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**1986 ANNUAL REPORT OF  
THE BOARD OF TRUSTEES OF THE  
FEDERAL SUPPLEMENTARY MEDICAL  
INSURANCE TRUST FUND**

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**COMMUNICATION**

**From**

**THE BOARD OF TRUSTEES,  
FEDERAL SUPPLEMENTARY MEDICAL  
INSURANCE TRUST FUND**

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**Transmitting**

**THE 1986 ANNUAL REPORT OF THE BOARD,  
PURSUANT TO  
SECTION 1841(b) OF THE SOCIAL SECURITY ACT,  
AS AMENDED**



LETTER OF TRANSMITTAL

Board of Trustees of the  
Federal Supplementary Medical Insurance Trust Fund  
Washington, D.C, March 31, 1986

HONORABLE THOMAS P. O'NEILL, JR.  
Speaker of the House of Representatives  
Washington, D.C.

HONORABLE GEORGE BUSH  
President of the Senate  
Washington, D.C.

GENTLEMEN:

We have the honor of transmitting to you the 1986 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund (the 21st such report), in compliance with the provisions of section 184(b) of the Social Security Act.

Respectfully,

JAMES A. BAKER, III,  
Secretary of the Treasury, and  
Managing Trustee of the Trust Fund

WILLIAM E. BROCK,  
Secretary of Labor,  
and Trustee

OTIS R. BOWEN, M.D.,  
Secretary of Health and  
Human Services and Trustee

MARY FALVEY FULLER,  
Trustee

SUZANNE DENBO JAFFE,  
Trustee

HENRY R. DESMARAIS, M.D.,  
Acting Administrator of the Health Care Financing  
Administration, and Secretary,  
Board of Trustees



## CONTENTS

The Board of Trustees. . . . .	1
Executive Summary . . . . .	1
Social Security Amendments Since the 1985 Report . . . . .	4
Nature of the Trust Fund . . . . .	5
Summary of the Operations of the Trust Fund, Fiscal Year 1985 . . . . .	8
Expected Operations and Status of the Trust Fund During the Period October 1, 1985 to December 31, 1988 . . . . .	14
Actuarial Status of the Trust Fund. . . . .	18
Conclusion. . . . .	24
Appendix A. Actuarial Methodology and Principal Assumptions for Cost Estimates for the Supplementary Medical Insurance Program . . . . .	25
Appendix B. Statement of Actuarial Assumptions and Bases Employed in Determining the Monthly Actuarial Rates and the Standard Monthly Premium Rate for the Supplementary Medical Insurance Program Beginning January 1986 . . . . .	37
Appendix C. Statement of Actuarial Opinion . . . . .	43

## TABLES

1.—Standard Monthly Premium Rates, Actuarial Rates, and Matching Ratios . . . . .	6
2.—Statement of Operations of the Supplementary Medical Insurance Trust Fund During Fiscal Year 1985 . . . . .	9
3.—Comparison of Actual and Estimated Operations of the Supplementary Medical Insurance Trust Fund, Fiscal Year 1985 . . . . .	11
4.—Assets of the Supplementary Medical Insurance Trust Fund at the End of Fiscal Years 1984 and 1985 . . . . .	12
5.—Estimated Progress of the Supplementary Medical Insurance Trust Fund (Cash Basis) During Fiscal Years 1986-1988 and Actual Data for 1967-1985 . . . . .	16
6.—Estimated Progress of the Supplementary Medical Insurance Trust Fund (Cash Basis) Calendar Years 1986-1988 and Actual Data for 1967-1985 . . . . .	17
7.—Estimated Income and Disbursements Incurred under Supplementary Medical Insurance Program for Financing Periods Through December 31, 1986 . . . . .	20
8.—Summary of Estimated Assets and Liabilities of the Supplementary Medical Insurance Program as of the End of the Financing Period, for Periods Through December 31, 1986 . . . . .	21
9.—Actuarial Status of the SMI Trust Fund under Three Sets of Assumptions for Financing Periods Through December 31, 1986 . . . . .	23
A1.—Incurred Reimbursement Amounts per Enrollee: Historical. . . . .	27
A2.—Incurred Reasonable Charges or Costs per Enrollee: Historical . . . . .	28
A3.—Components of Increases in Total Recognized Charges per Enrollee for Physician Services: Historical . . . . .	29
A4.—Components of Increases in Total Recognized Charges per Enrollee for Physician Services: Projected . . . . .	31
A5.—Increases in Recognized Charges and Costs per Enrollee for Institutional and Other Services. . . . .	32
A6.—Incurred Reasonable Charges or Costs per Enrollee: Projected. . . . .	33
A7.—Incurred Reimbursement Amounts: Projected . . . . .	34
A8.—Incurred Reimbursement for End-Stage Renal Disease. . . . .	35
A9.—Aggregate Reimbursement Amounts on a Cash Basis. . . . .	36

## FIGