 30, 2001 |
|---|---|---|
| Investments in public-debt obligations sold only to the trust funds (special issues): | | |
| Certificates of indebtedness: | | |
| 6.125-percent, 2001 | 728,545,000.00 | —— |
| Bonds: | | |
| 5.625-percent, 2016 | —— | 1,822,107,000.00 |
| 5.875-percent, 2002-2003 | 598,234,000.00 | 299,117,000.00 |
| 5.875-percent, 2004-2013 | 5,218,641,000.00 | 5,218,641,000.00 |
| 6.000-percent, 2002 | 470,260,000.00 | —— |
| 6.000-percent, 2003-2014 | 8,164,737,000.00 | 8,164,737,000.00 |
| 6.250-percent, 2003-2008 | 2,674,644,000.00 | 2,674,644,000.00 |
| 6.500-percent, 2002 | 36,287,000.00 | —— |
| 6.500-percent, 2003-2015 | 3,473,552,000.00 | 3,473,552,000.00 |
| 6.875-percent, 2001-2002 | 790,297,000.00 | —— |
| 6.875-percent, 2003-2012 | 7,335,956,000.00 | 7,335,956,000.00 |
| 7.000-percent, 2001-2002 | 2,527,797,000.00 | —— |
| 7.000-percent, 2003-2011 | 3,945,412,000.00 | 3,945,412,000.00 |
| 7.250-percent, 2003-2009 | 1,853,149,000.00 | 1,853,149,000.00 |
| 7.375-percent, 2003-2007 | 1,590,285,000.00 | 1,590,285,000.00 |
| 8.125-percent, 2003-2006 | 1,900,955,000.00 | 1,900,955,000.00 |
| 8.750-percent, 2002 | 791,925,000.00 | 725,536,000.00 |
| 8.750-percent, 2003-2005 | 2,974,299,000.00 | 2,974,299,000.00 |
| Total investments | $45,074,975,000.00 | $41,978,390,000.00 |
| Undisbursed balance[2] | 820,529,764.74 | -198,600,200.97 |
| Total assets | $45,895,504,764.74 | $41,779,789,799.03 |

[1]Certificates of indebtedness and bonds are carried at par value, which is the same as book value.
[2]Negative figures represent an extension of credit against securities to be redeemed within the following few days.

The effective annual rate of interest earned by the assets of the SMI trust fund for the 12 months ending on December 31, 2001 was 6.4 percent. Interest on special issues is paid semiannually on June 30 and December 31. The interest rate on special issues

[17]Investments may also be made in obligations guaranteed as to both principal and interest by the United States, including certain federally sponsored agency obligations.

purchased by the trust fund in June 2001 was 5.625 percent, payable semiannually.

**2. 10-Year Actuarial Estimates (2002-2011)**

Future operations of the SMI trust fund are projected using the Trustees' economic and demographic assumptions, as detailed in the OASDI Trustees Report, as well as other assumptions unique to SMI. Section III.B presents an explanation of the effects of the Trustees' intermediate assumptions, and of the other assumptions unique to SMI, on the estimates in this report. Although SMI financing rates have been set only through December 31, 2002, it has been assumed that financing for future periods will be determined according to the statutory provisions described in section II.C1. In addition, for the benefit expenditure estimates, it is assumed that current statutory provisions are maintained.

Table II.C5[18] shows the estimated operations of the SMI trust fund under the intermediate assumptions on a fiscal-year basis through 2011. Table II.C6 shows the corresponding development on a calendar-year basis. These estimated operations reflect the transfer of certain home health services from HI to SMI, as specified by the Balanced Budget Act of 1997 and described in section II.B2. For the 6-year period 1998 through 2003, sums of money are to be transferred from the HI trust fund to the SMI trust fund to phase in the financial impact of the transfer of these services. The sums of money to be transferred are determined so that the net additional expenditures of the SMI trust fund are one-sixth of the cost of the services being transferred in 1998, incremented by an additional one-sixth of the cost each year thereafter. Unless otherwise noted, the SMI benefit payments for 1998 through 2003 shown throughout this report represent aggregate payments for SMI-covered services less the funds transferred from the HI trust fund.

[18]The income and expenditures shown in table II.C5 differ somewhat from those shown in the President's Fiscal Year 2003 Budget. The estimates presented in this report are based on different demographic and economic projections, and they do not reflect the implementation of proposed changes in laws and regulations that were included in the budget.

**Table II.C5.—Operations of the SMI Trust Fund (Cash Basis) during Fiscal Years 1970-2011**

[In millions]

| | Income | | | | Expenditures | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Fiscal year[1] | Premium from enrollees | Government contributions[2] | Interest and other income[3] | Total income | Benefit payments | Administrative expense | Total expenditures | Net increase in fund | Balance at end of year[4] |
| Historical data: | | | | | | | | | |
| 1970 | $936 | $928 | $12 | $1,876 | $1,979 | $217 | $2,196 | -$321 | $57 |
| 1975 | 1,887 | 2,330 | 105 | 4,322 | 3,765 | 405 | 4,170 | 152 | 1,424 |
| 1980 | 2,928 | 6,932 | 415 | 10,275 | 10,144 | 593 | 10,737 | -462 | 4,532 |
| 1985 | 5,524 | 17,898 | 1,155 | 24,577 | 21,808 | 922 | 22,730 | 1,847 | 10,646 |
| 1990 | 11,494[5] | 33,210 | 1,434[5] | 46,138[5] | 41,498 | 1,524[5] | 43,022[5] | 3,115[5] | 14,527[5] |
| 1995 | 19,244 | 36,988 | 1,937 | 58,169 | 63,491 | 1,722 | 65,213 | -7,045 | 13,874 |
| 1996 | 18,931 | 61,702 | 1,392 | 82,025 | 67,176 | 1,771 | 68,946 | 13,079 | 26,953 |
| 1997 | 19,141 | 59,471 | 2,193 | 80,806 | 71,133 | 1,420 | 72,553 | 8,253 | 35,206 |
| 1998 | 19,427 | 59,919 | 2,608 | 81,955 | 74,837[6] | 1,435 | 76,272 | 5,683 | 40,889 |
| 1999 | 20,160 | 62,185 | 2,933 | 85,278 | 79,008[6] | 1,510 | 80,518 | 4,760 | 45,649 |
| 2000 | 20,515 | 65,561 | 3,164 | 89,239 | 87,212[6] | 1,780 | 88,992 | 247 | 45,896 |
| 2001 | 22,307 | 69,838 | 3,191 | 95,336 | 97,466[6] | 1,986 | 99,452 | -4,116 | 41,780 |
| Intermediate estimates: | | | | | | | | | |
| 2002 | 24,131 | 77,328 | 2,819 | 104,277 | 104,613[6] | 1,775 | 106,388 | -2,111 | 39,669 |
| 2003 | 25,842 | 82,079 | 2,597 | 110,518 | 108,949[6] | 1,829 | 110,777 | -259 | 39,410 |
| 2004 | 27,424 | 85,513 | 3,299 | 116,237 | 113,712[6] | 1,901 | 115,612 | 624 | 40,034 |
| 2005 | 29,495 | 91,038 | 2,868 | 123,401 | 121,654 | 1,982 | 123,637 | -236 | 39,798 |
| 2006 | 31,692 | 97,776 | 2,696 | 132,165 | 127,327 | 2,066 | 129,393 | 2,772 | 42,571 |
| 2007 | 34,029 | 105,011 | 2,775 | 141,815 | 138,151 | 2,150 | 140,301 | 1,514 | 44,085 |
| 2008 | 36,748 | 113,275 | 2,859 | 152,882 | 149,071 | 2,237 | 151,308 | 1,575 | 45,659 |
| 2009 | 39,736 | 122,247 | 2,942 | 164,924 | 160,994 | 2,327 | 163,321 | 1,603 | 47,262 |
| 2010 | 43,150 | 132,381 | 3,066 | 178,596 | 173,174 | 2,422 | 175,596 | 3,000 | 50,262 |
| 2011 | 46,550 | 142,674 | 3,254 | 192,479 | 188,039 | 2,521 | 190,560 | 1,919 | 52,181 |

[1]Fiscal years 1970 and 1975 consist of the 12 months ending on June 30 of each year; fiscal years 1980 and later consist of the 12 months ending on September 30 of each year.
[2]General fund matching payments, plus certain interest-adjustment items.
[3]Other income includes recoveries of amounts reimbursed from the trust fund that are not obligations of the trust fund and other miscellaneous income.
[4]The financial status of SMI depends on both the assets and the liabilities of the trust fund (see table II.C10).
[5]Includes the impact of the Medicare Catastrophic Coverage Act of 1988 (Public Law 100-360).
[6]Benefit payments less monies transferred from the HI trust fund for home health agency costs, as provided for by the Balanced Budget Act of 1997.

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

**Table II.C6.—Operations of the SMI Trust Fund (Cash Basis) during Calendar Years 1970-2011**

[In millions]

| | Income | | | | Expenditures | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Calendar year | Premium from enrollees | Government contributions[1] | Interest and other income[2] | Total income | Benefit payments | Administrative expenses | Total expenditures | Net increase in fund | Balance at end of year[3] |
| Historical data: | | | | | | | | | |
| 1970 | $1,096 | $1,093 | $12 | $2,201 | $1,975 | $237 | $2,212 | -$11 | $188 |
| 1975 | 1,918 | 2,648 | 107 | 4,673 | 4,273 | 462 | 4,735 | -62 | 1,444 |
| 1980 | 3,011 | 7,455 | 408 | 10,874 | 10,635 | 610 | 11,245 | -372 | 4,530 |
| 1985 | 5,613 | 18,250 | 1,243 | 25,106 | 22,947 | 933 | 23,880 | 1,226 | 10,924 |
| 1990 | 11,320 | 33,035 | 1,558 | 45,913 | 42,468 | 1,519 | 43,987 | 1,926 | 15,482 |
| 1995 | 19,717 | 39,007 | 1,582 | 60,306 | 64,972 | 1,627 | 66,599 | -6,292 | 13,130 |
| 1996 | 18,763 | 65,035 | 1,811 | 85,609 | 68,598 | 1,810 | 70,408 | 15,202 | 28,332 |
| 1997 | 19,289 | 60,171 | 2,464 | 81,924 | 72,757 | 1,368 | 74,124 | 7,799 | 36,131 |
| 1998 | 20,933[4] | 64,068[4] | 2,711 | 87,711 | 76,125[5] | 1,505 | 77,630 | 10,081 | 46,212 |
| 1999 | 18,967[4] | 59,095[4] | 2,841 | 80,902 | 80,724[5] | 1,603 | 82,327 | -1,425 | 44,787 |
| 2000 | 20,555 | 65,898 | 3,450 | 89,903 | 88,893[5] | 1,770 | 90,663 | -760 | 44,027 |
| 2001 | 22,764 | 72,793 | 3,071 | 98,629 | 99,663[5] | 1,723 | 101,386 | -2,757 | 41,270 |
| Intermediate estimates: | | | | | | | | | |
| 2002 | 24,643 | 76,822 | 2,735 | 104,200 | 106,368[5] | 1,777 | 108,145 | -3,945 | 37,324 |
| 2003 | 26,242 | 83,831 | 2,551 | 112,624 | 109,762[5] | 1,864 | 111,626 | 998 | 38,322 |
| 2004 | 27,819 | 86,073 | 3,549 | 117,441 | 114,998 | 1,942 | 116,940 | 500 | 38,823 |
| 2005 | 30,054 | 92,693 | 2,641 | 125,388 | 122,172 | 2,022 | 124,194 | 1,194 | 40,016 |
| 2006 | 32,239 | 99,471 | 2,715 | 134,424 | 131,011 | 2,107 | 133,118 | 1,307 | 41,323 |
| 2007 | 34,625 | 106,858 | 2,796 | 144,279 | 140,722 | 2,193 | 142,915 | 1,364 | 42,687 |
| 2008 | 37,456 | 115,414 | 2,881 | 155,750 | 152,092 | 2,281 | 154,373 | 1,377 | 44,064 |
| 2009 | 40,496 | 124,524 | 2,962 | 167,982 | 164,136 | 2,372 | 166,508 | 1,474 | 45,538 |
| 2010 | 44,034 | 134,999 | 3,100 | 182,134 | 176,393 | 2,469 | 178,862 | 3,272 | 48,810 |
| 2011 | 47,389 | 145,232 | 3,306 | 195,927 | 189,448 | 2,571 | 192,018 | 3,909 | 52,719 |

[1]See footnote 2 of table II.C5.
[2]See footnote 3 of table II.C5.
[3]See footnote 4 of table II.C5.
[4]Section 708 of the Social Security Act modifies the provisions for the delivery of Social Security benefit checks when the regularly designated day falls on a Saturday, Sunday, or legal public holiday. Delivery of benefit checks normally due January 3, 1999 occurred on December 31, 1998. Consequently, the SMI premiums withheld from the checks ($1,512 million) and the associated general revenue contributions ($4,711 million) were added to the SMI trust fund on December 31, 1998. These amounts are excluded from the premium income and general revenue income for 1999.
[5]See footnote 6 of table II.C5.

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

The beneficiary premiums and actuarial rates for calendar year 2002 were promulgated with specific margins to decrease slightly the size of the SMI trust fund, which is currently well above levels considered adequate for contingency reserve purposes. As a result, the fund is estimated to decrease during 2002 to an estimated $37.3 billion by the end of the year, and then to increase slightly to $38.3 billion by the end of 2003. For subsequent years, financing margins are assumed to be set in such a way that the trust fund assets will increase less rapidly than expenditures, such that the preferred contingency level would be reached in 2009 and then maintained at that level thereafter.

The amount and rate of growth of benefit payments have been a source of some concern for many years. In table II.C7, amounts of payments are considered in the aggregate, on a per capita basis, and relative to the Gross Domestic Product (GDP). Rates of growth are shown historically and for the next 10 years, based on the intermediate set of assumptions. During 2001, SMI benefits grew 12.1 percent on an aggregate basis and 11.1 percent on a per capita basis, and increased to 0.98 percent of GDP. These large increases arose primarily from the Benefits Improvement and Protection Act of 2000, which provided for special, one-time payment increases to many categories of health care providers. For 2002, benefits are expected to grow 6.7 percent on an aggregate basis and 5.7 percent on a per capita basis, and to increase from 0.98 to 1.02 percent of GDP. These smaller increases are due in part to lower physician payments under the sustainable growth rate (SGR) system. To a lesser degree, lower managed care payment increases influence the smaller increases.

**Table II.C7.—Growth in Total SMI Benefits (Cash Basis) through December 31, 2011**

| Calendar year | Aggregate benefits [millions] | Percent change | Per capita benefits | Percent change | SMI benefits as a percentage of GDP |
|---|---|---|---|---|---|
| Historical data: | | | | | |
| 1970 | $1,975 | 5.9 | $101.30 | 3.5 | 0.19 |
| 1975 | 4,273 | 28.8 | 179.96 | 24.6 | 0.26 |
| 1980 | 10,635 | 22.1 | 389.87 | 19.3 | 0.38 |
| 1985 | 22,947 | 16.7 | 768.25 | 14.5 | 0.55 |
| 1990 | 42,468 | 10.9 | 1,303.98 | 9.2 | 0.74 |
| 1995 | 64,972 | 10.8 | 1,822.98 | 9.2 | 0.88 |
| 1996 | 68,598 | 5.6 | 1,900.01 | 4.2 | 0.88 |
| 1997 | 72,757 | 6.1 | 1,996.37 | 5.1 | 0.87 |
| 1998 | 76,125[1] | 4.6 | 2,071.08 | 3.8 | 0.87 |
| 1999 | 80,724[1] | 6.0 | 2,180.44 | 5.3 | 0.87 |
| 2000 | 88,893[1] | 10.1 | 2,382.26 | 9.3 | 0.90 |
| 2001 | 99,663[1] | 12.1 | 2,646.63 | 11.1 | 0.98 |
| Intermediate estimates: | | | | | |
| 2002 | 106,368[1] | 6.7 | 2,797.00 | 5.7 | 1.02 |
| 2003 | 109,762[1] | 3.2 | 2,860.98 | 2.3 | 0.99 |
| 2004 | 114,998 | 4.8 | 2,966.46 | 3.7 | 0.98 |
| 2005 | 122,172 | 6.2 | 3,117.14 | 5.1 | 0.99 |
| 2006 | 131,011 | 7.2 | 3,301.41 | 5.9 | 1.00 |
| 2007 | 140,722 | 7.4 | 3,491.89 | 5.8 | 1.02 |
| 2008 | 152,092 | 8.1 | 3,703.26 | 6.1 | 1.05 |
| 2009 | 164,136 | 7.9 | 3.920.22 | 5.9 | 1.07 |
| 2010 | 176,393 | 7.5 | 4,138.78 | 5.6 | 1.10 |
| 2011 | 189,448 | 7.4 | 4,355.94 | 5.2 | 1.12 |

[1]See footnote 6 of table II.C5.

The estimated costs shown in this annual report are somewhat lower over the next 10 years than those in the 2001 annual report. The lower estimated costs are partly a result of lower physician payment updates under the SGR than had previously been estimated. Based on the assumptions in this report, physician payment updates will be

reduced by approximately 5.0 percent for each of the years 2002-2004 (see table III.B1 for details). Also, outpatient hospital and managed care payments are lower than the estimates in the 2001 annual report. Overall, despite these updates, SMI costs in the 2002 annual report are still expected to increase faster than GDP after 2004, as indicated in table II.C7.

Since future economic, demographic, and health care usage and cost experience may vary considerably from the intermediate assumptions on which the preceding cost estimates were based, estimates have also been prepared using two alternative sets of assumptions: low cost and high cost. The estimated operations of the SMI trust fund during 2001-2011 are summarized in table II.C8 for all three alternatives. The assumptions underlying the intermediate assumptions are presented in substantial detail in section III.B. The assumptions used in preparing estimates under the low cost and high cost alternatives are also summarized in that section.

**Table II.C8.—Estimated Operations of the SMI Trust Fund during Calendar Years 2001-2011, under Alternative Sets of Assumptions**

[Dollar amounts in billions]

| Calendar year | Premiums from enrollees | Other income[1] | Total income | Total expenditures | Balance in fund at end of year |
|---|---|---|---|---|---|
| Intermediate: | | | | | |
| 2001[2] | $22.8 | $75.9 | $98.6 | $101.4[3] | $41.3 |
| 2002 | 24.6 | 79.6 | 104.2 | 108.1[3] | 37.3 |
| 2003 | 26.2 | 86.4 | 112.6 | 111.6[3] | 38.3 |
| 2004 | 27.8 | 89.6 | 117.4 | 116.9 | 38.8 |
| 2005 | 30.1 | 95.3 | 125.4 | 124.2 | 40.0 |
| 2006 | 32.2 | 102.2 | 134.4 | 133.1 | 41.3 |
| 2007 | 34.6 | 109.7 | 144.3 | 142.9 | 42.7 |
| 2008 | 37.5 | 118.3 | 155.8 | 154.4 | 44.1 |
| 2009 | 40.5 | 127.5 | 168.0 | 166.5 | 45.5 |
| 2010 | 44.0 | 138.1 | 182.1 | 178.9 | 48.8 |
| 2011 | 47.4 | 148.5 | 195.9 | 192.0 | 52.7 |
| Low cost: | | | | | |
| 2001[2] | $22.8 | $75.9 | $98.6 | $101.4[3] | $41.3 |
| 2002 | 24.6 | 79.6 | 104.3 | 106.8[3] | 38.7 |
| 2003 | 25.4 | 83.6 | 109.0 | 108.4[3] | 39.3 |
| 2004 | 26.4 | 85.3 | 111.7 | 111.3 | 39.7 |
| 2005 | 27.7 | 88.4 | 116.1 | 115.1 | 40.7 |
| 2006 | 29.0 | 92.1 | 121.1 | 119.9 | 41.9 |
| 2007 | 30.3 | 96.1 | 126.4 | 125.2 | 43.0 |
| 2008 | 31.9 | 101.2 | 133.2 | 132.0 | 44.2 |
| 2009 | 33.7 | 106.6 | 140.3 | 139.0 | 45.4 |
| 2010 | 35.3 | 111.6 | 147.0 | 145.8 | 46.6 |
| 2011 | 37.1 | 116.9 | 154.0 | 152.7 | 47.9 |
| High cost: | | | | | |
| 2001[2] | $22.8 | $75.9 | $98.6 | $101.4[3] | $41.3 |
| 2002 | 24.6 | 79.5 | 104.1 | 109.5[3] | 35.9 |
| 2003 | 27.3 | 89.8 | 117.1 | 116.0[3] | 37.0 |
| 2004 | 30.0 | 95.8 | 125.7 | 125.3 | 37.3 |
| 2005 | 32.8 | 103.7 | 136.5 | 135.4 | 38.4 |
| 2006 | 36.3 | 114.6 | 150.9 | 149.6 | 39.7 |
| 2007 | 41.3 | 129.6 | 170.9 | 167.5 | 43.2 |
| 2008 | 45.9 | 143.8 | 189.7 | 185.6 | 47.3 |
| 2009 | 50.6 | 158.5 | 209.1 | 204.6 | 51.7 |
| 2010 | 55.7 | 174.2 | 229.9 | 225.1 | 56.6 |
| 2011 | 61.4 | 192.0 | 253.4 | 247.9 | 62.1 |

[1]Other income contains government contributions and interest.
[2]Figures for 2001 represent actual experience.
[3]See footnote 6 of table II.C5.

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

The three sets of assumptions were selected in order to indicate the general range in which the cost might reasonably be expected to fall. The low and high cost alternatives provide for a fairly wide range of possible experience. Actual experience is expected to fall within the range, but no assurance can be given that this will be the case, particularly in light of the wide variations in experience that have occurred since SMI began. In addition to the alternative projections shown here, a supplementary assessment of the possible range of SMI expenditures is shown in section IV.D, based on a statistical analysis of past variation in SMI expenditure growth rates.

*Actuarial Analysis*

SMI expenditures are estimated to grow significantly faster than GDP under the intermediate and high cost assumptions. Based on the low cost assumptions, expenditures would initially increase faster than GDP, but only for the first few years. Thereafter, within the short-range period, costs would grow at approximately the same rate as GDP.

The alternative projections shown in table II.C8 illustrate two important aspects of the financial operations of the SMI trust fund:

- Despite the widely differing assumptions underlying the three alternatives, the balance between SMI income and expenditures remains relatively stable. Under the low cost assumptions, for example, by 2011 both income and expenditures would be around 20 percent lower than projected under the intermediate assumptions. The corresponding amounts under the high cost assumptions would be around 29 percent higher than the intermediate estimates.

  This result occurs because the premiums and general revenue contributions underlying SMI financing are reestablished annually to match each year's anticipated incurred benefit costs and other expenditures. Thus, SMI income will automatically track SMI expenditures fairly closely, regardless of the specific economic and other conditions.

- As a result of the close matching of income and expenditures described above, projected trust fund assets show stable patterns of change under all three sets of assumptions. The annual adjustment of premiums and general revenue contributions permits the maintenance of a trust fund balance that, while relatively small, is sufficient to guard against chance fluctuations.

*Adequacy of SMI Financing Established for Calendar Year 2002*

The traditional concept of financial adequacy, as it applies to SMI, is closely related to the concept as it applies to many private group insurance plans. SMI is somewhat similar to yearly renewable term insurance, with financing from premium income paid by the enrollees and from income contributed from general revenue by the federal government. Consequently, the income during a 12-month period for which financing is being established should be sufficient to cover the costs of services expected to be rendered during that period (including associated administrative costs), even though payment for some of

these services will not be made until after the period closes. The portion of income required to cover those benefits not paid until after the end of the year is added to the trust fund. Thus, the assets that are in the trust fund at any time should be no less than the costs of the benefits and the administrative expenses incurred but not yet paid.

Since the income per enrollee (premium plus government contribution) is established prospectively each year, it is subject to projection error. Additionally, legislation enacted after the financing has been established, but effective for the period for which financing has been set, may affect costs. Trust fund assets, therefore, should be maintained at a level that is adequate to cover not only the value of incurred but unpaid expenses but also a reasonable degree of variation between actual and projected costs (in case actual costs exceed projected).

The actuarial status or financial adequacy of the SMI trust fund is traditionally evaluated over the period for which the enrollee premium rates and level of general revenue financing have been established. The primary tests are that (1) the assets and income for years for which financing has been established should be sufficient to meet the projected benefits and associated administrative expenses incurred for that period; and (2) the assets should be sufficient to cover projected liabilities that have not yet been paid as of the end of the period. If these adequacy tests are not met, SMI can still continue to operate if the trust fund remains at a level adequate to permit the payment of claims as presented. However, to protect against the possibility that costs will be higher than assumed, assets should be sufficient to include contingency levels that cover a reasonable degree of variation between actual and projected costs.

The traditional tests of asset adequacy described above have been augmented by a supplementary assessment of uncertainty using statistical methods, as shown in section IV.D of this report.

As noted above, the tests of financial adequacy for SMI rely on the incurred experience of the trust fund, including a liability for the costs of services performed in a year but not yet paid. Table II.C9 shows the estimated transactions of the trust fund on an incurred

basis. The incurred experience must be viewed as an estimate, even for historical years.[19]

**Table II.C9.—Estimated SMI Income and Expenditures (Incurred Basis) for Financing Periods through December 31, 2002**

[In millions]

| | Income | | | | Expenditures | | | |
|---|---|---|---|---|---|---|---|---|
| Financing period | Premiums from enrollees | Govern-ment contributions | Interest and other income | Total income | Benefit payments | Adminis-trative expenses | Total expendi-tures | Net operations in year |
| Historical data: | | | | | | | | |
| 12-month period ending June 30, | | | | | | | | |
| 1970 | $936 | $936 | $12 | $1,884 | $1,928 | $213 | $2,141 | -257 |
| 1975 | 1,887 | 2,396 | 105 | 4,388 | 3,957 | 438 | 4,395 | -7 |
| 1980 | 2,823 | 6,627 | 421 | 9,871 | 9,840 | 645 | 10,485 | -614 |
| Calendar year | | | | | | | | |
| 1985 | 5,613 | 18,243 | 1,248 | 25,104 | 22,750 | 986 | 23,736 | 1,368 |
| 1990 | 11,320 | 33,035 | 1,558 | 45,913 | 42,578 | 1,541 | 44,119 | 1,794 |
| 1995 | 19,717 | 45,743 | 1,739 | 67,199 | 64,918 | 1,607 | 66,525 | 674 |
| 1996 | 18,763 | 58,068 | 1,885 | 78,716 | 68,762 | 1,807 | 70,569 | 8,147 |
| 1997 | 19,289 | 60,169 | 2,466 | 81,924 | 72,726 | 1,367 | 74,093 | 7,831 |
| 1998 | 19,421 | 59,357 | 2,711 | 81,489 | 77,239[1] | 1,438 | 78,677 | 2,812 |
| 1999 | 20,479 | 63,806 | 2,841 | 87,126 | 81,506[1] | 1,603 | 83,109 | 4,017 |
| 2000 | 20,555 | 65,898 | 3,450 | 89,903 | 89,757[1] | 1,770 | 91,526 | -1,623 |
| 2001 | 22,764 | 72,793 | 3,071 | 98,629 | 100,892[1] | 2,008 | 102,900 | -4,271 |
| Intermediate estimates: | | | | | | | | |
| 2002 | 24,643 | 76,822 | 2,735 | 104,200 | 106,504[1] | 1,777 | 108,281 | -4,081 |

[1]See footnote 6 of table II.C5.

The liability outstanding at any time, for the cost of services performed for which no payment has been made, is referred to as "benefits incurred but unpaid." Estimates of the amount of benefits incurred but unpaid as of the end of each financing period, and of the administrative expenses related to processing these benefits, appear in table II.C10. In some years, trust fund assets have not been as large as liabilities. Nonetheless, the fund has remained positive, allowing claims to be paid.

[19]SMI experience is substantially more difficult to determine on an incurred basis than on a cash basis. Payment for some services is reported only on a cash basis, and the incurred experience must be inferred from the cash payment information. Moreover, for recent time periods, the tabulations of bills are incomplete due to normal processing delays.

**Table II.C10.—Summary of Estimated SMI Assets and Liabilities as of the End of the Financing Period, for Periods through December 31, 2002**

[Dollar amounts in millions]

| | Balance in trust fund | Government contributions due but unpaid | Total assets | Benefits incurred but unpaid | Administrative costs incurred but unpaid | Total liabilities | Excess of assets over liabilities | Ratio[1] |
|---|---|---|---|---|---|---|---|---|
| Historical data: | | | | | | | | |
| As of June 30, | | | | | | | | |
| 1970 | $57 | $15 | $72 | $567 | $0 | $567 | -495 | -0.21 |
| 1975 | 1,424 | 67 | 1,491 | 1,257 | 14 | 1,271 | 220 | 0.04 |
| 1980 | 4,657 | 0 | 4,657 | 2,621 | 188 | 2,809 | 1,848 | 0.15 |
| As of December 31, | | | | | | | | |
| 1985 | 10,924 | 0 | 10,924 | 3,142 | -38 | 3,104 | 7,820 | 0.28 |
| 1990 | 15,482 | 0 | 15,482 | 4,060 | 20 | 4,080 | 11,402 | 0.24 |
| 1995 | 13,130 | 6,893[2] | 20,023 | 4,282 | -214 | 4,068 | 15,955 | 0.23 |
| 1996 | 28,332 | 0 | 28,332 | 4,446 | -217 | 4,230 | 24,102 | 0.32 |
| 1997 | 36,131 | 0 | 36,131 | 4,416 | -217 | 4,199 | 31,932 | 0.41 |
| 1998 | 46,212[3] | 0 | 46,212[3] | 5,531 | -285 | 11,469[3] | 34,743 | 0.42 |
| 1999 | 44,787 | 0 | 44,787 | 6,312 | -285 | 6,028 | 38,760 | 0.42 |
| 2000 | 44,027 | 0 | 44,027 | 7,176 | -285 | 6,891 | 37,136 | 0.36 |
| 2001 | 41,270 | 0 | 41,270 | 8,405 | 0 | 8,405 | 32,865 | 0.30 |
| Intermediate estimates: | | | | | | | | |
| 2002 | 37,324 | 0 | 37,324 | 8,541 | 0 | 8,541 | 28,784 | 0.26 |

[1]Ratio of the excess of assets over liabilities to the following year's total incurred expenditures.

[2]This amount includes both the principal of $6,736 million and the accumulated interest through December 31, 1995 for the shortfall in the fiscal year 1995 appropriation for government contributions. Normally, this transfer would have been made on December 31, 1995 and, therefore, would have been reflected in the trust fund balance. However, due to absence of funding, the transfer of the principal and the appropriate interest was delayed until March 1, 1996.

[3]Section 708 of the Social Security Act modifies the provisions for the delivery of Social Security benefit checks when the regularly designated day falls on a Saturday, Sunday, or legal public holiday. Delivery of benefit checks normally due January 3, 1999 occurred on December 31, 1998. Consequently, the SMI premiums withheld from the checks ($1,512 million) and the general revenue matching contributions ($4,711 million) were added to the SMI trust fund on December 31, 1998 and were included in the liabilities.

The amount of assets minus liabilities can be compared with the estimated incurred expenditures for the following calendar year to form a relative measure of the SMI trust fund's financial status. The last column in table II.C10 shows such ratios for past years and the estimated ratio at the end of 2001. Past studies have indicated that a ratio of roughly 15-20 percent is sufficient to protect against unforeseen contingencies, such as unusually large increases in SMI expenditures. At the end of 2001, the SMI reserve ratio was 30 percent, or well in excess of normal requirements.

SMI financing has been established through December 31, 2002. The financing for calendar year 2002 was designed with specific margins to gradually reduce the excess of assets over liabilities as a percentage of incurred expenditures for the following year. As a result, the calendar year 2002 incurred income is expected to be less than incurred expenditures by $4,081 million, as shown in

table II.C9, and the excess of assets over liabilities is expected to decrease from $32,865 million at the end of December 2001 to $28,784 million at the end of December 2002, under the intermediate assumptions, as indicated in table II.C10. This excess as a percentage of incurred expenditures for the following year is expected to decrease from 30 percent as of December 31, 2001 to 26 percent as of December 31, 2002.

Since the financing rates are set prospectively, the actuarial status of the SMI trust fund could be affected by variations between assumed cost increases and subsequent actual experiences. To test the status of the trust fund under varying assumptions, a lower growth range projection and an upper growth range projection were prepared by varying the key assumptions through the period for which the financing has been set. These two alternative sets of assumptions provide a range of financial outcomes within which the actual experience of SMI might reasonably be expected to fall. The values for the lower and upper growth range assumptions were determined from a statistical analysis of the historical variation in the respective increase factors. Section IV.D of this report describes the statistical methodology in more detail and also extends the analysis through 2011.

This sensitivity analysis differs from the low cost and high cost projections discussed previously in this section in that this analysis examines the variation in the projection factors in the period for which the financing has been established (2002 for this report). The low cost and high cost projections, on the other hand, illustrate the financial impact of slower or faster growth trends throughout the short-range projection period.

Table II.C11 indicates that, under the lower growth range scenario, trust fund assets would exceed liabilities at the end of December 2002 by a wide margin, equivalent to 33.6 percent of the following year's incurred expenditures. If this lower growth range scenario were actually to materialize, then subsequent financing rates would be adjusted downward in order to lower the excess of assets over liabilities to an appropriate level to maintain the adequacy of the trust fund. Under the upper growth range scenario, trust fund assets would still exceed liabilities by the end of December 2002, dropping to a level of 19.0 percent of the following year's incurred expenditures. Therefore, even if these upper range growth rates were to occur, assets would still be sufficient to cover outstanding liabilities.

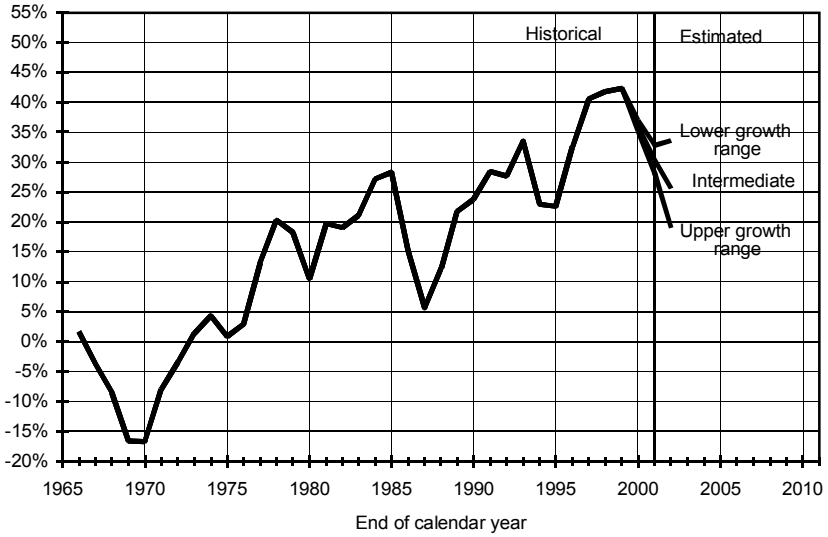
Figure II.C3 shows this ratio for historical years and for projected years under the intermediate scenario, as well as under the lower growth range (optimistic) and the upper growth range (pessimistic) cost sensitivity scenarios.

**Table II.C11.—Actuarial Status of the SMI Trust Fund under Three Cost Sensitivity Scenarios for Financing Periods through December 31, 2002**

| As of December 31, | 2000 | 2001 | 2002 |
|---|---|---|---|
| Intermediate scenario: | | | |
| Actuarial status (in millions) | | | |
| Assets | $44,027 | $41,270 | $37,324 |
| Liabilities | 6,891 | 8,405 | 8,541 |
| Assets less liabilities | 37,136 | 32,865 | 28,784 |
| Ratio (in percent)[1] | 36.1 | 30.4 | 25.6 |
| Low range scenario: | | | |
| Actuarial status (in millions) | | | |
| Assets | $44,027 | $41,270 | $41,802 |
| Liabilities | 6,891 | 8,161 | 8,057 |
| Assets less liabilities | 37,136 | 33,108 | 33,746 |
| Ratio (in percent)[1] | 37.0 | 32.8 | 33.6 |
| Upper range scenario: | | | |
| Actuarial status (in millions) | | | |
| Assets | $44,027 | $41,270 | $32,603 |
| Liabilities | 6,891 | 8,660 | 9,051 |
| Assets less liabilities | 37,136 | 32,609 | 23,552 |
| Ratio (in percent)[1] | 35.2 | 28.1 | 19.0 |

[1]Ratio of assets less liabilities at the end of the year to the total incurred expenditures during the following year, expressed as a percent.

**Figure II.C3.—Actuarial Status of the SMI Trust Fund through Calendar Year 2002**




Note: The actuarial status of the SMI trust fund is measured by the ratio of (1) assets minus liabilities at the end of the year to (2) the following year's incurred expenditures.

Based on the tests described above, the Trustees conclude that the financing established for the SMI trust fund for calendar year 2002 is adequate.

### 3. 75-Year Actuarial Estimates (2002-2076)

In section II.C2, the expected operations of the SMI trust fund over the next 10 years were presented. In this section, the long-range actuarial status of the trust fund is examined under the intermediate assumptions. Because of its automatic financing provisions, the SMI trust fund is expected to be adequately financed into the indefinite future, so a long-range analysis using high cost and low cost assumptions is not conducted.

Table II.C12 shows the estimated SMI incurred expenditures under the intermediate assumptions expressed as a percentage of GDP, for selected years over the calendar-year period 2001-2075.[20] The 75-year projection period fully allows for the presentation of future trends that may reasonably be expected to occur, such as the impact of the large increase in enrollees after the turn of the century when the

[20]These estimated incurred expenditures are for benefit payments and administrative expenses combined, unlike the values in table II.C7, which express only benefit payments on a cash basis as a percentage of GDP.

baby boom generation will reach eligibility age and begin to receive benefits.

Increases in SMI costs per enrollee during the initial 25-year period are assumed to decline gradually in the last 12 years of that period to the same growth rate as GDP per capita plus 1 percentage point, and then to continue to grow at GDP per capita plus 1 percentage point in the last 50 years. Based on these assumptions, incurred SMI expenditures as a percentage of GDP would increase rapidly from 1.01 percent in 2001 to 3.67 percent in 2075.

**Table II.C12.—SMI Expenditures (Incurred Basis) as a Percentage of the Gross Domestic Product[1]**

| Calendar year | SMI expenditures as a percentage of GDP |
|---|---|
| 2001 | 1.01 |
| 2002 | 1.04 |
| 2003 | 1.02 |
| 2004 | 1.01 |
| 2005 | 1.01 |
| 2006 | 1.03 |
| 2007 | 1.04 |
| 2008 | 1.07 |
| 2009 | 1.10 |
| 2010 | 1.12 |
| 2015 | 1.30 |
| 2020 | 1.54 |
| 2025 | 1.83 |
| 2030 | 2.10 |
| 2035 | 2.30 |
| 2040 | 2.42 |
| 2045 | 2.51 |
| 2050 | 2.60 |
| 2055 | 2.75 |
| 2060 | 2.97 |
| 2065 | 3.22 |
| 2070 | 3.46 |
| 2075 | 3.67 |

[1]Expenditures are the sum of benefit payments and administrative expenses.

## 4. Implications of SMI Cost Growth

The SMI trust fund is considered to be financially adequate because the financing rates for determining beneficiary premiums and general revenue contributions are established annually to cover the expected costs for the upcoming year. Should actual costs exceed those anticipated when the financing is determined, future rates can include adjustments to recover the shortfall. Likewise, should actual costs be less than those anticipated, the savings would be passed along in future rates. As long as the financing rates are reasonably set, the SMI trust fund will remain financially solvent.

However, a critical issue for the SMI trust fund is the impact of the past and expected rapid growth of SMI costs, which place steadily

increasing demands on beneficiaries and society at large. This section compares the past and projected growth in SMI costs with GDP growth and assesses the implications of the rapid growth on beneficiaries and the budget of the federal government.

Table II.C13 compares the growth in SMI expenditures with that of the economy as a whole. Based on our current estimates, SMI costs will continue to outpace growth in GDP. Compared to the last 10 years, the growth differential in the next 25 years is estimated to expand, largely due to the increase in the SMI population as the baby boom generation turns age 65 and begins to receive benefits.

**Table II.C13.—Average Annual Rates of Growth in SMI and the Economy**

[In percent]

| Calendar years | SMI | | | U.S. Economy | | | Growth differential[1] |
|---|---|---|---|---|---|---|---|
| | Beneficiary population | Per capita benefits | Total benefits | Total population | Per capita GDP | Total GDP | |
| Historical data: | | | | | | | |
| 1967-1980 | 3.3 | 14.1 | 17.9 | 0.9 | 8.7 | 9.8 | 7.4 |
| 1981-1990 | 1.8 | 12.6 | 14.6 | 1.0 | 6.5 | 7.6 | 6.6 |
| 1991-2001 | 1.3 | 6.7 | 8.1 | 0.9 | 4.3 | 5.3 | 2.7 |
| Intermediate estimates: | | | | | | | |
| 2002-2011 | 1.5 | 5.1 | 6.6 | 0.8 | 4.3 | 5.2 | 1.3 |
| 2012-2026 | 2.8 | 5.3 | 8.2 | 0.7 | 4.0 | 4.7 | 3.4 |
| 2027-2051 | 0.8 | 5.2 | 6.1 | 0.4 | 4.2 | 4.7 | 1.4 |
| 2052-2076 | 0.7 | 5.3 | 6.0 | 0.3 | 4.2 | 4.5 | 1.4 |

[1]Excess of total SMI benefit growth above total GDP growth.

Since SMI per capita benefits are expected to continue to grow faster than per capita GDP, the premiums and coinsurance amounts paid by beneficiaries would represent a growing share of their total income. Table II.C14 illustrates the past and projected impact on beneficiaries of the increasing SMI cost. In 2001, for example, about 6 percent of a typical 65-year-old's Social Security benefit was withheld to pay the monthly SMI premium of $50.00. In addition, 8 percent of that benefit was used to pay SMI copayments (deductible and coinsurance). Therefore, total out-of-pocket expenditures represented roughly 14 percent of a typical 65-year-old's Social Security benefit. Twenty years later, under the intermediate assumptions, the same beneficiary's out-of-pocket expenses would require an estimated 20 percent of his or her benefit. Similarly, in 2050, it is estimated that about 21 percent of a typical 65-year-old's Social Security benefit would be used to pay out-of-pocket expenses. By 2070 the same beneficiary's out-of-pocket expenses would require almost 33 percent of his or her benefit.

**Table II.C14.—SMI Out-of-Pocket Expenses as a Percentage of Illustrative Social Security Benefit**

| | Illustrative 65-year-old (percentage of Social Security benefit) | | | | Same person in 20 years (age 85) (percentage of Social Security benefit) | | |
|---|---|---|---|---|---|---|---|
| Calendar year | SMI monthly premium | SMI copayments | Total SMI out-of-pocket expenses | Calendar year | SMI monthly premium | SMI copayments | Total SMI out-of-pocket expenses |
| 1970 | 3.8 | 4.3 | 8.1 | 1990 | 7.1 | 8.7 | 15.8 |
| 1980 | 3.0 | 3.9 | 6.9 | 2000 | 7.6 | 9.7 | 17.3 |
| 1990 | 5.4 | 6.7 | 12.1 | 2010 | 9.6 | 8.8 | 18.3 |
| 2000 | 6.0 | 7.7 | 13.6 | 2020 | 10.6 | 9.5 | 20.1 |
| 2001 | 6.4 | 7.9 | 14.2 | 2021 | 10.9 | 9.2 | 20.1 |
| 2010 | 7.7 | 7.1 | 14.8 | 2030 | 12.0 | 10.5 | 22.5 |
| 2020 | 8.2 | 7.3 | 15.5 | 2040 | 12.9 | 11.1 | 24.0 |
| 2030 | 9.1 | 7.9 | 17.0 | 2050 | 13.6 | 11.7 | 25.3 |
| 2040 | 10.2 | 8.7 | 18.9 | 2060 | 15.3 | 13.1 | 28.5 |
| 2050 | 11.1 | 9.5 | 20.5 | 2070 | 17.6 | 15.1 | 32.7 |

Notes: 1. "Illustrative" beneficiary is defined as (1) paying the standard SMI premium, (2) incurring the average level of copayments for all aged beneficiaries each year, and (3) receiving a monthly Social Security benefit at age 65 equal to approximately the average benefit for all OASDI beneficiaries in the year shown, with standard OASDI benefit increases applying in subsequent years. The examples shown are intended to illustrate the impact of growth in SMI out-of-pocket costs on beneficiaries. In practice, the impact on individual beneficiaries can vary substantially from these illustrations, depending on specific copayment and Social Security benefit levels.

2. Due to the impact of inflation, dollar amounts in widely separated time periods are difficult to compare (for example, 1970 versus 2000, or 2000 versus 2030). *Relative measures*, such as the premium relative to average benefits (as shown here), can be more meaningfully compared across time.

Another way to evaluate the implications of rapid SMI growth is to compare the government contributions to the SMI trust fund with total federal income taxes (personal and corporate income taxes). Table II.C15 indicates that SMI general revenues in fiscal year 2001 were equivalent to about 6 percent of total federal income taxes collected in that year. If such taxes remain at their current level, relative to the national economy, then SMI general revenue financing in 2070 would represent roughly 23 percent of total income taxes, based on the intermediate projections.

**Table II.C15.—SMI General Revenues as a Percentage of Personal and Corporate Federal Income Taxes**

| Fiscal year | Percentage of income taxes[1] |
|---|---|
| Historical data: | |
| 1970 | 0.8% |
| 1980 | 2.2 |
| 1990 | 5.9 |
| 2000 | 5.4 |
| 2001 | 6.1 |
| Intermediate estimates: | |
| 2010 | 7.3 |
| 2020 | 10.1 |
| 2030 | 13.8 |
| 2040 | 15.9 |
| 2050 | 17.1 |
| 2060 | 19.5 |
| 2070 | 22.8 |

[1]Future percentages are based on the assumption that federal income taxes would remain the same share of GDP as in 2001.

These examples illustrate the significant impact that SMI expenditure growth has had to date on beneficiaries and the federal budget. Under present law, the projected SMI expenditure increases associated with the cost of providing health care generally, plus the impact of the baby boom's reaching eligibility age, would continue to exert growing pressure. This outlook reinforces the Trustees' recommendation for development and enactment of further reforms to reduce the rate of growth in SMI expenditures.

# III. ACTUARIAL METHODOLOGY AND PRINCIPAL ASSUMPTIONS FOR COST ESTIMATES FOR THE HOSPITAL INSURANCE AND SUPPLEMENTARY MEDICAL INSURANCE TRUST FUNDS

This section describes the basic methodology and assumptions used in the estimates for the HI and SMI trust funds under the intermediate assumptions. In addition, projections of HI and SMI costs under two alternative sets of assumptions are presented.

The economic and demographic assumptions underlying the projections of HI and SMI costs shown in this report are consistent with those in the 2002 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds. These assumptions are described in more detail in that report.

## *A. Hospital Insurance*

### 1. Cost Projection Methodology

The principal steps involved in projecting the future HI costs are (1) establishing the present cost of services provided to beneficiaries, by type of service, to serve as a projection base; (2) projecting increases in HI payments for inpatient hospital services; (3) projecting increases in HI payments for skilled nursing, home health, and hospice services covered; (4) projecting increases in payments to managed care plans; and (5) projecting increases in administrative costs. The major emphasis is directed toward expenditures for fee-for-service inpatient hospital services, which account for approximately 69 percent of total benefits.

#### *a. Projection Base*

To establish a suitable base from which to project the future HI costs, the incurred payments for services provided must be reconstructed for the most recent period for which a reliable determination can be made. Therefore, payments to providers must be attributed to dates of service, rather than to payment dates; in addition, the nonrecurring effects of any changes in regulations, legislation, or administration, and of any items affecting only the timing and flow of payments to providers, must be eliminated. As a result, the rates of increase in the HI incurred costs differ from the increases in cash expenditures shown in the tables in section II.B.

For those expenses still reimbursed on a reasonable-cost basis, the costs for covered services are determined on the basis of provider cost

reports. Due to the time required to obtain cost reports from providers, to verify these reports, and to perform audits (where appropriate), final settlements have lagged behind the original costs by as much as several years for some providers. Additional complications are posed by changes in legislation or regulation, or in administrative or reimbursement policy, the effects of which cannot always be determined precisely.

The process of allocating the various types of HI payments made to the proper incurred period—using incomplete data and estimates of the impact of administrative actions—presents difficult problems, and the solutions to these problems can be only approximate. Under the circumstances, the best that can be expected is that the actual HI incurred cost for a recent period can be estimated within a few percent. This process increases the projection error directly, by incorporating any error in estimating the base year into all future years.

***b. Fee-for-Service Payments for Inpatient Hospital Costs***

Almost all inpatient hospital services covered by HI are paid under a prospective payment system. The law stipulates that the annual increase in the payment rate for each admission will be related to a hospital input price index (also known as the hospital market basket), which measures the increase in prices for goods and services purchased by hospitals for use in providing care to hospital inpatients. For fiscal year 2002, the prospective payment rates have already been determined. The projections contained in this report are based on the assumption that for fiscal year 2003, the prospective payment rates will be increased by the increase in the hospital input price index, less the percentages specified by Public Law 106-554, the Benefits Improvement and Protection Act of 2000. For fiscal years 2004 and later, current statute mandates that the annual increase in the payment rate per admission equal the annual increase in the hospital input price index.

Increases in aggregate payments for inpatient hospital care covered under HI can be analyzed in five broad categories, all of which are presented in table III.A1:

(1) Labor factors—the increase in the hospital input price index that is attributable to increases in hospital workers' hourly earnings (including fringe benefits);

(2) Non-labor factors—the increase in the hospital input price

index that is attributable to factors other than hospital workers' hourly earnings, such as the costs of energy, food, and supplies;

(3) Unit input intensity allowance—the amount added to or subtracted from the input price index (generally as a result of legislation) to yield the prospective payment update factor;

(4) Volume of services—the increase in total output of units of service (as measured by covered HI hospital admissions); and

(5) Other sources—a residual category, reflecting all other factors affecting hospital cost increases (such as intensity increases).

Table III.A1 shows the estimated historical values of these principal components, as well as the projected trends used in the estimates. Unless otherwise indicated, the following discussions apply to projections under the intermediate assumptions.

**Table III.A1.—Components of Historical and Projected Increases in HI Inpatient Hospital Payments[1]**

| | Labor | | | Non-labor | | | | | Units of service | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calendar year | Average hourly earnings | Hospital hourly earnings differential | Hospital hourly earnings | CPI | Hospital price differential | Non-labor hospital prices | Input price index | Unit input intensity allowance[2] | HI enrollment | Managed care shift effect | Admission incidence | Other sources | HI inpatient hospital payments |
| Historical data: | | | | | | | | | | | | | |
| 1992 | 6.3% | -2.3% | 3.9% | 2.9% | -0.9% | 2.0% | 3.2% | -0.3% | 2.1% | -0.4% | 0.0% | 7.0% | 11.9% |
| 1993 | 1.4 | 2.1 | 3.5 | 2.8 | -0.6 | 2.2 | 3.0 | -0.3 | 2.1 | -0.6 | 2.8 | -1.3 | 5.8 |
| 1994 | 1.7 | 1.4 | 3.1 | 2.5 | -0.6 | 1.9 | 2.7 | -0.7 | 1.8 | -1.0 | 2.4 | 1.7 | 7.1 |
| 1995 | 3.3 | -0.7 | 2.6 | 2.9 | 1.1 | 4.0 | 3.1 | -1.0 | 1.7 | -2.0 | 2.4 | 0.4 | 4.7 |
| 1996 | 4.9 | -2.0 | 2.8 | 2.9 | -1.5 | 1.4 | 2.3 | -0.7 | 1.4 | -2.7 | 5.1 | 1.8 | 7.2 |
| 1997 | 4.2 | -1.4 | 2.7 | 2.3 | -1.2 | 1.1 | 2.1 | -0.8 | 1.1 | -3.2 | 2.6 | -0.3 | 1.4 |
| 1998 | 5.2 | -1.8 | 3.3 | 1.3 | 1.2 | 2.5 | 3.0 | -2.6 | 1.0 | -3.1 | 0.4 | -0.2 | -1.6 |
| 1999 | 4.9 | -1.6 | 3.2 | 2.2 | -0.9 | 1.3 | 2.5 | -2.2 | 0.8 | -1.8 | 1.3 | 1.2 | 1.8 |
| 2000 | 4.8 | -0.7 | 4.1 | 3.5 | -0.1 | 3.4 | 3.8 | -2.2 | 1.0 | 0.3 | 0.3 | -1.5 | 1.8 |
| 2001 | 5.6 | -0.9 | 4.6 | 2.8 | -0.1 | 2.7 | 3.9 | -0.2 | 1.2 | 2.3 | -0.2 | 0.4 | 7.7 |
| Intermediate estimates: | | | | | | | | | | | | | |
| 2002 | 3.1 | 0.5 | 3.6 | 1.3 | -0.9 | 0.4 | 2.4 | -0.7 | 0.9 | 1.7 | 0.1 | 1.7 | 6.3 |
| 2003 | 4.6 | -0.4 | 4.2 | 2.5 | 0.0 | 2.5 | 3.6 | -0.5 | 1.1 | 0.5 | 0.2 | 0.2 | 5.2 |
| 2004 | 4.0 | 0.0 | 4.0 | 2.8 | 0.0 | 2.8 | 3.6 | 0.0 | 1.3 | 0.4 | 0.0 | 0.7 | 6.1 |
| 2005 | 4.1 | 0.0 | 4.1 | 2.9 | 0.0 | 2.9 | 3.7 | 0.0 | 1.3 | 0.5 | -0.1 | 0.7 | 6.2 |
| 2006 | 4.1 | 0.0 | 4.1 | 3.0 | 0.0 | 3.0 | 3.7 | 0.0 | 1.5 | 0.0 | 0.0 | 0.7 | 6.0 |
| 2007 | 4.1 | 0.0 | 4.1 | 3.0 | 0.0 | 3.0 | 3.7 | 0.0 | 1.8 | 0.0 | -0.3 | 0.8 | 6.2 |
| 2008 | 4.1 | 0.0 | 4.1 | 3.0 | 0.0 | 3.0 | 3.7 | 0.0 | 2.1 | -0.2 | -0.3 | 0.8 | 6.3 |
| 2009 | 4.2 | 0.0 | 4.2 | 3.0 | 0.0 | 3.0 | 3.8 | 0.0 | 2.1 | -0.2 | -0.2 | 0.7 | 6.3 |
| 2010 | 4.2 | 0.0 | 4.2 | 3.0 | 0.0 | 3.0 | 3.8 | 0.0 | 2.0 | -0.2 | -0.1 | 0.8 | 6.3 |
| 2015 | 4.2 | 0.0 | 4.2 | 3.0 | 0.0 | 3.0 | 3.8 | 0.0 | 3.0 | 0.1 | -0.5 | 0.8 | 7.3 |
| 2020 | 4.2 | 0.0 | 4.2 | 3.0 | 0.0 | 3.0 | 3.8 | 0.0 | 3.0 | 0.1 | -0.2 | 0.8 | 7.7 |
| 2025 | 4.2 | 0.0 | 4.2 | 3.0 | 0.0 | 3.0 | 3.9 | 0.0 | 2.6 | 0.0 | 0.1 | 0.9 | 7.6 |

[1]Percent increase in year indicated over previous year, on an incurred basis.
[2]Reflects the allowances provided for in the prospective payment update factors.

Note: Historical and projected data reflect the hospital input price index, which was recalibrated to a 1992 base year in 1997.

Increases in hospital workers' hourly earnings can be analyzed and projected in terms of (1) the assumed increases in hourly earnings in employment in the general economy, and (2) the difference between increases in hourly earnings in the general economy and the hospital hourly earnings used in the hospital input price index. Since HI began, the differential between hospital workers' hourly earnings and hourly earnings in the general economy has fluctuated widely. This differential has averaged about –0.8 percent since 1992 and is assumed to fluctuate, leveling off to zero for most of the projection period.

Non-labor cost increases can similarly be analyzed in terms of a known, economy-wide price measure (the Consumer Price Index, or CPI) and a differential between the CPI and hospital-specific prices. This differential reflects price increases for non-labor goods and services that are purchased by hospitals and that do not parallel increases in the CPI. Although the price differential has fluctuated erratically in the past, it has averaged about –0.4 percent during 1992-2001. Over the short term, the hospital price differential is also assumed to fluctuate, leveling off to zero for most of the projection period.

The final input price index is calculated as a weighted average of the labor and non-labor factors described above. The weights reflect the relative use of each factor by hospitals (currently about 65 percent labor and 35 percent non-labor).

The unit input intensity allowance is generally a downward adjustment provided for by law in the prospective payment update factor; that is, the unit input intensity allowance is the amount subtracted from the input price index to yield the update factor.[21] For fiscal years 1998-2003, the allowances are prescribed in the Balanced Budget Act of 1997 as revised by subsequent legislation in 1999 and 2000. Beginning in fiscal year 2004, the law provides that future increases in payments to prospective payment system hospitals for covered admissions will equal the increase in the hospital input price index. Thus, the unit input intensity allowance, as indicated in table III.A1, is assumed to equal zero for the rest of the years in the first 25-year projection period.

[21]It should be noted that the update factors are generally prescribed on a fiscal-year basis, while table III.A1 is on a calendar-year basis. Calculations have therefore been performed to estimate the unit input intensity allowance on a calendar-year basis.

Increases in payments for inpatient hospital services also reflect increases in the number of inpatient hospital admissions covered under HI. As shown in table III.A1, increases in admissions are attributable to increases in both HI fee-for-service enrollment and admission incidence (admissions per beneficiary). The historical and projected increases in enrollment reflect an increase in the population aged 65 and over that is more rapid than in the total population of the United States, as well as the coverage of certain disabled beneficiaries and persons with end-stage renal disease. Increases in the enrollment are expected to continue, mirroring the ongoing demographic shift into categories of the population that are eligible for HI protection. During the 1990s, the choice of more beneficiaries to enroll in managed care plans was an offsetting effect, which is shown in the managed care shift effect column of table III.A1. In other words, greater enrollment in managed care plans reduces the number of beneficiaries with fee-for-service Medicare coverage and thereby reduces hospital admissions paid through fee-for-service. (In the last few years, however, this managed care shift effect has reversed, as significant numbers of beneficiaries have left managed care plans.) In addition, increases in the average age of beneficiaries lead to higher levels of admission incidence.[22]

Since the beginning of the prospective payment system (PPS), increases in inpatient hospital payments from "other sources" are primarily due to three factors: (1) the changes in diagnosis-related group (DRG) coding as hospitals continue to adjust to the PPS; (2) the trend toward treating less complicated (and thus less expensive) cases in outpatient settings, resulting in an increase in the average prospective payment per admission; and (3) legislation affecting the payment rates. The impact of several budget reconciliation acts, sequesters as required by the Gramm-Rudman-Hollings Act, and additional legislative effects are reflected in other sources, as appropriate. The average complexity of hospital admissions (case mix) is expected to increase by 0.5 percent in fiscal year 2002 and then to increase for fiscal years 2003 through 2026 by 1.0 percent annually—as a result of an assumed continuation of the current trend toward treating less complicated cases in outpatient settings, ongoing changes in DRG coding, and the overall impact of new technology. Additionally, part of the increase from other sources can be attributed to the increase in payments for certain costs, not included in the DRG

[22]For 2010-2020, this factor is estimated to be negative, reflecting the influx of age-65 beneficiaries (and the resulting reduction in the average age of beneficiaries) due to the retirement of the baby boom. By 2025, the aging of the baby boom is expected to increase the incidence of admissions.

payment, that are generally increasing at a rate slower than the input price index. Other possible sources of both relative increases and decreases in payments include (1) a shift to more or less expensive admissions due to changes in the demographic characteristics of the covered population; (2) changes in medical practice patterns; and (3) adjustments in the relative payment levels for various DRGs, or addition/deletion of DRGs, in response to changes in technology.

The increases in the input price index (less any intensity allowance specified in the law), units of service, and other sources are compounded to calculate the total increase in payments for inpatient hospital services. These overall increases are shown in the last column of table III.A1.

### *c. Fee-for-Service Payments for Skilled Nursing Facility, Home Health Agency, and Hospice Services*

Historical experience with the number of days of care covered in skilled nursing facilities (SNFs) under HI has been characterized by wide swings. This extremely volatile experience has resulted, in part, from legislative and regulatory changes and from judicial decisions affecting the scope of coverage. Most recently, at the start of the prospective payment system (PPS) in 1998 and 1999, there were large decreases in utilization. The intermediate projections reflect modest increases in covered SNF days based on growth and aging of the population.

Increases in the average HI cost per day[23] in SNFs are caused principally by increasing payroll costs for nurses and other required skilled labor. From 1991 through 1996, large rates of increase in cost per day occurred due to nursing home reform regulations. For 1997 and 1998, this increase was smaller than during the previous 6 years, but still large by historical standards. Projected rates of increase in cost per day are assumed to decline to a level slightly higher than increases in general earnings throughout the projection period. For 1998 and later, adjustments are included to reflect the implementation of the new PPS for SNFs, as required by the Balanced Budget Act of 1997. Increases in reimbursement per day also reflect implementation and expiration of special provisions from

[23]Cost is defined to be the total of HI reimbursement and beneficiary cost sharing.

the Balanced Budget Refinement Act of 1999 and the Benefits Improvement and Protection Act of 2000.

The resulting increases in fee-for-service expenditures for SNF services are shown in table III.A2.

**Table III.A2.—Relationship between Increases in HI Expenditures and Increases in Taxable Payroll[1]**

| Calendar year | Inpatient hospital[2, 3] | Skilled nursing facility[3] | Home health agency[3] | Managed care | Weighted average[3,4] | HI administrative costs[3,5] | HI expenditures[3,5] | HI taxable payroll | Ratio of expenditures to payroll[6] |
|---|---|---|---|---|---|---|---|---|---|
| Historical data: | | | | | | | | | |
| 1992 | 11.9% | 45.8% | 39.5% | 20.9% | 15.9% | 5.7% | 15.7% | 5.0% | 10.3% |
| 1993 | 5.5 | 34.2 | 31.4 | 30.7 | 10.5 | -17.0 | 10.1 | 4.1 | 5.7 |
| 1994 | 7.0 | 43.0 | 33.2 | 33.0 | 13.7 | 31.6 | 13.9 | 11.7 | 2.0 |
| 1995 | 4.6 | 19.5 | 18.1 | 39.1 | 9.6 | -1.6 | 9.5 | 6.1 | 3.1 |
| 1996 | 7.1 | 19.3 | 8.0 | 45.3 | 10.9 | 3.1 | 10.8 | 5.7 | 4.9 |
| 1997 | 1.5 | 15.1 | -1.6 | 39.9 | 5.8 | 26.1 | 6.1 | 7.6 | -1.4 |
| 1998 | -1.7 | -0.7 | -43.2 | 20.1 | -4.0 | 6.4 | -3.9 | 7.8 | -10.9 |
| 1999 | 1.7 | -19.1 | -32.7 | 10.1 | -1.3 | 3.0 | -1.2 | 6.7 | -7.5 |
| 2000 | 1.8 | 9.5 | -8.7 | 2.0 | 2.2 | 38.0 | 2.7 | 7.6 | -4.5 |
| 2001 | 7.7 | 20.7 | 23.5 | -3.7 | 7.8 | -11.9 | 7.4 | 5.4 | 1.9 |
| Intermediate estimates: | | | | | | | | | |
| 2002 | 6.4 | 2.5 | 6.1 | -5.9 | 4.2 | 20.7 | 4.4 | 2.4 | 2.0 |
| 2003 | 5.2 | -8.9 | -11.8 | -2.0 | 2.0 | 5.9 | 2.1 | 5.7 | -3.4 |
| 2004 | 6.2 | 8.6 | 10.0 | -0.7 | 5.6 | 2.5 | 5.6 | 5.5 | 0.1 |
| 2005 | 6.2 | 8.6 | 6.9 | 1.4 | 5.9 | 3.8 | 5.8 | 5.3 | 0.4 |
| 2006 | 6.0 | 8.0 | 6.7 | 3.4 | 5.9 | 3.2 | 5.8 | 5.3 | 0.5 |
| 2007 | 6.1 | 7.0 | 6.6 | 3.8 | 6.0 | 3.3 | 5.9 | 5.3 | 0.6 |
| 2008 | 6.3 | 7.0 | 6.4 | 7.5 | 6.5 | 3.4 | 6.4 | 5.1 | 1.2 |
| 2009 | 6.3 | 7.0 | 5.6 | 8.0 | 6.5 | 3.4 | 6.4 | 5.0 | 1.4 |
| 2010 | 6.3 | 7.1 | 5.7 | 8.2 | 6.6 | 3.4 | 6.5 | 4.9 | 1.5 |
| 2015 | 7.3 | 7.0 | 6.2 | 6.6 | 7.1 | 4.4 | 7.1 | 4.5 | 2.4 |
| 2020 | 7.7 | 7.7 | 7.1 | 7.0 | 7.5 | 5.0 | 7.5 | 4.4 | 2.9 |
| 2025 | 7.6 | 8.4 | 7.6 | 7.5 | 7.6 | 5.0 | 7.6 | 4.4 | 3.0 |

[1]Percent increase in year indicated over previous year.
[2]This column may differ slightly from the last column of table II.C5, since table II.C5 includes all persons eligible for HI protection while this table excludes noninsured persons.
[3]Costs attributable to insured beneficiaries only, on an incurred basis. Benefits and administrative costs for noninsured persons are expected to be financed through general revenue transfers and premium payments, rather than through payroll taxes.
[4]Includes costs for hospice care.
[5]Includes costs of Peer Review Organizations.
[6]Percent increase in the ratio of HI expenditures to taxable payroll. This is equivalent to the differential between the increase in HI costs and the increase in taxable payroll.

Until recently, HI experience with home health agency (HHA) payments had shown a generally upward trend, frequently with sharp increases in the number of visits from year to year. During 1989-1995, extremely large increases in the number of visits occurred. Growth slowed dramatically in 1996 and 1997, in part as a result of intensified efforts to identify fraudulent activities in this area. The growth in the benefit was also heavily affected by the enactment of the Balanced Budget Act of 1997, which introduced interim per beneficiary cost limits, at levels resulting in substantially lower aggregate payments. These cost limits were used until the

prospective payment system was implemented in October 2000. For 1998 through 2000, large decreases in utilization have been observed, with preliminary data showing a further decline in 2001. For 2002 and the projection period, modest increases are assumed, based on growth and aging of the population.

In addition, beginning in 1998, certain categories of HHA services, representing about two-thirds of all visits, were transferred from HI to SMI, but with a portion of the cost of the transferred services met through the HI trust fund during a 6-year transitional period. At the start of the HHA prospective payment system, the transferred services represented a little over one-half of all HHA services. The HHA estimates shown in this report represent the total cost to HI from (1) HI-covered HHA services, and (2) the transitional payments to the SMI trust fund for the applicable portion of SMI HHA costs, as specified by the Balanced Budget Act of 1997. Reimbursement per episode of care[24] is assumed to increase at a slightly higher rate than increases in general earnings, but adjustments to reflect the limiting, by legislation, of HHA reimbursement per episode are included where appropriate. In particular, present law specifies that payments will be equivalent to a 15-percent reduction in the prior interim cost limits, effective October 2002. The resulting increases in fee-for-service expenditures for HHA services are shown in table III.A2.

HI covers certain hospice care for terminally ill beneficiaries. Hospice payments are very small relative to total HI benefit payments, but they have grown rapidly in most years. This growth rate slowed dramatically in recent years but rebounded sharply in 1999 through 2001. Although detailed hospice data are scant at this time, estimates for hospice benefit payment increases are based on mandated daily payment rates and annual payment caps, and they assume modest growth in the number of covered days. Increases in hospice payments are not shown separately in table III.A2 due to their extremely small contribution to the weighted average increase for all HI types of service; they are, however, included in the average.

### *d. Managed Care Costs*

Until very recently, HI experience with managed care payments has shown an upward trend. Per capita amounts have increased following the same trend as fee-for-service per capita growth, based on the

[24]Under the HHA prospective payment system, Medicare payments are made for each episode of care, rather than for each individual home health visit.

formula in the law to calculate managed care capitation amounts. The projection of future per capita amounts follows the requirements of current law, with updates based on the per capita growth for all of Medicare, less specified adjustments in 1998 to 2002.

The major reason for the past rapid growth in HI managed care expenditures has been the increase in managed care enrollment. This growth in enrollment was quite large in the mid-1980s, slowed in the late 1980s, then increased very rapidly through the mid-1990s. In the late 1990s, growth slowed to a more moderate level. Significant decreases occurred in 2001 and at the beginning of 2002, based on preliminary plan enrollment data. Slower decreases are assumed for the next few years as the provisions in the Balanced Budget Act of 1997 (as subsequently modified) continue to limit growth in capitation rates. Thereafter, Medicare+Choice enrollment is assumed to gradually accelerate somewhat.

#### *e. Administrative Expenses*

Historically, the cost of administering the HI trust fund has remained relatively small in comparison with benefit amounts. The ratio of administrative expenses to benefit payments has generally fallen within the range of 1 to 3 percent. The short-range projection of administrative cost is based on estimates of workloads and approved budgets for intermediaries and the Centers for Medicare & Medicaid Services. In the long range, administrative cost increases are based on assumed increases in workloads, primarily due to growth and aging of the population, and on assumed unit cost increases of slightly less than the increases in average hourly earnings that are shown in table III.A1.

### 2. Financing Analysis Methodology

Because the HI trust fund is supported by payroll taxes, in order to analyze costs and evaluate the financing, HI costs must be compared on a year-by-year basis with the taxable payroll, which provides most of the source of income for these costs. Since the vast majority of total HI costs are related to insured beneficiaries, and since general revenue appropriations and premium payments are expected to support the uninsured segments, the remainder of this section will focus on the financing for insured beneficiaries only.

### *a. Taxable Payroll*

Taxable payroll increases occur as a result of increases in both average covered earnings and the number of covered workers. The taxable payroll projection used in this report is based on the same economic assumptions used in the OASDI report. The projected increases in taxable payroll for this report, under the intermediate assumptions, are shown in table III.A2.

### *b. Relationship between HI Costs and Taxable Payroll*

The single most meaningful measure of cost increases, with reference to the financing of the system, is the relationship between cost increases and taxable payroll increases. If costs increase more rapidly than taxable payroll, either income rates must be increased or costs reduced (or some combination thereof) to finance the system in the future. Table III.A2 shows the projected increases in HI costs relative to taxable payroll over the first 25-year projection period. These relative increases are negative for 2003, due to the home health benefit being shifted out of HI and because of the other savings provisions in the recent legislation. Thereafter, the increases grow to the range of 0.4 to 1.5 percent per year until 2010, and then to a level of about 3.0 percent per year by 2025 for the intermediate assumption, as the post-World War II baby boom population becomes eligible for benefits.

The result of these relative growth rates is initially a temporary reduction in the cost of HI as a percentage of taxable payroll, followed by a steady increase in the year-by-year ratios of HI expenditures to taxable payroll, as shown in table III.A3. Under the low cost alternative, increases in HI expenditures follow a similar pattern relative to increases in taxable payroll, but at a somewhat lower rate; the rate becomes slightly lower than the rate for taxable payroll by 2010 but then increases, reaching about 1.1 percent more per year than taxable payroll by 2025. The high cost alternative follows a comparable pattern but at a somewhat higher rate than under the intermediate assumptions, gradually becoming about 3.4 percent more than taxable payroll by 2010 and then increasing to about 5.0 percent more than taxable payroll by 2025.

**Table III.A3.—Summary of HI Alternative Projections**

| Calendar year | Increases in aggregate HI inpatient hospital payments[1] | | | | Changes in the relationship between expenditures and payroll[1] | | | Expenditures as a percent of taxable payroll[3,4,5] |
|---|---|---|---|---|---|---|---|---|
| | Average hourly earnings | CPI | Other factors[2] | Total[3] | HI expendi-tures[3,4,5] | Taxable payroll | Ratio of expenditures to payroll | |
| Intermediate: | | | | | | | | |
| 2002 | 3.1% | 1.3% | 3.7% | 6.3% | 4.4% | 2.4% | 2.0% | 2.75% |
| 2003 | 4.6 | 2.5 | 1.3 | 5.2 | 2.1 | 5.7 | -3.4 | 2.65 |
| 2004 | 4.0 | 2.8 | 2.5 | 6.1 | 5.6 | 5.5 | 0.1 | 2.66 |
| 2005 | 4.1 | 2.9 | 2.5 | 6.2 | 5.8 | 5.3 | 0.4 | 2.67 |
| 2006 | 4.1 | 3.0 | 2.2 | 6.0 | 5.8 | 5.3 | 0.5 | 2.68 |
| 2007 | 4.1 | 3.0 | 2.4 | 6.2 | 5.9 | 5.3 | 0.6 | 2.70 |
| 2008 | 4.1 | 3.0 | 2.4 | 6.3 | 6.4 | 5.1 | 1.2 | 2.73 |
| 2009 | 4.2 | 3.0 | 2.4 | 6.3 | 6.4 | 5.0 | 1.4 | 2.77 |
| 2010 | 4.2 | 3.0 | 2.4 | 6.3 | 6.5 | 4.9 | 1.5 | 2.81 |
| 2015 | 4.2 | 3.0 | 3.3 | 7.3 | 7.1 | 4.5 | 2.4 | 3.12 |
| 2020 | 4.2 | 3.0 | 3.7 | 7.7 | 7.5 | 4.4 | 2.9 | 3.59 |
| 2025 | 4.2 | 3.0 | 3.6 | 7.6 | 7.6 | 4.4 | 3.0 | 4.19 |
| Low cost: | | | | | | | | |
| 2002 | 3.6 | 1.2 | 0.5 | 3.2 | 2.0 | 3.3 | -1.3 | 2.66 |
| 2003 | 4.3 | 2.0 | -0.1 | 3.4 | 0.6 | 6.0 | -5.0 | 2.52 |
| 2004 | 3.6 | 2.0 | 0.9 | 4.0 | 3.7 | 5.6 | -1.8 | 2.48 |
| 2005 | 3.3 | 2.0 | 0.7 | 3.6 | 3.3 | 4.8 | -1.5 | 2.44 |
| 2006 | 3.3 | 2.0 | 0.4 | 3.2 | 3.2 | 4.5 | -1.3 | 2.41 |
| 2007 | 3.3 | 2.0 | 0.5 | 3.4 | 3.3 | 4.5 | -1.2 | 2.38 |
| 2008 | 3.5 | 2.0 | 0.7 | 3.7 | 4.0 | 4.7 | -0.7 | 2.37 |
| 2009 | 3.6 | 2.0 | 0.8 | 3.8 | 4.1 | 4.7 | -0.5 | 2.35 |
| 2010 | 3.6 | 2.0 | 0.7 | 3.8 | 4.1 | 4.5 | -0.4 | 2.34 |
| 2015 | 3.6 | 2.0 | 1.7 | 4.8 | 4.7 | 4.2 | 0.5 | 2.38 |
| 2020 | 3.6 | 2.0 | 2.0 | 5.2 | 5.1 | 4.0 | 1.0 | 2.49 |
| 2025 | 3.6 | 2.0 | 1.9 | 5.1 | 5.2 | 4.0 | 1.1 | 2.64 |
| High cost: | | | | | | | | |
| 2002 | 2.7 | 1.4 | 7.2 | 9.5 | 7.1 | 1.5 | 5.5 | 2.85 |
| 2003 | 5.3 | 3.2 | 3.1 | 7.8 | 4.3 | 6.4 | -2.0 | 2.79 |
| 2004 | 5.3 | 4.6 | 3.8 | 9.1 | 8.2 | 6.7 | 1.4 | 2.83 |
| 2005 | 4.8 | 5.8 | 3.0 | 8.3 | 7.9 | 4.8 | 2.9 | 2.91 |
| 2006 | 6.5 | 5.8 | 2.5 | 8.9 | 8.6 | 5.9 | 2.6 | 2.99 |
| 2007 | 6.3 | 4.9 | 4.0 | 10.1 | 9.7 | 7.9 | 1.7 | 3.04 |
| 2008 | 4.8 | 4.1 | 4.5 | 9.3 | 9.3 | 5.8 | 3.3 | 3.14 |
| 2009 | 4.7 | 4.0 | 4.1 | 8.7 | 8.8 | 5.2 | 3.4 | 3.25 |
| 2010 | 4.8 | 4.0 | 4.1 | 8.8 | 8.9 | 5.3 | 3.4 | 3.36 |
| 2015 | 4.8 | 4.0 | 5.0 | 9.8 | 9.5 | 4.9 | 4.4 | 4.11 |
| 2020 | 4.8 | 4.0 | 5.4 | 10.2 | 10.0 | 4.9 | 4.9 | 5.19 |
| 2025 | 4.9 | 4.0 | 5.2 | 10.1 | 10.1 | 4.8 | 5.0 | 6.66 |

[1]Percent increase for the year indicated over the previous year.
[2]Other factors include hospital hourly earnings, hospital price input intensity, unit input intensity allowance, units of service as measured by admissions, and additional sources.
[3]On an incurred basis.
[4]Includes expenditures attributable to insured beneficiaries only.
[5]Includes hospital, SNF, HHA, managed care, and hospice expenditures; administrative costs; and costs of Peer Review Organizations.

## 3. Projections under Alternative Assumptions

In almost every year since the trust fund was established, average HI expenditures per beneficiary have increased substantially faster than increases in average earnings and prices in the general economy. Table III.A2 shows the estimated past experience of HI from 1992 to 2001. As mentioned earlier, HI now makes most payments to

hospitals on a prospective basis. Payments to skilled nursing facilities have been made prospectively since mid-1998, and home health reimbursement became prospective in October 2000. The prospective payment systems have made (and are expected to continue to make) HI outlays potentially less vulnerable to excessive rates of growth in the health care industry. However, there is still considerable uncertainty in projecting HI expenditures—for inpatient hospital services as well as for other types of covered services—due to the uncertainty of the underlying economic assumptions and utilization increases. Uncertainty in projecting HI expenditures also exists because of the possibility that future legislation will affect unit payment levels, particularly for inpatient hospital services. Although current law is assumed throughout the estimates shown in this report, legislation has been enacted affecting the payment levels to hospitals for the past 16 years and for the next 2 years, and future legislation is probable.

In view of the uncertainty of future cost trends, projected HI costs have been prepared under three alternative sets of assumptions. A summary of the assumptions and results is shown in table III.A3. Increases in the economic factors (average hourly earnings and CPI) for the three alternatives are consistent with those underlying the OASDI report.

HI costs beyond the first 25-year projection period are based on the assumption that average per beneficiary expenditures (excluding demographic impacts) will increase at a rate of 1 percent faster than the Gross Domestic Product (GDP) per capita. HI expenditures, which were about 2.7 percent of taxable payroll in 2001, increase to about 4.2 percent by the year 2025 and to about 10.6 percent by the year 2075 under the intermediate assumptions. Hence, if all of the projection assumptions are realized over time, the HI income rates provided in current law (3.34 percent of taxable payroll) will be grossly inadequate to support the HI cost.

During the first 25-year projection period, the low cost and high cost alternatives contain assumptions that result in HI costs increasing, relative to taxable payroll increases, approximately 2 percentage points less rapidly and 2 percentage points more rapidly, respectively, than the results under the intermediate assumptions. Costs beyond the first 25-year projection period assume that the 2-percentage-point differential gradually decreases until the year 2051, when HI cost increases relative to taxable payroll are approximately the same as under the intermediate assumptions. Under the low cost alternative,

HI expenditures would be about 2.6 percent of taxable payroll in the year 2025, increasing to about 5.1 percent of taxable payroll by 2075. Under the high cost alternative, HI expenditures in the year 2025 would increase to about 6.7 percent of taxable payroll, and to about 22.1 percent of taxable payroll in 2075.

## *B. Supplementary Medical Insurance*

### 1. Cost Projection Methodology

Estimates under the intermediate assumptions are prepared by establishing, for each category of enrollee and for each type of service, the allowed charges or costs incurred per enrollee for a recent year (to serve as a projection base) and then projecting these charges through the estimation period. The per enrollee charges are then converted to reimbursement amounts by subtracting the per enrollee values of the deductible and coinsurance. Aggregate reimbursement amounts are calculated by multiplying the per enrollee reimbursement amounts by the projected enrollment. In order to estimate cash expenditures, an allowance is made for the delay between receipt of, and payment for, service.

#### *a. Projection Base*

To establish a suitable base from which to project the future SMI costs, the incurred payments for services provided must be reconstructed for the most recent period for which a reliable determination can be made. Therefore, payments to providers must be attributed to dates of service, rather than to payment dates; in addition, the nonrecurring effects of any changes in regulations, legislation, or administration, and of any items affecting only the timing and flow of payments to providers, must be eliminated. As a result, the rates of increase in the SMI incurred cost differ from the increases in cash expenditures.

(1) Carrier Services

Reimbursement amounts for physician services, durable medical equipment (DME), laboratory tests performed in physician offices and independent laboratories, and other services (such as free-standing ambulatory surgical center facility services, ambulance, and supplies) are paid through organizations acting for the Centers for Medicare & Medicaid Services (CMS). These organizations, referred to as "carriers," determine whether billed services are covered under SMI and establish the allowed charges for covered services. A record of the allowed charges, the applicable deductible and coinsurance, and the amount reimbursed after reduction for coinsurance and the deductible is transmitted to CMS.

The data are tabulated on an incurred basis. As a check on the validity of the projection base, incurred reimbursement amounts are compared with cash expenditures reported by the carriers through an independent reporting system.

(2) Intermediary Services

Reimbursement amounts for institutional services under SMI are paid by the same "fiscal intermediaries" that pay for HI services. Institutional care covered under SMI includes outpatient hospital services, home health agency services, laboratory services performed in hospital outpatient departments, and other services, such as renal dialysis performed in free-standing dialysis facilities, services in outpatient rehabilitation facilities, and services in rural health clinics.

Reimbursements for institutional services occur in two stages. First, bills are submitted to the intermediaries, and interim payments are made on the basis of these bills. The second stage takes place at the close of a provider's accounting period, when a cost report is submitted and lump-sum payments or recoveries are made to correct for the difference between interim payments and final settlement amounts for providing covered services (net of coinsurance and deductible amounts). Tabulations of the bills are prepared by date of service, and the lump-sum settlements, which are reported only on a cash basis, are adjusted (using approximations) to allocate them to the time of service.

(3) Managed Care Services

Managed care plans with contracts to provide health services to Medicare beneficiaries are reimbursed directly by CMS on either a reasonable cost or capitation basis. Comprehensive data on such direct reimbursements are available only on a cash basis. Certain approximations must be made to allocate expenses to the period when services were rendered.

### *b. Fee-for-Service Payments for Aged Enrollees and Disabled Enrollees without End-Stage Renal Disease*

Disabled persons with end-stage renal disease (ESRD) have per enrollee costs that are substantially higher and quite different in nature from those of most other disabled persons. Hence, SMI costs for them have been excluded from the analysis in this section and are contained in a later section. Similarly, costs associated with beneficiaries enrolled in managed care plans are discussed separately.

(1) Carrier Services

(a) Physician Services

Medicare payments for physician services are based on a fee schedule, which reflects the relative level of resources required for each service. The fee schedule amount is equal to the product of the procedure's relative value, a conversion factor, and a geographic adjustment factor. Payments are based on the lower of the actual charge and the fee schedule amount. Increases in physician fees are based on growth in the Medicare Economic Index (MEI),[25] plus a performance adjustment reflecting whether past growth in the volume and intensity of services met specified targets under the sustainable growth rate mechanism. Table III.B1 shows the projected MEI increases and performance adjustments for 2003 through 2011. The physician fee updates shown through 2002 are actual values. The modified update shown in column 4 reflects the growth in the MEI, the performance adjustment, and any legislative impacts, such as the addition of preventative services.

[25]The MEI is a measure of inflation in physician practice costs and general wage levels.

**Table III.B1.—Components of Increases in Total Allowed Charges per Fee-for-Service Enrollee for Carrier Services**

[In percent]

| Calendar year | Physician fee schedule: Increase due to price changes: MEI | MPA[1] | Physician update[2] | Modified update[3] | Residual factors | Total increase[4] | CPI | DME | Lab | Other carrier |
|---|---|---|---|---|---|---|---|---|---|---|
| Aged: | | | | | | | | | | |
| 1992 | 3.2 | -0.9 | 1.9 | 1.9 | 1.2 | 3.1 | 2.9 | 7.2 | 9.2 | 4.6 |
| 1993 | 2.7 | -1.3 | 1.4[5] | 1.4 | -1.5 | -0.1 | 2.8 | 20.1 | 2.6 | 7.2 |
| 1994 | 2.3 | 7.0 | 7.0[5] | 6.8 | 1.3 | 8.2 | 2.5 | 7.7 | -2.7 | 9.5 |
| 1995 | 2.1 | 7.5 | 7.5[5] | 7.3 | 1.5 | 8.9 | 2.9 | 16.1 | -4.0 | 5.4 |
| 1996 | 2.0 | -1.2 | 0.8[5] | 0.8 | -0.1 | 0.7 | 2.9 | 6.1 | -8.0 | 13.7 |
| 1997 | 2.0 | -1.4 | 0.6[5] | 0.6 | 3.6 | 4.3 | 2.3 | 12.0 | -5.2 | 14.9 |
| 1998 | 2.2 | 1.2 | 2.3[5] | 2.9 | 1.3 | 4.2 | 1.3 | -2.1 | -9.3 | 10.1 |
| 1999 | 2.3 | 0.0 | 2.3 | 2.7 | 1.2 | 3.9 | 2.2 | 5.0 | -0.1 | 9.9 |
| 2000 | 2.4 | 3.0 | 5.5 | 5.8 | 3.7 | 9.8 | 3.5 | 10.5 | 6.8 | 15.5 |
| 2001 | 2.0 | 3.0 | 4.8 | 5.7 | 2.2 | 8.0 | 2.8 | 11.1 | 5.3 | 13.8 |
| 2002 | 2.6 | -7.0 | -4.8 | -4.1 | 3.4 | -0.9 | 1.3 | 6.9 | 3.2 | 10.9 |
| 2003 | 1.6 | -7.0 | -5.7 | -5.6 | 4.2 | -1.6 | 2.5 | 5.6 | 3.3 | 10.3 |
| 2004 | 2.4 | -7.0 | -5.0 | -5.0 | 4.6 | -0.6 | 2.8 | 6.3 | 5.1 | 10.8 |
| 2005 | 1.7 | -4.7 | -2.3 | -2.3 | 3.8 | 1.4 | 2.9 | 6.1 | 5.3 | 10.2 |
| 2006 | 2.1 | -2.2 | -0.1 | -0.1 | 3.2 | 3.1 | 3.0 | 6.2 | 5.5 | 9.7 |
| 2007 | 1.9 | -0.5 | 1.4 | 1.4 | 2.7 | 4.1 | 3.0 | 6.3 | 5.6 | 8.9 |
| 2008 | 1.6 | 0.2 | 1.8 | 1.8 | 2.5 | 4.3 | 3.0 | 6.3 | 5.6 | 8.5 |
| 2009 | 1.6 | -0.3 | 1.3 | 1.3 | 2.6 | 3.9 | 3.0 | 6.3 | 5.6 | 8.5 |
| 2010 | 1.5 | -1.3 | 0.2 | 0.2 | 2.9 | 3.1 | 3.0 | 6.4 | 5.6 | 8.5 |
| 2011 | 1.5 | -1.6 | 0.0 | 0.0 | 2.5 | 2.5 | 3.0 | 6.4 | 5.6 | 8.5 |
| Disabled (excluding ESRD): | | | | | | | | | | |
| 1992 | 3.2 | -0.9 | 1.9 | 1.9 | -2.2 | -0.4 | 2.9 | 8.3 | 8.3 | 19.0 |
| 1993 | 2.7 | -1.3 | 1.4[5] | 1.4 | 6.4 | 7.9 | 2.8 | 18.0 | 5.5 | 30.4 |
| 1994 | 2.3 | 7.0 | 7.0[5] | 6.8 | 4.7 | 11.8 | 2.5 | 7.2 | 0.5 | 0.1 |
| 1995 | 2.1 | 7.5 | 7.5[5] | 7.3 | 1.2 | 8.5 | 2.9 | 18.2 | -2.2 | 3.9 |
| 1996 | 2.0 | -1.2 | 0.8[5] | 0.8 | -1.2 | -0.4 | 2.9 | 4.8 | 0.0 | 8.8 |
| 1997 | 2.0 | -1.4 | 0.6[5] | 0.6 | 1.5 | 2.1 | 2.3 | 14.7 | -4.5 | 7.9 |
| 1998 | 2.2 | 1.2 | 2.3[5] | 2.9 | 1.9 | 4.8 | 1.3 | 2.7 | -5.9 | 10.9 |
| 1999 | 2.3 | 0.0 | 2.3 | 2.7 | 0.9 | 3.5 | 2.2 | 2.7 | 3.0 | 11.1 |
| 2000 | 2.4 | 3.0 | 5.5 | 5.8 | 4.2 | 10.3 | 3.5 | 12.3 | 5.0 | 12.8 |
| 2001 | 2.0 | 3.0 | 4.8 | 5.7 | 2.1 | 7.9 | 2.8 | 11.5 | 6.3 | 16.2 |
| 2002 | 2.6 | -7.0 | -4.8 | -4.1 | 3.7 | -0.5 | 1.3 | 7.1 | 3.6 | 11.0 |
| 2003 | 1.6 | -7.0 | -5.7 | -5.6 | 4.2 | -1.7 | 2.5 | 5.6 | 3.2 | 10.1 |
| 2004 | 2.4 | -7.0 | -5.0 | -5.0 | 4.5 | -0.6 | 2.8 | 6.3 | 5.1 | 10.6 |
| 2005 | 1.7 | -4.7 | -2.3 | -2.3 | 3.7 | 1.3 | 2.9 | 6.0 | 5.3 | 10.1 |
| 2006 | 2.1 | -2.2 | -0.1 | -0.1 | 3.2 | 3.0 | 3.0 | 6.2 | 5.5 | 9.6 |
| 2007 | 1.9 | -0.5 | 1.4 | 1.4 | 2.7 | 4.1 | 3.0 | 6.3 | 5.6 | 8.9 |
| 2008 | 1.6 | 0.2 | 1.8 | 1.8 | 2.5 | 4.3 | 3.0 | 6.3 | 5.6 | 8.4 |
| 2009 | 1.6 | -0.3 | 1.3 | 1.3 | 2.6 | 3.9 | 3.0 | 6.3 | 5.6 | 8.4 |
| 2010 | 1.5 | -1.3 | 0.2 | 0.2 | 2.9 | 3.1 | 3.0 | 6.3 | 5.6 | 8.5 |
| 2011 | 1.5 | -1.6 | 0.0 | 0.0 | 2.5 | 2.5 | 3.0 | 6.4 | 5.6 | 8.5 |

[1]Medicare performance adjustment.

[2]Reflects the growth in the MEI, the performance adjustment, and legislation that impacts the physician fee schedule update. The legislative impacts are -0.4 percent in 1992, -2.3 percent in 1994, -2.1 percent in 1995, -1.1 percent in 1998, -0.2 percent in 2001-2004, and 0.8 percent in 2005.

[3]Reflects the growth in the MEI, the performance adjustment, and all legislation affecting physician services— for example, the addition of new preventative services enacted in 1997 and 2000. The legislative impacts would include those listed in footnote 2.

[4]Equals combined increases in allowed fees and residual factors.

[5]For this year there were separate updates for surgery, primary care, and other physician services. This value is the weighted average of these updates.

Per capita physician charges also have increased each year as a result of a number of other factors besides fee increases, including more physician visits per enrollee, the aging of the Medicare population, greater use of specialists and more expensive techniques, and certain administrative actions. The fifth column of table III.B1 shows the increases in charges per enrollee resulting from these residual factors. Because the measurement of increased allowed charges per service is subject to error, this error is included implicitly under residual causes. Based on the increases in table III.B1, table III.B2 shows the estimates of the incurred reimbursement for physician services per fee-for-service enrollee.

**Table III.B2.—Incurred Reimbursement Amounts per Fee-for-Service Enrollee for Carrier Services**

| Calendar year | Fee-for-service enrollment [millions] | Physician fee schedule | DME | Lab | Other carrier |
|---|---|---|---|---|---|
| Aged: | | | | | |
| 1992 | 28.469 | $832.98 | $71.84 | $90.09 | $106.71 |
| 1993 | 28.683 | 834.94 | 87.49 | 92.30 | 118.65 |
| 1994 | 28.657 | 908.50 | 94.76 | 89.78 | 130.30 |
| 1995 | 28.387 | 992.64 | 109.77 | 86.36 | 137.56 |
| 1996 | 27.807 | 999.97 | 116.26 | 79.50 | 156.39 |
| 1997 | 27.040 | 1,038.17 | 130.43 | 75.28 | 179.81 |
| 1998 | 26.267 | 1,090.24 | 127.51 | 68.25 | 198.31 |
| 1999 | 25.983 | 1,135.06 | 133.80 | 68.38 | 217.79 |
| 2000 | 26.161 | 1,251.53 | 148.00 | 72.90 | 251.51 |
| 2001 | 26.976 | 1,348.78 | 164.31 | 76.84 | 285.80 |
| 2002 | 27.647 | 1,348.85 | 176.63 | 79.34 | 319.18 |
| 2003 | 27.957 | 1,326.20 | 186.78 | 81.95 | 352.35 |
| 2004 | 28.277 | 1,317.93 | 198.86 | 86.15 | 390.68 |
| 2005 | 28.648 | 1,336.97 | 211.16 | 90.73 | 431.11 |
| 2006 | 28.931 | 1,380.01 | 224.56 | 95.73 | 473.10 |
| 2007 | 29.324 | 1,439.46 | 239.00 | 101.10 | 515.72 |
| 2008 | 29.784 | 1,505.34 | 254.38 | 106.76 | 559.64 |
| 2009 | 30.250 | 1,567.22 | 270.77 | 112.74 | 607.42 |
| 2010 | 30.668 | 1,618.00 | 288.25 | 119.04 | 659.45 |
| 2011 | 31.190 | 1,659.73 | 306.91 | 125.69 | 716.14 |
| Disabled (excluding ESRD): | | | | | |
| 1992 | 3.026 | $631.57 | $96.66 | $64.00 | $89.54 |
| 1993 | 3.243 | 686.00 | 115.34 | 67.41 | 121.28 |
| 1994 | 3.470 | 771.40 | 124.24 | 67.73 | 121.61 |
| 1995 | 3.643 | 837.99 | 146.84 | 66.36 | 126.65 |
| 1996 | 3.777 | 834.81 | 153.54 | 66.46 | 137.88 |
| 1997 | 3.840 | 854.52 | 176.59 | 63.51 | 148.72 |
| 1998 | 3.918 | 896.18 | 181.17 | 59.72 | 165.10 |
| 1999 | 4.020 | 929.33 | 185.83 | 61.45 | 183.09 |
| 2000 | 4.129 | 1,028.31 | 208.71 | 64.56 | 206.28 |
| 2001 | 4.337 | 1,109.26 | 234.36 | 68.91 | 239.03 |
| 2002 | 4.540 | 1,112.24 | 251.99 | 71.77 | 268.13 |
| 2003 | 4.677 | 1,092.71 | 266.32 | 74.06 | 295.50 |
| 2004 | 4.833 | 1,085.41 | 283.42 | 77.81 | 327.25 |
| 2005 | 4.989 | 1,100.63 | 300.84 | 81.91 | 360.77 |
| 2006 | 5.131 | 1,135.70 | 319.82 | 86.40 | 395.60 |
| 2007 | 5.269 | 1,184.31 | 340.29 | 91.21 | 431.00 |
| 2008 | 5.397 | 1,238.12 | 362.11 | 96.30 | 467.49 |
| 2009 | 5.524 | 1,288.64 | 385.35 | 101.67 | 507.20 |
| 2010 | 5.653 | 1,330.00 | 410.14 | 107.34 | 550.43 |
| 2011 | 5.774 | 1,364.06 | 436.59 | 113.33 | 597.53 |

(b) DME, Laboratory, and Other Carrier Services

As with physician services, over time unique fee schedules or reimbursement mechanisms have been established for virtually all other non-physician carrier services. Table III.B1 shows the increases in the allowed charges per fee-for-service enrollee for DME, laboratory services, and other carrier services. Based on the increases in table III.B1, table III.B2 shows the corresponding estimates of the average incurred reimbursement for these services per fee-for-service enrollee. The fee schedules for each of these expenditure categories

are updated by increases in the CPI, together with applicable legislated limits on payment updates. In addition, per capita charges for these expenditure categories have grown as a result of a number of other factors, including increased number of services provided, the aging of the Medicare population, more expensive services, and certain administrative actions. This growth is projected based on recent past trends in growth per enrollee.

(2) Intermediary Services

Over the years, legislation has been enacted to establish new payment systems for virtually all SMI intermediary services. These changes have been made in an effort to slow the rate of growth in SMI expenditures. A fee schedule was established for tests performed in laboratories in hospital outpatient departments. The Balanced Budget Act of 1997 (BBA) implemented a prospective payment system (PPS), effective August 1, 2000, for services performed in the outpatient department of a hospital. It also implemented a PPS for home health agency services, which began October 1, 2000.

The historical and projected increases in charges and costs per fee-for-service enrollee for intermediary services are shown in table III.B3. The projected increases shown in this table reflect the impact of the BBA, the provisions of which include the transfer of a substantial portion of home health agency (HHA) services from the HI trust fund to the SMI trust fund, starting in 1998. All benefit payments for transferred HHA services are to be paid out of the SMI trust fund beginning January 1998. However, for the 6-year period 1998 through 2003, sums of money will also be transferred from the HI trust fund to the SMI trust fund to phase in the financial impact of the transfer of these services. It should be noted that in this section, with the exception of table III.B8, the estimates for HHA costs for 1998 through 2003 are the gross amounts associated with the payment of benefits and are not adjusted for the funds transferred from the HI trust fund.

As indicated in table III.B3, expenditures for outpatient hospital services are expected to increase significantly due to provisions in the Balanced Budget Refinement Act of 1999 and the Benefits Improvement and Protection Act of 2000 that reduce the beneficiaries' coinsurance payments but maintain the same total payment to the hospital. The result is that Medicare pays a larger portion of the total outpatient hospital costs.

Based on the increases in table III.B3, table III.B4 shows the estimates of the incurred reimbursement for the various intermediary services per fee-for-service enrollee. Each of these expenditure categories is projected on the basis of recent past trends in growth per enrollee, together with applicable legislated limits on payment updates.

**Table III.B3.—Components of Increases in Recognized Charges and Costs per Fee-for-Service Enrollee for Intermediary Services**

[In percent]

| Calendar year | Outpatient hospital | Home health agency[1] | Outpatient lab | Other intermediary |
|---|---|---|---|---|
| Aged: | | | | |
| 1992 | 13.4 | 30.8 | 20.9 | 21.5 |
| 1993 | 7.1 | 19.2 | 4.6 | 26.3 |
| 1994 | 9.0 | 22.6 | 7.6 | 19.3 |
| 1995 | 10.3 | 23.1 | 0.7 | 20.3 |
| 1996 | 8.8 | 8.0 | 5.9 | 18.0 |
| 1997 | 7.9 | 0.7 | 8.7 | 12.5 |
| 1998 | -0.7 | 3,024.0[2,3] | 4.1 | -1.5 |
| 1999 | 8.0 | -25.4[2,3] | 12.6 | -20.9 |
| 2000 | -3.6 | -14.6[3] | 6.9 | 17.7 |
| 2001 | 1.2 | 24.1[3] | 4.0 | 17.6 |
| 2002 | 2.1 | 20.9[3] | 3.3 | 0.1 |
| 2003 | 5.9 | 4.8[3] | 3.3 | -12.6 |
| 2004 | 5.5 | 8.6 | 5.1 | 5.8 |
| 2005 | 8.6 | 5.3 | 5.3 | 5.4 |
| 2006 | 7.8 | 5.5 | 5.5 | 5.2 |
| 2007 | 7.8 | 5.0 | 5.6 | 5.0 |
| 2008 | 7.8 | 4.6 | 5.6 | 4.9 |
| 2009 | 7.8 | 3.8 | 5.6 | 4.9 |
| 2010 | 7.8 | 4.2 | 5.6 | 4.8 |
| 2011 | 7.4 | 4.4 | 5.6 | 4.8 |
| Disabled (excluding ESRD): | | | | |
| 1992 | 15.7 | — | 16.5 | 28.7 |
| 1993 | 11.2 | — | -2.1 | 19.0 |
| 1994 | 12.5 | — | -0.3 | 4.5 |
| 1995 | 10.5 | — | -6.5 | -5.4 |
| 1996 | 4.8 | — | -11.2 | 26.3 |
| 1997 | 6.7 | — | 4.3 | 19.4 |
| 1998 | -1.1 | —[2,3] | 1.8 | 3.9 |
| 1999 | 4.8 | -25.2[2,3] | 13.1 | -15.3 |
| 2000 | -0.1 | -10.1[3] | 9.6 | -11.0 |
| 2001 | 4.1 | 24.2[3] | 13.0 | 0.3 |
| 2002 | 3.4 | 19.4[3] | 3.6 | 7.2 |
| 2003 | 5.8 | 4.2[3] | 3.2 | -28.1 |
| 2004 | 5.4 | 8.2 | 5.1 | 7.0 |
| 2005 | 8.5 | 5.1 | 5.3 | 7.0 |
| 2006 | 7.7 | 5.2 | 5.5 | 7.0 |
| 2007 | 7.7 | 5.2 | 5.6 | 7.0 |
| 2008 | 7.7 | 5.2 | 5.6 | 7.0 |
| 2009 | 7.8 | 4.5 | 5.6 | 7.0 |
| 2010 | 7.8 | 4.6 | 5.6 | 7.0 |
| 2011 | 7.4 | 5.1 | 5.6 | 7.0 |

[1]From July 1, 1981 to December 31, 1997, home health agency (HHA) services were almost exclusively provided by HI. However, for those SMI enrollees not entitled to HI, the coverage of these services was provided by SMI. During that time, since all SMI disabled enrollees were entitled to HI, their coverage of these services was provided by HI.

[2]Effective January 1, 1998, the coverage of a majority of HHA services for those individuals entitled to HI

and enrolled in SMI was transferred from HI to SMI. As a result, as of January 1, 1998, there was a large increase in SMI expenditures for these services for the aged enrollees, and SMI coverage for these services resumed for disabled enrollees.

[3]Does not reflect the impact of adjustment for monies transferred from the HI trust fund for HHA costs, as provided by the Balanced Budget Act of 1997.

**Table III.B4.—Incurred Reimbursement Amounts per Fee-for-Service Enrollee for Intermediary Services**

| Calendar year | Fee-for-service enrollment [millions] | Outpatient hospital | Home health agency | Outpatient lab | Other intermediary |
|---|---|---|---|---|---|
| Aged: | | | | | |
| 1992 | 28.469 | $192.95 | $3.45 | $29.59 | $54.64 |
| 1993 | 28.683 | 211.51 | 4.51 | 35.78 | 66.04 |
| 1994 | 28.657 | 222.64 | 5.38 | 37.43 | 83.20 |
| 1995 | 28.387 | 239.30 | 6.59 | 40.27 | 98.68 |
| 1996 | 27.807 | 263.54 | 8.11 | 40.54 | 118.50 |
| 1997 | 27.040 | 299.93 | 8.82 | 46.67 | 156.04 |
| 1998 | 26.267 | 271.63 | 275.61[1] | 48.58 | 151.28 |
| 1999 | 25.983 | 292.58 | 205.54[1] | 54.68 | 124.96 |
| 2000 | 26.161 | 280.13 | 175.58[1] | 58.46 | 148.58 |
| 2001 | 26.976 | 322.90 | 217.87[1] | 60.78 | 175.60 |
| 2002 | 27.647 | 337.38 | 263.35[1] | 62.76 | 175.35 |
| 2003 | 27.957 | 362.68 | 275.90[1] | 64.83 | 153.03 |
| 2004 | 28.277 | 392.24 | 299.50 | 68.14 | 162.02 |
| 2005 | 28.648 | 450.86 | 315.45 | 71.76 | 170.84 |
| 2006 | 28.931 | 514.69 | 332.65 | 75.70 | 179.85 |
| 2007 | 29.324 | 563.41 | 349.32 | 79.94 | 188.97 |
| 2008 | 29.784 | 616.26 | 365.51 | 84.41 | 198.40 |
| 2009 | 30.250 | 674.35 | 379.53 | 89.13 | 208.13 |
| 2010 | 30.668 | 737.37 | 395.30 | 94.11 | 218.23 |
| 2011 | 31.190 | 802.19 | 412.53 | 99.37 | 228.78 |
| Disabled (excluding ESRD): | | | | | |
| 1992 | 3.026 | 190.68 | 0.00 | 53.65 | 72.04 |
| 1993 | 3.243 | 215.12 | 0.00 | 62.49 | 92.18 |
| 1994 | 3.470 | 234.85 | 0.00 | 61.15 | 108.65 |
| 1995 | 3.643 | 261.82 | 0.00 | 60.97 | 112.38 |
| 1996 | 3.777 | 291.18 | 0.00 | 56.98 | 106.76 |
| 1997 | 3.840 | 305.79 | 0.00 | 52.79 | 160.11 |
| 1998 | 3.918 | 281.06 | 180.93[1] | 53.74 | 165.55 |
| 1999 | 4.020 | 287.14 | 135.40[1] | 60.77 | 143.57 |
| 2000 | 4.129 | 291.02 | 121.71[1] | 66.58 | 128.64 |
| 2001 | 4.337 | 348.28 | 151.18[1] | 75.24 | 133.15 |
| 2002 | 4.540 | 372.46 | 180.45[1] | 77.95 | 141.70 |
| 2003 | 4.677 | 399.84 | 187.96[1] | 80.48 | 101.09 |
| 2004 | 4.833 | 432.03 | 203.32 | 84.56 | 108.36 |
| 2005 | 4.989 | 495.20 | 213.71 | 89.01 | 116.12 |
| 2006 | 5.131 | 563.80 | 224.92 | 93.88 | 124.43 |
| 2007 | 5.269 | 616.54 | 236.64 | 99.11 | 133.32 |
| 2008 | 5.397 | 673.68 | 249.05 | 104.64 | 142.83 |
| 2009 | 5.524 | 736.43 | 260.28 | 110.47 | 153.00 |
| 2010 | 5.653 | 804.47 | 272.37 | 116.63 | 163.89 |
| 2011 | 5.774 | 874.46 | 286.31 | 123.13 | 175.55 |

[1]See footnote 3 of table III.B3.

### *c. Fee-for-Service Payments for Persons with End-Stage Renal Disease*

Most persons with ESRD are eligible to enroll for SMI coverage. For analytical purposes, enrollees with ESRD who are also eligible as Disability Insurance beneficiaries are included in this section because their per enrollee costs are both higher and different in nature from those of most other disabled persons. Specifically, most of the SMI reimbursements for these persons are for kidney transplants and renal dialysis.

The estimates under the intermediate assumptions reflect the unique payment mechanism through which ESRD services are reimbursed under Medicare. Also, the estimates assume a continued increase in enrollment. The historical and projected enrollment and costs for SMI benefits are shown in table III.B5.

**Table III.B5.—Enrollment and Incurred Reimbursement for End-Stage Renal Disease**

| | Average enrollment [thousands] | | Reimbursement [millions] | |
|---|---|---|---|---|
| Calendar year | Disabled ESRD | ESRD only | Disabled ESRD | ESRD only |
| 1992 | 55 | 63 | $1,013 | $959 |
| 1993 | 58 | 69 | 1,024 | 1,044 |
| 1994 | 62 | 75 | 1,103 | 1,192 |
| 1995 | 67 | 77 | 1,255 | 1,316 |
| 1996 | 72 | 20 | 1,416 | 1,432 |
| 1997 | 72 | 78 | 1,508 | 1,461 |
| 1998 | 77 | 79 | 1,433 | 1,326 |
| 1999 | 80 | 81 | 1,519 | 1,391 |
| 2000 | 85 | 84 | 1,396 | 1,537 |
| 2001 | 91 | 87 | 1,967 | 2,021 |
| 2002 | 96 | 89 | 1,746 | 1,915 |
| 2003 | 100 | 91 | 1,871 | 2,005 |
| 2004 | 105 | 93 | 2,011 | 2,099 |
| 2005 | 109 | 95 | 2,169 | 2,209 |
| 2006 | 113 | 96 | 2,336 | 2,323 |
| 2007 | 117 | 97 | 2,504 | 2,436 |
| 2008 | 120 | 98 | 2,678 | 2,550 |
| 2009 | 123 | 99 | 2,859 | 2,667 |
| 2010 | 127 | 99 | 3,048 | 2,786 |
| 2011 | 130 | 100 | 3,239 | 2,907 |

### *d. Managed Care Costs*

SMI experience with managed care payments has generally shown a strong upward trend. However, in recent years, there has been a slowdown in the number of Medicare beneficiaries choosing to enroll in managed care plans—and, in 2001 and 2002, an overall reduction in this number. Capitated plans currently account for approximately 95 percent of all SMI managed care payments. For capitated plans, per capita payment amounts have grown following the same trend as fee-for-service per capita cost growth, based on the formula in the law to calculate capitation amounts. The projection of future per capita

amounts follows the requirements of the Balanced Budget Act of 1997 (BBA) as related to the Medicare+Choice capitation amounts, which increase at rates based on the per capita growth for all of Medicare, less specified adjustments in 1998 to 2002. The projected rates are further adjusted by the Benefits Improvement and Protection Act of 2000. Table III.B6 shows the estimated number of SMI beneficiaries enrolled in a managed care plan and the aggregate incurred reimbursements associated with those enrollees.

**Table III.B6.—Enrollment and Incurred Reimbursement for Managed Care**

| Calendar year | Average enrollment [millions] | Reimbursement [millions] |
|---|---|---|
| 1992 | 2.246 | $3,948 |
| 1993 | 2.487 | 4,811 |
| 1994 | 2.840 | 5,455 |
| 1995 | 3.467 | 6,515 |
| 1996 | 4.368 | 8,800 |
| 1997 | 5.414 | 10,746 |
| 1998 | 6.416 | 15,839 |
| 1999 | 6.857 | 17,653 |
| 2000 | 6.856 | 18,620 |
| 2001 | 6.166 | 17,565 |
| 2002 | 5.657 | 16,620 |
| 2003 | 5.540 | 16,608 |
| 2004 | 5.458 | 16,437 |
| 2005 | 5.353 | 16,608 |
| 2006 | 5.413 | 17,328 |
| 2007 | 5.493 | 18,204 |
| 2008 | 5.670 | 19,884 |
| 2009 | 5.872 | 21,750 |
| 2010 | 6.072 | 23,691 |
| 2011 | 6.298 | 25,816 |

A decline in managed care enrollment is projected for the next few years as the provisions of the BBA (as subsequently modified) continue to limit growth in capitation rates. Thereafter, Medicare+Choice enrollment is assumed to grow somewhat.

### *e. Administrative Expenses*

The ratio of administrative expenses to benefit payments has declined to about 2 percent in recent years and is projected to continue to decline in future years. Projections of administrative costs are based on estimates of changes in average annual wages.

## 2. Summary of Aggregate Reimbursement Amounts on a Cash Basis under the Intermediate Assumptions

Table III.B7 shows aggregate historical and projected reimbursement amounts on a cash basis under the intermediate assumptions, by type of service. The difference between reimbursement amounts on a cash versus incurred basis results from the lag between the time of service and the time of payment. This lag has been gradually decreasing.

**Table III.B7.—Aggregate Reimbursement Amounts on a Cash Basis**

[In millions]

| Calendar year | Carrier: Physician fee schedule | Carrier: DME | Carrier: Lab | Carrier: Other | Carrier: Total | Intermediary: Hospital | Intermediary: Lab | Intermediary: Home health agency | Intermediary: Other | Intermediary: Total | Total FFS | Managed care | Total SMI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Historical data: | | | | | | | | | | | | | |
| 1992 | $25,325 | $2,367 | $2,862 | $3,624 | $34,179 | $6,479 | $1,232 | $116 | $3,126 | $10,953 | $45,132 | $4,128 | $49,260 |
| 1993 | 26,329 | 2,805 | 2,972 | 4,017 | 36,123 | 7,489 | 1,398 | 148 | 4,148 | 13,183 | 49,306 | 4,672 | 53,997 |
| 1994 | 28,843 | 3,216 | 2,859 | 4,332 | 39,250 | 7,735 | 1,434 | 182 | 4,546 | 13,897 | 53,147 | 5,470 | 58,617 |
| 1995 | 31,660 | 3,689 | 2,807 | 4,530 | 42,686 | 8,666 | 1,448 | 229 | 5,331 | 15,674 | 58,360 | 6,610 | 64,970 |
| 1996 | 31,631 | 3,825 | 2,550 | 5,059 | 43,065 | 8,614 | 1,355 | 241 | 5,749 | 15,960 | 59,025 | 9,558 | 68,584 |
| 1997 | 31,898 | 4,236 | 2,385 | 5,586 | 44,105 | 9,358 | 1,503 | 239 | 6,575 | 17,674 | 61,779 | 10,962 | 72,741 |
| 1998 | 32,449 | 4,038 | 2,087 | 5,940 | 44,514 | 8,708 | 1,541 | 6,186[1] | 6,382 | 22,817[1] | 67,331[1] | 15,338[1] | 82,669 |
| 1999 | 33,348 | 4,286 | 2,077 | 6,451 | 46,163 | 8,753 | 1,674 | 5,421[1] | 5,750 | 21,599[1] | 67,762[1] | 17,702[1] | 85,463 |
| 2000 | 36,936 | 4,746 | 2,227 | 7,406 | 51,315 | 8,408 | 1,801 | 5,274[1] | 6,280 | 21,762[1] | 73,077[1] | 18,358[1] | 91,436 |
| 2001 | 41,985 | 5,541 | 2,433 | 8,854 | 58,813 | 10,498 | 2,042 | 5,821[1] | 7,926 | 26,336[1] | 85,149[1] | 17,560[1] | 102,709 |
| Intermediate estimates: | | | | | | | | | | | | | |
| 2002 | 42,836 | 6,060 | 2,565 | 10,193 | 61,653 | 11,227 | 2,126 | 7,923[1] | 7,833 | 29,108[1] | 90,761[1] | 16,619[1] | 107,380 |
| 2003 | 42,782 | 6,507 | 2,689 | 11,418 | 63,397 | 12,091 | 2,233 | 8,445[1] | 7,407 | 30,176[1] | 93,573[1] | 16,594[1] | 110,167 |
| 2004 | 43,071 | 7,034 | 2,863 | 12,837 | 65,805 | 13,260 | 2,377 | 9,303 | 7,728 | 32,668 | 98,473 | 16,445 | 114,918 |
| 2005 | 44,286 | 7,595 | 3,063 | 14,393 | 69,337 | 15,369 | 2,544 | 9,956 | 8,225 | 36,093 | 105,430 | 16,667 | 122,098 |
| 2006 | 46,207 | 8,187 | 3,272 | 16,003 | 73,669 | 17,787 | 2,720 | 10,626 | 8,719 | 39,850 | 113,520 | 17,401 | 130,921 |
| 2007 | 48,866 | 8,853 | 3,508 | 17,718 | 78,945 | 19,873 | 2,916 | 11,329 | 9,239 | 43,357 | 122,302 | 18,337 | 140,639 |
| 2008 | 51,949 | 9,587 | 3,767 | 19,554 | 84,858 | 22,111 | 3,132 | 12,081 | 9,793 | 47,118 | 131,975 | 20,037 | 152,012 |
| 2009 | 55,015 | 10,381 | 4,045 | 21,580 | 91,020 | 24,605 | 3,365 | 12,763 | 10,375 | 51,107 | 142,127 | 21,909 | 164,036 |
| 2010 | 57,705 | 11,226 | 4,336 | 23,783 | 97,050 | 27,323 | 3,608 | 13,484 | 10,975 | 55,390 | 152,440 | 23,865 | 176,305 |
| 2011 | 60,227 | 12,161 | 4,656 | 26,261 | 103,306 | 30,241 | 3,874 | 14,324 | 11,617 | 60,056 | 163,362 | 26,000 | 189,362 |

[1]See footnote 3 of table III.B3.

### *d. Projections under Alternative Assumptions*

SMI cash expenditures for the low cost and high cost alternatives were developed by modifying the growth rates estimated under the intermediate assumptions. Beginning in the middle of calendar year 2001, the low cost and high cost incurred benefits for the following 4 quarters reflect some variation relative to the intermediate assumptions. Thereafter, the low cost and high cost alternatives contain assumptions that result in incurred benefits increasing, relative to the Gross Domestic Product (GDP), 2 percent less rapidly and 2 percent more rapidly, respectively, than the results under the intermediate assumptions. Administrative expenses under the low cost and the high cost alternatives are projected on the basis of their respective wage series growth. Based on the above methodology, cash expenditures as a percentage of GDP were calculated for all three sets of assumptions and are displayed in table III.B8. These expenditures are shown net of the monies transferred from the HI trust fund for home health agency costs.

**Table III.B8.—SMI Cash Expenditures as a Percentage of the Gross Domestic Product for Calendar Years 2001–2011[1]**

| | | Alternatives | |
|---|---|---|---|
| Calendar year | Intermediate assumptions | Low cost | High cost |
| 2001 | 0.99 | 0.98 | 1.00 |
| 2002 | 1.04 | 1.02 | 1.07 |
| 2003 | 1.01 | 0.97 | 1.06 |
| 2004 | 1.00 | 0.94 | 1.05 |
| 2005 | 1.01 | 0.93 | 1.08 |
| 2006 | 1.02 | 0.92 | 1.11 |
| 2007 | 1.04 | 0.92 | 1.12 |
| 2008 | 1.06 | 0.92 | 1.16 |
| 2009 | 1.09 | 0.93 | 1.21 |
| 2010 | 1.11 | 0.93 | 1.26 |
| 2011 | 1.14 | 0.93 | 1.31 |

[1]Expenditures are the sum of benefit payments and administrative expenses.

# IV. APPENDICES

## *A. MEDICARE AMENDMENTS SINCE THE 2001 REPORT*

Since the 2001 annual report was transmitted to Congress on March 19, 2001, one law has been enacted that has a direct financial effect on the HI trust fund.

The Department of Defense Appropriations Act, FY 2002, Public Law 107-117, enacted on January 10, 2002, contained a provision to eliminate deemed wage credits for members of the uniformed armed services (primarily military) for all years after calendar year 2001.

The actuarial estimates shown in this report reflect the expected effects of this amendment. The amendment has a small effect on the short-range operations of the HI trust fund. The long-range financial effect of this new law on the HI trust fund is negligible.

In addition, the Economic Growth and Tax Relief Reconciliation Act of 2001, Public Law 107-16, enacted on June 7, 2001, has an indirect effect on the projected revenue to the HI trust fund based on the income from taxation of Social Security benefits for years through 2010. The effects of this law are reflected in the projections of future revenue presented in this report.

## *B. AVERAGE MEDICARE EXPENDITURES PER BENEFICIARY*

Table IV.B1 shows historical average per beneficiary expenditures for HI and SMI, as well as projected costs for calendar years 2002 through 2011 under the intermediate assumptions.

For both HI and SMI, costs increased very rapidly in the early years when Medicare was still a new program and as a result of the rapid inflation of the 1970s and early 1980s. In addition, the cost-based reimbursement mechanisms in place provided relatively little incentive for efficiency in the provision of health care. Growth in average HI expenditures moderated dramatically following the introduction of the inpatient hospital prospective payment system in fiscal year 1984 but accelerated again in the late 1980s and early 1990s due to rapid growth in skilled nursing and home health expenditures. During this same period, SMI average costs generally continued to increase at relatively fast rates but slowed somewhat in the early 1990s with the implementation of physician fee reform legislation.

Expenditure growth moderated again during the late 1990s due to the effects of further legislation, including the Balanced Budget Act of 1997 (BBA), and efforts to control fraud and abuse. In addition, historically low levels of general and medical inflation helped reduce Medicare payment updates. HI per beneficiary costs actually decreased in 1998, 1999, and 2000, in part because of such BBA mandates as a reduction in payment updates to providers and a shift in home health benefits from HI to SMI, and because of a decline in utilization of services.

**Table IV.B1.—HI and SMI Average Per Beneficiary Costs**

| | Average per beneficiary costs | | | Annual percent change[1] | | |
|---|---|---|---|---|---|---|
| Calendar year | HI | SMI | Total | HI | SMI | Total |
| Historical data: | | | | | | |
| 1970 | $254.87 | $101.30 | $356.18 | 13.4% | 14.8% | 13.8% |
| 1975 | 462.20 | 179.96 | 642.16 | 12.6 | 12.2 | 12.5 |
| 1980 | 894.69 | 389.87 | 1,284.56 | 14.1 | 16.7 | 14.9 |
| 1985 | 1,549.39 | 768.25 | 2,317.65 | 11.6 | 14.5 | 12.5 |
| 1990 | 1,957.21 | 1,303.98 | 3,261.19 | 4.8 | 11.2 | 7.1 |
| 1995 | 3,125.38 | 1,822.98 | 4,948.36 | 10.8 | 9.2 | 10.2 |
| 1996 | 3,408.08 | 1,900.01 | 5,308.09 | 9.0 | 4.2 | 7.3 |
| 1997 | 3,611.41 | 1,995.93 | 5,607.34 | 6.0 | 5.0 | 5.6 |
| 1998 | 3,488.80 | 2,058.59 | 5,547.39 | -3.4 | 3.1 | -1.1 |
| 1999 | 3,306.04 | 2,190.81 | 5,496.84 | -5.2 | 6.4 | -0.9 |
| 2000 | 3,275.55 | 2,381.00 | 5,656.55 | -0.9 | 8.7 | 2.9 |
| 2001 | 3,553.52 | 2,645.11 | 6,198.63 | 8.5 | 11.1 | 9.6 |
| Intermediate estimates: | | | | | | |
| 2002 | 3,658.78 | 2,789.09 | 6,447.86 | 3.0 | 5.4 | 4.0 |
| 2003 | 3,697.54 | 2,854.50 | 6,552.04 | 1.1 | 2.3 | 1.6 |
| 2004 | 3,840.43 | 2,964.40 | 6,804.83 | 3.9 | 3.9 | 3.9 |
| 2005 | 4,014.03 | 3,115.24 | 7,129.27 | 4.5 | 5.1 | 4.8 |
| 2006 | 4,191.59 | 3,299.13 | 7,490.73 | 4.4 | 5.9 | 5.1 |
| 2007 | 4,363.41 | 3,489.84 | 7,853.25 | 4.1 | 5.8 | 4.8 |
| 2008 | 4,548.64 | 3,701.30 | 8,249.94 | 4.2 | 6.1 | 5.1 |
| 2009 | 4,743.86 | 3,917.83 | 8,661.69 | 4.3 | 5.9 | 5.0 |
| 2010 | 4,956.31 | 4,136.71 | 9,093.03 | 4.5 | 5.6 | 5.0 |
| 2011 | 5,168.26 | 4,353.97 | 9,522.23 | 4.3 | 5.3 | 4.7 |

[1]Percent changes for 1970 represent the average annual increases from 1967 (the first full year of trust fund operations) through 1970. Similarly, percent changes shown for 1975, 1980, 1985, and 1990 represent the average annual increase over the 5-year period ending in the indicated year.

On average, annual increases in per beneficiary costs have been greater for SMI than for HI during the previous 3 decades—by approximately 1.1 percent, 4.7 percent, and 1.0 percent per year in the 1970s, 1980s, and 1990s, respectively. This trend is expected to continue through 2011, with the 10-year average annual increase projected to be 1.3 percent greater for SMI than for HI. Both HI and SMI per beneficiary costs increased significantly in 2001 as a result of the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000. In subsequent years, however, the large growth in the 1970s and 1980s is not expected to recur for either HI or SMI, due to more moderate inflation rates and the conversion of Medicare's remaining cost-based reimbursement mechanisms to prospective payment systems as part of the BBA.

## *C. MEDICARE COST SHARING AND PREMIUM AMOUNTS*

HI beneficiaries who use covered services may be subject to deductible and coinsurance requirements. A beneficiary is responsible for an inpatient hospital deductible amount, which is deducted from the amount payable by the HI trust fund to the hospital, for inpatient hospital services furnished in a spell of illness. When a beneficiary receives such services for more than 60 days during a spell of illness, he or she is responsible for a coinsurance amount equal to one-fourth of the inpatient hospital deductible for each of days 61-90 in the hospital. After 90 days in a spell of illness, each individual has 60 lifetime reserve days of coverage, the coinsurance amount for which is equal to one-half of the inpatient hospital deductible. A beneficiary is responsible for a coinsurance amount equal to one-eighth of the inpatient hospital deductible for each of days 21-100 of skilled nursing facility services furnished during a spell of illness.

Most persons aged 65 and older and many disabled individuals under age 65 are insured for HI benefits without payment of any premium. The Social Security Act provides that certain aged and disabled persons who are not insured may voluntarily enroll, subject to the payment of a monthly premium. In addition, since 1994, voluntary enrollees may qualify for a reduced premium if they have at least 30 quarters of covered employment.

Under SMI, all enrollees must pay a monthly premium. Most SMI services are subject to an annual deductible and coinsurance. The annual deductible and the coinsurance percentage (percent of costs that the enrollee must pay) are set by statute. The coinsurance percentage has remained at 20 percent since the inception of the trust fund.

Table IV.C1 shows the historical levels of HI and SMI deductibles, HI coinsurance, and HI and SMI premiums, as well as projected values for future years based on the intermediate set of assumptions used in estimating the operations of the trust funds. Certain anomalies in these values resulted from specific trust fund features in particular years (for example, the effect of the Medicare Catastrophic Coverage Act of 1988 on 1989 values). The amounts of the HI and SMI premiums and the HI deductibles and coinsurance are required to be announced in the Federal Register in September of each year for the upcoming year. The values listed in the table for future years are estimates, and actual amounts are likely to be somewhat different as experience emerges.

**Table IV.C1.—Medicare Cost Sharing and Premium Amounts**

| | HI | | | | | | SMI | |
|---|---|---|---|---|---|---|---|---|
| | | Inpatient coinsurance[1] | | | | | | |
| Year | Inpatient hospital deductible[1] | Days 61-90 | Lifetime reserve days | SNF coinsurance days[1] | Monthly premium Standard[2] | Monthly premium Reduced[1] | Monthly premium[2] | Annual deductible[1] |
| Historical data: | | | | | | | | |
| 1967 | $40 | $10 | — | $5.00 | — | — | $3.00 | $50 |
| 1968 | 40 | 10 | $20 | 5.00 | — | — | 4.00 | 50 |
| 1969 | 44 | 11 | 22 | 5.50 | — | — | 4.00 | 50 |
| 1970 | 52 | 13 | 26 | 6.50 | — | — | 4.00 | 50 |
| 1971 | 60 | 15 | 30 | 7.50 | — | — | 5.30 | 50 |
| 1972 | 68 | 17 | 34 | 8.50 | — | — | 5.60 | 50 |
| 1973 | 72 | 18 | 36 | 9.00 | $33 | — | 5.80 | 60 |
| 1974 | 84 | 21 | 42 | 10.50 | 36 | — | 6.30[3] | 60 |
| 1975 | 92 | 23 | 46 | 11.50 | 40 | — | 6.70 | 60 |
| 1976 | 104 | 26 | 52 | 13.00 | 45 | — | 6.70 | 60 |
| 1977 | 124 | 31 | 62 | 15.50 | 54 | — | 7.20 | 60 |
| 1978 | 144 | 36 | 72 | 18.00 | 63 | — | 7.70 | 60 |
| 1979 | 160 | 40 | 80 | 20.00 | 69 | — | 8.20 | 60 |
| 1980 | 180 | 45 | 90 | 22.50 | 78 | — | 8.70 | 60 |
| 1981 | 204 | 51 | 102 | 25.50 | 89 | — | 9.60 | 60 |
| 1982 | 260 | 65 | 130 | 32.50 | 113 | — | 11.00 | 75 |
| 1983 | 304 | 76 | 152 | 38.00 | 113 | — | 12.20 | 75 |
| 1984 | 356 | 89 | 178 | 44.50 | 155 | — | 14.60 | 75 |
| 1985 | 400 | 100 | 200 | 50.00 | 174 | — | 15.50 | 75 |
| 1986 | 492 | 123 | 246 | 61.50 | 214 | — | 15.50 | 75 |
| 1987 | 520 | 130 | 260 | 65.00 | 226 | — | 17.90 | 75 |
| 1988 | 540 | 135 | 270 | 67.50 | 234 | — | 24.80 | 75 |
| 1989[4] | 560 | — | — | 25.50 | 156 | — | 31.90 | 75 |
| 1990 | 592 | 148 | 296 | 74.00 | 175 | — | 28.60 | 75 |
| 1991 | 628 | 157 | 314 | 78.50 | 177 | — | 29.90 | 100 |
| 1992 | 652 | 163 | 326 | 81.50 | 192 | — | 31.80 | 100 |
| 1993 | 676 | 169 | 338 | 84.50 | 221 | — | 36.60 | 100 |
| 1994 | 696 | 174 | 348 | 87.00 | 245 | $184 | 41.10 | 100 |
| 1995 | 716 | 179 | 358 | 89.50 | 261 | 183 | 46.10 | 100 |
| 1996 | 736 | 184 | 368 | 92.00 | 289 | 188 | 42.50 | 100 |
| 1997 | 760 | 190 | 380 | 95.00 | 311 | 187 | 43.80 | 100 |
| 1998 | 764 | 191 | 382 | 95.50 | 309 | 170 | 43.80 | 100 |
| 1999 | 768 | 192 | 384 | 96.00 | 309 | 170 | 45.50 | 100 |
| 2000 | 776 | 194 | 388 | 97.00 | 301 | 166 | 45.50 | 100 |
| 2001 | 792 | 198 | 396 | 99.00 | 300 | 165 | 50.00 | 100 |
| 2002 | 812 | 203 | 406 | 101.50 | 319 | 175 | 54.00 | 100 |
| Intermediate estimates: | | | | | | | | |
| 2003 | 840 | 210 | 420 | 105.00 | 319 | 175 | 57.00 | 100 |
| 2004 | 880 | 220 | 440 | 110.00 | 333 | 183 | 59.80 | 100 |
| 2005 | 920 | 230 | 460 | 115.00 | 348 | 191 | 63.90 | 100 |
| 2006 | 964 | 241 | 482 | 120.50 | 363 | 200 | 67.70 | 100 |
| 2007 | 1,008 | 252 | 504 | 126.00 | 378 | 208 | 71.60 | 100 |
| 2008 | 1,056 | 264 | 528 | 132.00 | 393 | 216 | 76.00 | 100 |
| 2009 | 1,108 | 277 | 554 | 138.50 | 410 | 226 | 80.60 | 100 |
| 2010 | 1,160 | 290 | 580 | 145.00 | 428 | 235 | 86.10 | 100 |
| 2011 | 1,216 | 304 | 608 | 152.00 | 446 | 245 | 90.80 | 100 |

[1]Amounts shown are effective for calendar years.

[2]Amounts shown for 1967-1982 are for the 12-month periods ending June 30; amounts shown for 1983 are for the period July 1, 1982 through December 31, 1983; amounts shown for 1984 and later are for calendar years.

[3]In accordance with limitations on the costs of health care imposed under Phase III of the Economic Stabilization program, the standard premium rates for July and August 1973 were set at $5.80 and $6.10, respectively. Effective September 1973, the rate increased to $6.30.

[4]Anomalies in the 1989 values are due to the Medicare Catastrophic Coverage Act of 1988. Most of the provisions of the Act were repealed the following year.

The Federal Register notice announcing the HI deductible and coinsurance amounts for 2002 included an estimate of the aggregate cost to HI beneficiaries for the changes in the deductible and coinsurance amounts from 2001 to 2002. At that time, it was estimated that in 2002 there will be about 8.7 million inpatient deductibles paid at $812 each, about 2.1 million inpatient days subject to coinsurance at $203 per day (for hospital days 61 through 90), about 1.0 million lifetime reserve days subject to coinsurance at $406 per day, and about 26.3 million extended care days subject to coinsurance at $101.50 per day. Similarly, it was estimated that in 2001 there were about 8.5 million deductibles paid at $792 each, about 2.1 million days subject to coinsurance at $198 per day (for hospital days 61 through 90), about 1.0 million lifetime reserve days subject to coinsurance at $396 per day, and about 25.8 million extended care days subject to coinsurance at $99 per day. Therefore, the total increase in cost to beneficiaries was estimated to be about $430 million, due to (1) the increase in the inpatient deductible and coinsurance amounts, and (2) the change in the number of deductibles and daily coinsurance amounts paid.

## *D. SUPPLEMENTARY ASSESSMENT OF UNCERTAINTY IN SMI COST PROJECTIONS*

This appendix presents an additional way to help assess the uncertainty of SMI cost projections. It is intended to supplement the traditional methods of examining such uncertainty and to illustrate the potential value of new techniques. The analysis offered here uses statistical methods to help quantify the range and likelihood of future SMI costs and trust fund assets and should be viewed as a tentative application of the new techniques to the SMI financial projections, subject to refinement over time as more data become available.

### 1. Background

Financial projections, including those for Medicare, are necessarily uncertain because the future is unknown and unknowable. Medicare projections depend on numerous assumptions, as outlined in sections I.C and III.B of this report. Variations between *actual* future cost factors (for example, growth in the utilization of medical services) and the corresponding *assumptions* will almost always cause future costs to vary from the estimate.

Uncertainty in Medicare costs is traditionally illustrated by using three alternative sets of assumptions (intermediate, high cost, and low cost). The high cost alternative assumes a faster growth rate in SMI expenditures in every year. Similarly, the low cost alternative assumes slower growth rates in all years. These growth differentials are set deterministically, to illustrate the impact on SMI costs of sustained faster or slower growth that could reasonably be expected to occur. Using the traditional methodology alone, it is not possible to quantify the probability of either outcome or the likelihood of a future result outside of the range defined by the high cost and low cost alternatives.

From time to time, expert panels of actuaries and economists convene to review the assumptions and methodology underlying the Medicare and Social Security Trustees Reports. Each of the past four expert panels has recommended consideration of alternative analytical techniques to supplement the current methodology for assessing the uncertainty in cost projections and to add insight into the potential range of future variation. The 1991 Advisory Council Technical Panel report on Social Security recommended the "development of methods to quantify the uncertainty of short- and long-range forecasts, both for particular assumptions and projections." Similarly, the 1994-95 Advisory Council Technical Panel report recommended that

"stochastic analysis should be used to examine more explicitly the probabilities of alternative projections." The 1999 Social Security Advisory Board Technical Panel agreed, stating that they "follow previous panels in strongly recommending efforts toward stochastic modeling or similar techniques that are better able to capture the interrelationships among assumptions." They added, "what we seek is a method of displaying to policy makers and the public just how uncertain is some average cost outcome or date of exhaustion of the Trust Funds, and what are the probabilities that events will be close to or far away from that result." In their review of the Trustees Reports, the 2000 Medicare Technical Review Panel recommended the continued use of stochastic methods for Medicare and noted that "although stochastic modeling is complicated, it can result in enhanced insight into the uncertainty associated with health care cost projections."

The projections shown in this appendix represent the preliminary application of such techniques to the short-range SMI cost projections.

## 2. Methodology

For health care cost projections, the most critical assumption is generally the rate of increase in average per beneficiary medical costs.[26] In the past there have been wide variations in such growth rates for SMI. The statistical methods employed here (also referred to as "stochastic" projection techniques) measure past variation in per beneficiary growth rates relative to the average and assume that similar variation will occur in the future, relative to the intermediate growth rate assumptions for the short-range projection period.

Past variations in benefit expenditure growth rates are examined separately by service type (for example, physician, hospital, and home health) and by eligibility category (aged, disabled, or end-stage renal disease), using data from the first quarter of 1991 through the third quarter of 2001. For each future year, these variations are combined statistically to develop a measure of variation in total SMI benefit

[26]Such cost increases reflect changes in (1) the prices of specific medical services, (2) the utilization of services, and (3) the average complexity or "intensity" of services.

expenditures per beneficiary.[27] Individual 10-year projection scenarios are generated by randomly selecting each year's per beneficiary SMI cost increase from a frequency distribution of increases based on past variation and the intermediate growth rate assumption for the given year.[28] Two thousand short-range scenarios are generated and benefit expenditures are projected for each individual scenario. A distribution of the resulting cost projections is calculated and used to assess the possible variation in future expenditure levels and trust fund operations.

The stochastic approach provides several potential benefits to supplement the traditional projections. This method provides an estimated probability of occurrence for various possible outcomes, rather than just an illustrative outcome. For example, the likelihood that SMI expenditures would exceed a specified level within 10 years can be estimated using stochastic techniques. Similarly, the likelihood of an abrupt decline in SMI trust fund assets can be evaluated using these techniques, as illustrated in section IV.D3 of this appendix.

The projections shown in this appendix should be considered only as a preliminary attempt to augment the traditional projections that are made for SMI. The method presented, like any projection model, is only a tool; it can provide useful—but limited—information regarding an unknowable future. Stochastic techniques can improve our understanding of possible future developments but cannot "guarantee" any specific outcome. In particular:

- The stochastic techniques used here rely heavily on past experience. The future may differ from the past in fundamental ways that generally cannot be anticipated or reflected in a statistical model. For example, most of the past experience underlying the statistical model is drawn from years that precede implementation of the SMI outpatient hospital prospective payment system (which started in August 2000). The range of future variation in outpatient hospital expenditures (and total SMI costs) may therefore differ from what is reflected in the model.

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[27]For this calculation, variation in each service category is weighted by the expected level of benefit expenditures per beneficiary for that category for the year. The calculation also reflects the "covariances" among the different categories—for example, the probability that a faster-than-average increase in physician expenditures would be associated with an above-average increase in spending for diagnostic laboratory tests, outpatient hospital procedures, and other services.

[28]These future increases are assumed to be normally distributed, based on the near-normality of past increases about their average.

- Actual SMI payment operations are very complex. The stochastic model used is a simplification of real-world relationships and may not be sufficiently sophisticated to match future behavior. Many possible models could be used; the one employed here may not be the best model possible (if there indeed is a unique "best" model).

- The model is based on the underlying data. A limited number of years of data are available, and the data can be subject to problems, such as measurement errors or inconsistent definitions over time. Any such problems would, of course, affect the model.

- Potential variations in costs due to factors other than growth in per beneficiary expenditures are not considered. For example, longer life expectancies or variations in net immigration could affect the total number of SMI beneficiaries and therefore total expenditures.

- Finally, the methodology described here models future expenditure uncertainty on the assumption that the intermediate assumptions produce the most likely future year-by-year cost increases. Actual future growth rates could, on average, differ from these assumptions.

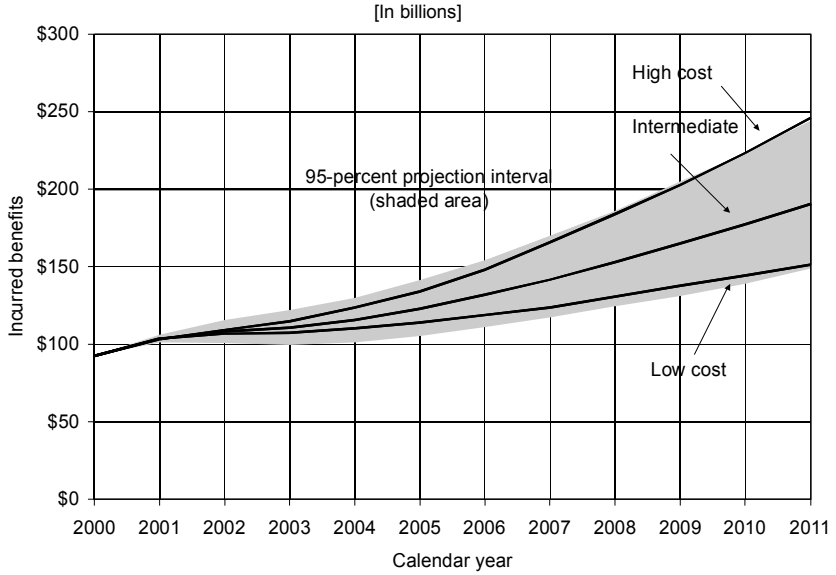
For these reasons, the stochastic projections shown in this appendix should be viewed cautiously and used with awareness of their limitations.[29] Many refinements to the methodology are possible. For example, the assumed average future cost increases could be allowed to differ from the increases of the intermediate assumptions. Also, separate cost increases could be generated by type of service rather than in aggregate. Other factors, such as the demographic assumptions, could be allowed to vary rather than just the per beneficiary SMI cost increases.

[29]Many of these limitations also apply to the traditional projection methods used in the annual Trustees Reports and, indeed, to virtually any estimation technique. Different methods have different relative advantages and disadvantages. Use of multiple techniques has the potential to improve our overall understanding of possible future developments.

### 3. Results

The shaded region in figure IV.D1 illustrates the range within which future SMI benefit expenditures are estimated to occur 95 percent of the time, based on the stochastic projections. In other words, actual future expenditures in a given year would be expected to exceed the upper bound only 2.5 percent of the time or to fall below the lower bound 2.5 percent of the time.[30]

**Figure IV.D1.—95-Percent Projection Interval for SMI Incurred Benefits**




For comparison, the benefit levels projected under the intermediate, high cost, and low cost alternatives are also shown in figure IV.D1. With both projection methodologies, the range of benefits widens as the projections move further into the future, reflecting increasing uncertainty. The high cost alternative is initially well below the upper bound for the 95-percent stochastic projection interval but reaches the upper bound by the end of the 10-year projection period. Similarly, the low cost alternative exceeds the lower bound for the 95-percent interval initially but nearly reaches the boundary in 2010. The intermediate estimate is similar to the 50$^{th}$ percentile of the

[30]These estimated probabilities apply to a given projection year and not to all years simultaneously. Based on the stochastic model, the probability of costs exceeding the upper 95-percent limit in all 10 years would be substantially smaller than 2.5 percent.

stochastic distribution, as one would anticipate because the stochastic analysis is tied to the intermediate assumptions as the expected case.

The levels of SMI benefits corresponding to various percentiles from the stochastic benefit distribution are shown in table IV.D1. The percentiles represent the estimated probabilities that actual future SMI expenditures in a given year would be less than or equal to the expenditure amount shown. For example, the stochastic projections suggest a 5-percent probability that expenditures would be $154.4 billion or less in 2011. Similarly, there is an estimated 50-50 probability that expenditures in 2011 would be lower—or higher—than the 50th-percentile projection of $188.7 billion (also known as the median projection).

**Table IV.D1.—Estimated Incurred SMI Benefit Expenditures, by Percentile of Projection Distribution**

[In billions]

| | Percentiles | | | | |
|---|---|---|---|---|---|
| Calendar year | 2.5 | 5.0 | 50.0 | 95.0 | 97.5 |
| 2001 | $100.8 | $101.3 | $103.3 | $105.4 | $105.8 |
| 2002 | 100.5 | 101.7 | 107.9 | 114.2 | 115.6 |
| 2003 | 99.3 | 101.0 | 110.3 | 120.4 | 122.0 |
| 2004 | 101.1 | 103.5 | 115.2 | 127.8 | 130.1 |
| 2005 | 105.1 | 107.7 | 122.4 | 138.2 | 141.5 |
| 2006 | 110.9 | 114.3 | 131.1 | 151.0 | 154.5 |
| 2007 | 117.1 | 120.1 | 140.8 | 164.6 | 170.0 |
| 2008 | 124.6 | 128.8 | 152.2 | 181.1 | 186.2 |
| 2009 | 131.2 | 135.8 | 164.0 | 296.9 | 205.0 |
| 2010 | 139.1 | 144.5 | 175.5 | 214.2 | 223.4 |
| 2011 | 149.0 | 154.4 | 188.7 | 232.3 | 244.0 |

Note: Intermediate estimates are similar to the 50th-percentile benefits. See section III.B for specific expenditure projections under the intermediate assumptions.

Table IV.D2 presents the stochastic percentiles that correspond to the traditional intermediate, high, and low cost projections. For example, based on the stochastic model, the estimated probability that SMI expenditures in 2004 would be less than the low cost projection is 24.1 percent. Similarly, the estimated probability that costs would be at or below the high cost projection in 2007 is 95.6 percent.

As noted before, these probabilities are *estimated*, based on the statistical methods described in the previous section, and are subject to the various limitations inherent in such methods. Accordingly, the estimates provide a reasonable guide to possible outcomes but could be invalidated by unanticipated changes.

**Table IV.D2.—Percentiles of SMI Benefit Expenditure Distribution Corresponding to Low, Intermediate, and High Cost Estimates**

| Calendar year | Low cost | Intermediate | High cost |
|---|---|---|---|
| 2001 | 53.2% | 52.1% | 44.7% |
| 2002 | 38.0 | 50.3 | 62.4 |
| 2003 | 31.0 | 51.9 | 76.6 |
| 2004 | 24.1 | 52.0 | 86.4 |
| 2005 | 17.6 | 51.8 | 88.3 |
| 2006 | 11.8 | 53.4 | 91.9 |
| 2007 | 8.4 | 51.9 | 95.6 |
| 2008 | 6.5 | 52.0 | 96.2 |
| 2009 | 5.8 | 52.3 | 97.1 |
| 2010 | 4.8 | 52.9 | 97.4 |
| 2011 | 3.3 | 53.6 | 98.0 |

The comparison of projection results in figure IV.D1 and table IV.D2 indicates that the 95-percent stochastic projection range is initially somewhat broader than the range defined by the high and low cost alternatives. Toward the end of the 10-year projection period, however, the two ranges are very similar. This result illustrates the different nature of the two projection methodologies. The high and low cost alternatives assume expenditure increases of roughly 2 percent higher or lower, respectively, than the intermediate assumption in every year.[31] In contrast, SMI growth rates under the stochastic projection can vary randomly by as much as 7 percentage points higher or lower than the intermediate assumption for a specific year. Thus, the stochastic projections suggest that the uncertainty of future SMI expenditures is somewhat greater over the next few years than illustrated by the traditional alternative projections. Over longer periods, however, the probability diminishes that SMI costs would increase 2 percent faster (or slower) than the intermediate assumption in *every* year. The stochastic model estimates that, by the end of the 10-year period, the likelihood of costs exceeding the high cost projection is small (2.0 percent) and that the probability of falling below the low cost alternative is also small (3.3 percent).

The statistical methodology described in this appendix can also be used to help assess the adequacy of financing and assets for the SMI trust fund. As noted elsewhere in this report, SMI is considered to be automatically in financial balance because premium and general revenue financing levels are reestablished annually to match expected expenditures for the following year. Thus, in contrast to OASDI and HI, where financing can be changed only through legislation, SMI should always be adequately financed so long as premiums and general revenue levels are accurately set and an adequate trust fund balance is maintained. In this regard, the

[31]A more detailed description of the high and low cost assumptions is given in section III.B.

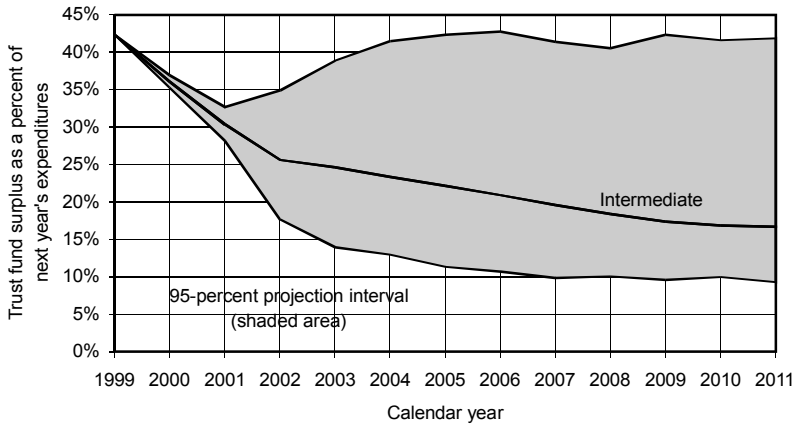
stochastic methods used in this appendix can help determine if an unexpected major change in SMI expenditure levels is likely and whether such a change could jeopardize asset adequacy prior to the next premium determination. This assessment can be used to evaluate the sufficiency of existing procedures for setting premiums and the adequacy of traditional trust fund reserve targets.

The assets of the SMI trust fund should be sufficient at any time to cover the costs of covered services that have been performed but not yet reimbursed (referred to as "incurred but unpaid" claims). In addition, assets should be sufficient to prevent fund depletion in the event of unexpectedly high expenditures. The adequacy of the SMI trust fund for these purposes is generally measured by comparing the fund's assets minus liabilities (for the incurred but unpaid claims) with expenditures for the following year, as described in more detail in section II.C2. Premium rates and matching general fund transfers are set each year based on estimates of the following 2 years' expenditures.[32] The sensitivity of the asset reserve ratio to above- or below-average expenditure growth over the 2 years can be evaluated using the stochastic projections.

The estimated financial status of the SMI trust fund, based on the stochastic projections, is shown in figure IV.D2. This graph displays the 95-percent projection interval for the ratio of trust fund assets less liabilities at the end of a year to the following year's expenditures. The results show a reasonable range of surplus values over the 10-year period, reflecting the annual redetermination of SMI premiums and general revenue financing. If expenditure levels begin to drift away from expectations, financing is adjusted for the following year, thereby minimizing the degree to which fund assets would depart from desired levels. The figure also illustrates an intentional gradual movement from the current financial status, with net assets in excess of levels considered sufficient for a contingency reserve, toward the desired reserve level of approximately 15 to 20 percent of the following year's expenditures.

[32]Expenditures in the following year determine the level of assets and liabilities at the end of that year; expenditures in the second year are used in the denominator of the trust fund reserve ratio and thus affect the level of this ratio.

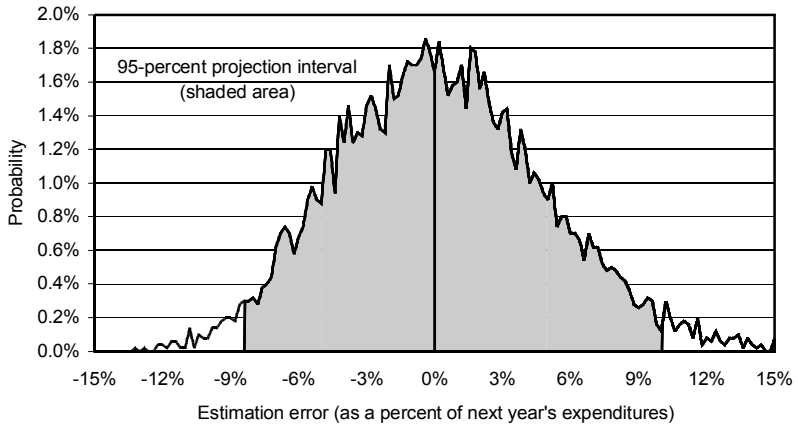
**Figure IV.D2.—95-Percent Projection Interval for Financing Status of SMI Trust Fund**




The stochastic projections shown in figure IV.D2 suggest that the target reserve level and annual redetermination of SMI financing should be sufficient to prevent the assets of the SMI trust fund from falling below acceptable levels. The lower bound of the 95-percent range remains in the vicinity of 10 percent. Thus, with a target fund ratio of 15 to 20 percent, faster-than-expected expenditure growth appears unlikely to result in actual levels below 10 percent. The supplementary assessment of uncertainty, based on the statistical approach shown in this appendix, supports the existing standards for ensuring fund solvency.

As noted previously, SMI financing is set for a future year based on projections of benefit expenditures. For example, the monthly premium and corresponding general fund transfers for 2002 were set in 2001 based on projections of benefit expenditures for 2002 and 2003. In practice, however, the actual benefit levels are likely to differ from those expected when the financing is determined. Although a specific reserve asset level is anticipated, the subsequent actual level will invariably differ. Figure IV.D3 shows an estimated frequency distribution for such disparities, to assess their magnitude and likelihood. The estimation error for a given year is defined as the net surplus ratio at the end of the year, based on the stochastic projection, minus the expected surplus ratio at the time that financing is established. The frequency distribution shows the probabilities of various differences from the expected trust fund status.

**Figure IV.D3.—Frequency Distribution of Estimation Errors for SMI Trust Fund Surplus Ratio (Stochastic "Actual" minus Estimated Surplus as a Percent of Next Year's Expenditures)**




The stochastic analysis suggests that, on average, 95 percent of the estimation errors would be expected to fall between about –9 percent and 10 percent. The largest adverse differences generated by the stochastic projections were in the vicinity of –13 percent. These results are also consistent with the traditional reserve level target of 15 to 20 percent.

## 4. Summary

The stochastic approach presented in this appendix is intended to supplement the traditional projection methods used to evaluate the financial status of the SMI trust fund. The approach can help quantify the uncertainty of future SMI cost projections but is preliminary and subject to further refinement. The results suggest that the range of variation defined by the traditional high and low cost alternatives is initially somewhat narrower than the range determined by the tentative application of stochastic modeling but about the same at the end of the 10-year projection period. The projections support the view that future SMI costs could vary substantially from the intermediate projection, due to variations in future annual cost increases. The statistical analysis also reinforces the conclusion that the current methods of establishing SMI premiums and general revenue financing should prevent depletion of the trust fund, even under conditions of sustained adverse cost experience.

## *E. GLOSSARY*

**Actuarial balance**. The difference between the summarized income rate and the summarized cost rate over a given valuation period.

**Actuarial deficit**. A negative actuarial balance.

**Actuarial rates.** One half of the SMI expected monthly cost for each aged enrollee (for the aged actuarial rate) and one half of the expected monthly cost for each disabled enrollee (for the disabled actuarial rate) for the duration the rate is in effect.

**Actuarial status.** A measure of the adequacy of the financing as determined by the difference between assets and liabilities at the end of the periods for which financing was established.

**Administrative expenses**. Expenses incurred by the Department of Health and Human Services and the Department of the Treasury in administering HI and SMI and the provisions of the Internal Revenue Code relating to the collection of contributions. Such administrative expenses, which are paid from the HI and SMI trust funds, include expenditures for contractors to determine costs of, and make payments to, providers, as well as salaries and expenses of the Centers for Medicare & Medicaid Services.

**Aged enrollee**. An individual, aged 65 or over, who is enrolled in HI or SMI.

**Allowed charge.** Individual charge determined by a carrier for a covered SMI medical service or supply.

**Assets**. Treasury notes and bonds guaranteed by the federal government, and cash held by the trust funds for investment purposes.

**Assumptions**. Values relating to future trends in certain key factors that affect the balance in the trust funds. Demographic assumptions include fertility, mortality, net immigration, marriage, divorce, retirement patterns, disability incidence and termination rates, and changes in the labor force. Economic assumptions include unemployment, average earnings, inflation, interest rates, and productivity. Three sets of economic assumptions are presented in the Trustees Report:

(1) The low cost alternative, with relatively rapid economic growth, low inflation, and favorable (from the standpoint of program financing) demographic conditions;
(2) The intermediate assumptions, which represent the Trustees' best estimates of likely future economic and demographic conditions; and
(3) The high cost alternative, with slow economic growth, more rapid inflation, and financially disadvantageous demographic conditions.

See also "Hospital assumptions."

**Average market yield**. A computation that is made on all marketable interest-bearing obligations of the United States. It is computed on the basis of market quotations as of the end of the calendar month immediately preceding the date of such issue.

**Baby boom**. The period from the end of World War II through the mid-1960s marked by unusually high birth rates.

**Base estimate**. The updated estimate of the most recent historical year.

**Beneficiary**. A person enrolled in HI or SMI. See also "Aged enrollee" and "Disabled enrollee."

**Benefit payments**. The amounts disbursed for covered services after the deductible and coinsurance amounts have been deducted.

**Benefit period**. An alternate name for "spell of illness."

**Board of Trustees**. A Board established by the Social Security Act to oversee the financial operations of the Federal Hospital Insurance Trust Fund and the Federal Supplementary Medical Insurance Trust Fund. The Board is composed of six members, four of whom serve automatically by virtue of their positions in the federal government: the Secretary of the Treasury, who is the Managing Trustee; the Secretary of Labor; the Secretary of Health and Human Services; and the Commissioner of Social Security. The other two members are appointed by the President and confirmed by the Senate to serve as public representatives. John L. Palmer and Thomas R. Saving began serving their 4-year terms on October 28, 2000. The Administrator of the Centers for Medicare & Medicaid Services (CMS) serves as Secretary of the Board of Trustees.

**Bond**. A certificate of ownership of a specified portion of a debt due by the federal government to holders, bearing a fixed rate of interest.

**Callable**. Subject to redemption upon notice, as is a bond.

**Carrier.** A private or public organization under contract to CMS to administer the SMI benefits under Medicare. Also referred to as "contractors," these organizations determine coverage and benefit amounts payable and make payments to physicians, suppliers, and beneficiaries.

**Case mix index**. A relative weight that captures the average complexity of certain Medicare services.

**Cash basis**. The costs of the service when payment was made rather than when the service was performed.

**Certificate of indebtedness**. A short-term certificate of ownership (12 months or less) of a specified portion of a debt due by the federal government to individual holders, bearing a fixed rate of interest.

**Coinsurance**. Portion of the costs for covered services paid by the beneficiary after meeting the annual deductible. See also "Hospital coinsurance" and "SNF coinsurance."

**Consumer Price Index (CPI)**. A measure of the average change in prices over time in a fixed group of goods and services. In this report, all references to the CPI relate to the CPI for Urban Wage Earners and Clerical Workers (CPI-W).

**Contingency.** Funds included in the SMI trust fund to serve as a cushion in case actual expenditures are higher than those projected at the time financing was established. Since the financing is set prospectively, actual experience may be different from the estimates used in setting the financing.

**Contingency margin.** An amount included in the actuarial rates to provide for changes in the contingency level in the SMI trust fund. Positive margins increase the contingency level, and negative margins decrease it.

**Contribution base**. See "Maximum tax base."

**Contributions**. See "Payroll taxes."

**Cost rate**. The ratio of HI cost (or outgo or expenditures) on an incurred basis during a given year to the taxable payroll for the year. In this context, the outgo is defined to exclude benefit payments and administrative costs for those uninsured persons for whom payments are reimbursed from the general fund of the treasury, and for voluntary enrollees, who pay a premium to be enrolled.

**Covered earnings**. Earnings in employment covered by HI.

**Covered employment**. All employment and self-employment creditable for Social Security purposes. Almost every kind of employment and self-employment is covered under HI. In a few employment situations—for example, religious orders under a vow of poverty, foreign affiliates of American employers, or State and local governments—coverage must be elected by the employer. However, effective July 1991, coverage is mandatory for State and local employees who are not participating in a public employee retirement system. All new State and local employees have been covered since April 1986. In a few situations—for instance, ministers or self-employed members of certain religious groups—workers can opt out of coverage. Covered employment for HI includes all federal employees (whereas covered employment for OASDI includes some, but not all, federal employees).

**Covered services**. Services for which HI or SMI pays, as defined and limited by statute. Covered HI services are provided by hospitals (inpatient care), skilled nursing facilities, home health agencies, and hospices. Covered SMI services include most physician services, care in outpatient departments of hospitals, diagnostic tests, durable medical equipment, ambulance services, and other health services that are not covered by HI.

**Covered worker**. A person who has earnings creditable for Social Security purposes on the basis of services for wages in covered employment and/or on the basis of income from covered self-employment. The number of HI covered workers is slightly larger than the number of OASDI covered workers because of different coverage status for federal employment. See "Covered employment."

**Deductible**. The annual amount payable by the beneficiary for covered services before Medicare makes reimbursement. See also "Inpatient hospital deductible."

**Deemed wage credit**. See "Non-contributory or deemed wage credits."

**Demographic assumptions**. See "Assumptions."

**Diagnosis-related groups (DRGs)**. A classification system that groups patients according to diagnosis, type of treatment, age, and other relevant criteria. Under the inpatient hospital prospective payment system, hospitals are paid a set fee for treating patients in a single DRG category, regardless of the actual cost of care for the individual.

**Disability**. For Social Security purposes, the inability to engage in substantial gainful activity by reason of any medically determinable physical or mental impairment that can be expected to result in death or to last for a continuous period of not less than 12 months. Special rules apply for workers aged 55 or older whose disability is based on blindness. The law generally requires that a person be disabled continuously for 5 months before he or she can qualify for a disabled-worker cash benefit. An additional 24 months is necessary to qualify for benefits under Medicare.

**Disability Insurance (DI)**. See "Old-Age, Survivors, and Disability Insurance (OASDI)."

**Disabled enrollee**. An individual under age 65 who has been entitled to disability benefits under Title II of the Social Security Act or the Railroad Retirement system for at least 2 years and who is enrolled in HI or SMI.

**DRG Coding**. The DRG categories used by hospitals on discharge billing. See also "Diagnosis-related groups (DRGs)."

**Durable medical equipment (DME).** Items such as iron lungs, oxygen tents, hospital beds, wheelchairs, and seat lift mechanisms that are used in the patient's home and are either purchased or rented.

**Earnings**. Unless otherwise qualified, all wages from employment and net earnings from self-employment, whether or not taxable or covered.

**Economic assumptions**. See "Assumptions."

**Economic stabilization program.** A legislative program during the early 1970s that limited price increases.

**End-stage renal disease (ESRD).** Permanent kidney failure.

**Extended care services**. In the context of this report, an alternate name for "skilled nursing facility services."

**Federal Insurance Contributions Act (FICA)**. Provision authorizing taxes on the wages of employed persons to provide for OASDI and HI. The tax is paid in equal amounts by covered workers and their employers.

**Fee-screen year.** A specified period of time in which SMI-recognized fees pertain. The fee-screen year period has changed over the history of the trust fund.

**Financial interchange**. Provisions of the Railroad Retirement Act providing for transfers between the trust funds and the Social Security Equivalent Benefit Account of the Railroad Retirement program in order to place each trust fund in the same position as if railroad employment had always been covered under Social Security.

**Fiscal year**. The accounting year of the U.S. Government. Since 1976, each fiscal year has begun October 1 of the prior calendar year and ended the following September 30. For example, fiscal year 2002 began October 1, 2001 and will end September 30, 2002.

**Fixed capital assets**. The net worth of facilities and other resources.

**Frequency distribution.** An exhaustive list of possible outcomes for a variable, and the associated probability of each outcome. The sum of the probabilities of all possible outcomes from a frequency distribution is 100 percent.

**General fund of the treasury**. Funds held by the U.S. Treasury, other than revenue collected for a specific trust fund (such as HI or SMI) and maintained in a separate account for that purpose. The majority of this fund is derived from individual and business income taxes.

**General revenue**. Income to the HI and SMI trust funds from the general fund of the treasury. Only a very small percentage of total HI trust fund income each year is attributable to general revenue.

**Gramm-Rudman-Hollings Act**. The Balanced Budget and Emergency Deficit Control Act of 1985.

**Gross Domestic Product (GDP)**. The total dollar value of all goods and services produced in a year in the United States, regardless of who supplies the labor or property.

**High cost alternative**. See "Assumptions."

**Home health agency (HHA)**. A public agency or private organization that is primarily engaged in providing the following services in the home: skilled nursing services, other therapeutic services (such as physical, occupational, or speech therapy), and home health aide services.

**Hospice**. A provider of care for the terminally ill; delivered services generally include home health care, nursing care, physician services, medical supplies, and short-term inpatient hospital care.

**Hospital assumptions**. These include differentials between hospital labor and non-labor indices compared with general economy labor and non-labor indices; rates of admission incidence; the trend toward treating less complicated cases in outpatient settings; and continued improvement in DRG coding.

**Hospital coinsurance**. For the 61st through 90th day of hospitalization in a benefit period, a daily amount for which the beneficiary is responsible, equal to one-fourth of the inpatient hospital deductible; for lifetime reserve days, a daily amount for which the beneficiary is responsible, equal to one-half of the inpatient hospital deductible (see "Lifetime reserve days").

**Hospital input price index**. An alternate name for "hospital market basket."

**Hospital Insurance (HI)**. The Medicare trust fund that covers specified inpatient hospital services, posthospital skilled nursing care, home health services, and hospice care for aged and disabled individuals who meet the eligibility requirements. Also known as Medicare Part A.

**Hospital market basket**. The cost of the mix of goods and services (including personnel costs but excluding nonoperating costs) comprising routine, ancillary, and special care unit inpatient hospital services.

**Income rate**. The ratio of income from tax revenues on an incurred basis (payroll tax contributions and income from the taxation of OASDI benefits) to the HI taxable payroll for the year.

**Incurred basis**. The costs based on when the service was performed rather than when the payment was made.

**Independent laboratory.** A free-standing clinical laboratory meeting conditions for participation in the Medicare program and billing through a carrier.

**Inpatient hospital deductible**. An amount of money that is deducted from the amount payable by Medicare Part A for inpatient hospital services furnished to a beneficiary during a spell of illness.

**Inpatient hospital services**. These services include bed and board, nursing services, diagnostic or therapeutic services, and medical or surgical services.

**Interest**. A payment for the use of money during a specified period.

**Interfund borrowing**. The borrowing of assets by a trust fund (OASI, DI, HI, or SMI) from another of the trust funds when one of the funds is in danger of exhaustion. Interfund borrowing was authorized only during 1982-1987.

**Intermediary**. A private or public organization that is under contract to CMS to determine costs of, and make payments to, providers for HI and certain SMI services.

**Intermediate assumptions**. See "Assumptions."

**Lifetime reserve days**. Under HI, each beneficiary has 60 lifetime reserve days that he or she may opt to use when regular inpatient hospital benefits are exhausted. The beneficiary pays one-half of the inpatient hospital deductible for each lifetime reserve day used.

**Long range**. The next 75 years.

**Low cost alternative**. See "Assumptions."

**Managed care**. Includes Health Maintenance Organizations (HMO), Competitive Medical Plans (CMP), and other plans that provide health services on a prepayment basis, which is based either on cost or risk, depending on the type of contract they have with Medicare. See also "Medicare+Choice."

**Market basket**. See "Hospital market basket."

**Maximum tax base**. Annual dollar amount above which earnings in employment covered under HI are not taxable. Beginning in 1994, the maximum tax base is eliminated under HI.

**Maximum taxable amount of annual earnings**. See "Maximum tax base."

**Medicare**. A nationwide, federally administered health insurance program authorized in 1965 to cover the cost of hospitalization, medical care, and some related services for most people over age 65. In 1972 coverage was extended to people receiving Social Security Disability Insurance payments for 2 years, and people with end-stage renal disease. Medicare consists of two separate but coordinated trust funds: Part A (Hospital Insurance, HI) and Part B (Supplementary Medical Insurance, SMI). Almost all persons who are aged 65 and over or disabled and who are entitled to HI are eligible to enroll in SMI on a voluntary basis by paying a monthly premium. Health insurance protection is available to Medicare beneficiaries without regard to income.

**Medicare Economic Index (MEI).** An index often used in the calculation of the increases in the prevailing charge levels that help to determine allowed charges for physician services. In 1992 and later, this index is considered in connection with the update factor for the physician fee schedule.

**Medicare Payment Advisory Commission (MedPAC)**. A commission established by Congress in the Balanced Budget Act of 1997 to replace the Prospective Payment Assessment Commission and the Physician Payment Review Commission. MedPAC is directed to provide the Congress with advice and recommendations on policies affecting the Medicare program.

**Medicare+Choice.** An expanded set of options, established by the Balanced Budget Act of 1997, for the delivery of health care under Medicare. Most Medicare beneficiaries can choose to receive benefits through the original fee-for-service program or through one of the following Medicare+Choice plans: (1) coordinated care plans (such as health maintenance organizations, provider sponsored organizations, and preferred provider organizations); (2) Medical Savings Account (MSA)/High Deductible plans (through a demonstration available to up to 390,000 beneficiaries); or (3) private fee-for-service plans.

**Military service wage credits**. Credits recognizing that military personnel receive other cash payments and wages in kind (such as food and shelter) in addition to their basic pay. Noncontributory wage credits of $160 were provided for each month of active military service from September 16, 1940 through December 31, 1956. For years after 1956, the basic pay of military personnel is covered under the Social Security program on a contributory basis. In addition to contributory credits for basic pay, noncontributory wage credits of $300 were granted for each calendar quarter in which a person received pay for military service from January 1957 through December 1977. Deemed wage credits of $100 were granted for each $300 of military wages, up to a maximum of $1,200 per calendar year, from January 1978 through December 2001. See also "Quinquennial military service determinations and adjustments."

**Noncontributory or deemed wage credits**. Wages and wages in kind that were not subject to the HI tax but are deemed as having been. Deemed wage credits exist for the purposes of (1) determining HI eligibility for individuals who might not be eligible for HI coverage without payment of a premium were it not for the deemed wage credits; and (2) calculating reimbursement due the HI trust fund from the general fund of the treasury. The first purpose applies in the case of providing coverage to persons during the transitional periods when HI began and when it was expanded to cover federal employees; both purposes apply in the cases of military service wage credits and deemed wage credits granted for the internment of persons of Japanese ancestry during World War II.

**Old-Age, Survivors, and Disability Insurance (OASDI)**. The Social Security programs that pay for (1) monthly cash benefits to retired-worker (old-age) beneficiaries, their spouses and children, and survivors of deceased insured workers (OASI); and (2) monthly cash benefits to disabled-worker beneficiaries and their spouses and children, and for providing rehabilitation services to the disabled (DI).

**Outpatient hospital.** Part of the hospital providing services covered by SMI, including services in an emergency room or outpatient clinic, ambulatory surgical procedures, medical supplies such as splints, laboratory tests billed by the hospital, etc.

**Part A**. The Medicare Hospital Insurance trust fund.

**Part A premium**. A monthly premium paid by or on behalf of individuals who wish for and are entitled to voluntary enrollment in

Medicare HI. These individuals are those who are aged 65 and older, are uninsured for social security or railroad retirement, and do not otherwise meet the requirements for entitlement to Part A. Disabled individuals who have exhausted other entitlement are also qualified. These individuals are those not now entitled but who have been entitled under section 226(b) of the Act, who continue to have the disabling impairment upon which their entitlement was based, and whose entitlement ended solely because the individuals had earnings that exceeded the substantial gainful activity amount (as defined in section 223(d)(4) of the Act).

**Part B**. The Medicare Supplementary Medical Insurance trust fund.

**Part B premium.** Monthly premium paid by those individuals who have voluntarily enrolled in SMI.

**Participating hospitals**. Those hospitals that participate in the Medicare program.

**Pay-as-you-go financing**. A financing scheme in which taxes are scheduled to produce just as much income as required to pay current benefits, with trust fund assets built up only to the extent needed to prevent exhaustion of the fund by random fluctuations.

**Payroll taxes**. Taxes levied on the gross wages of workers.

**Peer Review Organization (PRO)**. A group of practicing physicians and other health care professionals paid by the federal government to review the care given to Medicare patients.

**Percentile.** A number that corresponds to one of the equal divisions of the range of a variable in a given sample and that characterizes a value of the variable as not exceeded by a specified percentage of all the values in the sample. For example, a score higher than 97 percent of those attained is said to be in the $97^{th}$ percentile.

**Present value**. The present value of a future stream of payments is the lump-sum amount that, if invested today, together with interest earnings would be just enough to meet each of the payments as it fell due. At the time of the last payment, the invested fund would be exactly zero.

**Projection error**. Degree of variation between estimated and actual amounts.

**Prospective payment system (PPS)**. A method of reimbursement in which Medicare payment is made based on a predetermined, fixed amount. The payment amount for a particular service is derived based on the classification system of that service (for example, DRGs for inpatient hospital services).

**Provider**. Any organization, institution, or individual who provides health care services to Medicare beneficiaries. Hospitals (inpatient services), skilled nursing facilities, home health agencies, and hospices are the providers of services covered under Medicare Part A. Physicians, ambulatory surgical centers, and outpatient clinics are some of the providers of services covered under Medicare Part B.

**Quinquennial military service determination and adjustments**. Prior to the Social Security Amendments of 1983, quinquennial determinations (that is, estimates made once every 5 years) were made of the costs arising from the granting of deemed wage credits for military service prior to 1957; annual reimbursements were made from the general fund of the treasury to the HI trust fund for these costs. The Social Security Amendments of 1983 provided for (1) a lump-sum transfer in 1983 for (a) the costs arising from the pre-1957 wage credits, and (b) amounts equivalent to the HI taxes that would have been paid on the deemed wage credits for military service for 1966 through 1983, inclusive, if such credits had been counted as covered earnings; (2) quinquennial adjustments to the pre-1957 portion of the 1983 lump-sum transfer; (3) general fund transfers equivalent to HI taxes on military deemed wage credits for 1984 and later, to be credited to the fund on July 1 of each year; and (4) adjustments as deemed necessary to any previously transferred amounts representing HI taxes on military deemed wage credits.

**Railroad Retirement**. A federal insurance program similar to Social Security designed for workers in the railroad industry. The provisions of the Railroad Retirement Act provide for a system of coordination and financial interchange between the Railroad Retirement program and the Social Security program.

**Real-wage differential**. The difference between the percentage increases, before rounding, in (1) the average annual wage in covered employment, and (2) the average annual CPI.

**Reasonable-cost basis**. The calculation to determine the reasonable cost incurred by individual providers when furnishing covered services to beneficiaries. The reasonable cost is based on the actual

cost of providing such services, including direct and indirect costs of providers, and excluding any costs that are unnecessary in the efficient delivery of services covered by a health insurance program.

**Residual factors.** Factors other than price, including volume of services, intensity of services, and age/sex changes.

**Self-employment**. Operation of a trade or business by an individual or by a partnership in which an individual is a member.

**Self-Employment Contributions Act (SECA)**. Provision authorizing taxes on the net income of most self-employed persons to provide for OASDI and HI.

**Sequester**. The reduction of funds to be used for benefits or administrative costs from a federal account, based on the requirements specified in the Gramm-Rudman-Hollings Act.

**Short range**. The next 10 years.

**Skilled nursing facility (SNF)**. An institution that is primarily engaged in providing skilled nursing care and related services for residents who require medical or nursing care, or that is engaged in the rehabilitation of injured, disabled, or sick persons.

**SNF coinsurance**. For the 21st through 100th day of extended care services in a benefit period, a daily amount for which the beneficiary is responsible, equal to one-eighth of the inpatient hospital deductible.

**Social Security Act**. Public Law 74-271, enacted on August 14, 1935, with subsequent amendments. The Social Security Act consists of 20 titles, four of which have been repealed. The HI and SMI trust funds are authorized by Title XVIII of the Social Security Act.

**Special public-debt obligation**. Securities of the U.S. Government issued exclusively to the OASI, DI, HI, and SMI trust funds and other federal trust funds. Sections 1817(c) and 1841(a) of the Social Security Act provide that the public-debt obligations issued for purchase by the HI and SMI trust funds, respectively, shall have maturities fixed with due regard for the needs of the funds. The usual practice in the past has been to spread the holdings of special issues, as of every June 30, so that the amounts maturing in each of the next

15 years are approximately equal. Special public-debt obligations are redeemable at par at any time.

**Spell of illness**. A period of consecutive days, beginning with the first day on which a beneficiary is furnished inpatient hospital or extended care services, and ending with the close of the first period of 60 consecutive days thereafter in which the beneficiary is in neither a hospital nor a skilled nursing facility.

**Stochastic model.** An analysis involving a random variable. For example, a stochastic model may include a frequency distribution for one assumption. From the frequency distribution, possible outcomes for the assumption are selected randomly for use in an illustration.

**Summarized cost rate**. The ratio of the present value of expenditures to the present value of the taxable payroll for the years in a given period. In this context, the expenditures are on an incurred basis and exclude costs for those uninsured persons for whom payments are reimbursed from the general fund of the treasury, and for voluntary enrollees, who pay a premium in order to be enrolled. The summarized cost rate includes the cost of reaching and maintaining a "target" trust fund level, known as a contingency fund ratio. Because a trust fund level of about 1 year's expenditures is considered to be an adequate reserve for unforeseen contingencies, the targeted contingency fund ratio used in determining summarized cost rates is 100 percent of annual expenditures. Accordingly, the summarized cost rate is equal to the ratio of (1) the sum of the present value of the outgo during the period, plus the present value of the targeted ending trust fund level, plus the beginning trust fund level, to (2) the present value of the taxable payroll during the period.

**Summarized income rate**. The ratio of (1) the present value of the tax revenues incurred during a given period (from both payroll taxes and taxation of OASDI benefits), to (2) the present value of the taxable payroll for the years in the period.

**Supplementary Medical Insurance (SMI)**. The Medicare trust fund that pays for a portion of the costs of physicians' services, outpatient hospital services, and other related medical and health services for voluntarily enrolled aged and disabled individuals. Also known as Medicare Part B.

**Sustainable growth rate**. A system for establishing goals for the rate of growth in expenditures for physicians' services.

**Tax rate**. The percentage of taxable earnings, up to the maximum tax base, that is paid for the HI tax. Currently, the percentages are 1.45 for employees and employers, each. The self-employed pay 2.9 percent.

**Taxable earnings**. Taxable wages and/or self-employment income under the prevailing annual maximum taxable limit.

**Taxable payroll**. A weighted average of taxable wages and taxable self-employment income. When multiplied by the combined employee-employer tax rate, it yields the total amount of taxes incurred by employees, employers, and the self-employed for work during the period.

**Taxable self-employment income**. Net earnings from self-employment—generally above $400 and below the annual maximum taxable amount for a calendar or other taxable year—less any taxable wages in the same taxable year.

**Taxable wages**. Wages paid for services rendered in covered employment up to the annual maximum taxable amount.

**Taxation of benefits**. Beginning in 1994, up to 85 percent of an individual's or a couple's OASDI benefits is potentially subject to federal income taxation under certain circumstances. The revenue derived from taxation of benefits in excess of 50 percent, up to 85 percent, is allocated to the HI trust fund.

**Taxes**. See "Payroll taxes."

**Term insurance.** A type of insurance that is in force for a specified period of time.

**Test of Long-Range Close Actuarial Balance**. Summarized income rates and cost rates are calculated for each of 66 valuation periods within the full 75-year long-range projection period under the intermediate assumptions. The first of these periods consists of the next 10 years. Each succeeding period becomes longer by 1 year, culminating with the period consisting of the next 75 years. The long-range test is met if, for each of the 66 time periods, the actuarial balance is not less than zero or is negative by, at most, a specified percentage of the summarized cost rate for the same time period. The percentage allowed for a negative actuarial balance is 5 percent for the full 75-year period and is reduced uniformly for shorter periods, approaching zero as the duration of the time periods approaches the

first 10 years. The criterion for meeting the test is less stringent for the longer periods in recognition of the greater uncertainty associated with estimates for more distant years. This test is applied to HI trust fund projections made under the intermediate assumptions.

**Test of Short-Range Financial Adequacy**. The conditions required to meet this test are as follows: (1) If the trust fund ratio for a fund exceeds 100 percent at the beginning of the projection period, then it must be projected to remain at or above 100 percent throughout the 10-year projection period; (2) alternatively, if the fund ratio is initially less than 100 percent, it must be projected to reach a level of at least 100 percent within 5 years (and not be depleted at any time during this period), and then remain at or above 100 percent throughout the rest of the 10-year period. This test is applied to HI trust fund projections made under the intermediate assumptions.

**Trust fund**. Separate accounts in the U. S. Treasury, mandated by Congress, whose assets may be used only for a specified purpose. For the HI and SMI trust funds, monies not withdrawn for current benefit payments and administrative expenses are invested in interest-bearing federal securities, as required by law; the interest earned is also deposited in the trust funds.

**Trust fund ratio**. A short-range measure of the adequacy of the HI and SMI trust fund level; defined as the assets at the beginning of the year expressed as a percentage of the outgo during the year.

**Unit input intensity allowance**. The amount added to, or subtracted from, the hospital input price index to yield the prospective payment system update factor.

**Valuation period**. A period of years that is considered as a unit for purposes of calculating the status of a trust fund.

**Voluntary enrollee**. Certain individuals, aged 65 or older or disabled, who are not otherwise entitled to Medicare and who opt to obtain coverage under Part A by paying a monthly premium.

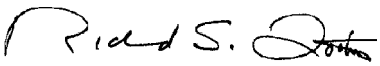
**Year of exhaustion**. The first year in which a trust fund is unable to pay benefits when due because the assets of the fund are exhausted.

## *F. STATEMENT OF ACTUARIAL OPINION*

It is my opinion that (1) the techniques and methodology used herein to evaluate the financial status of the Federal Hospital Insurance Trust Fund and the Federal Supplementary Medical Insurance Trust Fund are based upon sound principles of actuarial practice and are generally accepted within the actuarial profession; and (2) the principal assumptions used and the resulting actuarial estimates are, individually and in the aggregate, reasonable for the purpose of evaluating the financial status of the trust funds, taking into consideration the past experience and future expectations for the population, the economy, and the program.

In past reports, I have expressed a concern that future trust fund financial operations were more likely to prove worse than the intermediate projections than they were to prove better. As a result of the revised demographic assumptions for the 2002 OASDI and Medicare reports, and the growing evidence that the U.S. economy has experienced favorable structural changes in recent years, I believe that the assumptions in this year's reports are adequately centered within the reasonable range of expectation.

The future cost of the Medicare program remains very uncertain. Readers are cautioned not to focus solely on just one set of assumptions but rather to recognize that any result within the range shown can reasonably be expected to occur. As noted in this report, income to the Hospital Insurance trust fund is projected to fall substantially short of expenditures in the long term under a broad range of assumptions. Thus, the need for attention to the HI trust fund's long-range financial imbalance remains apparent.



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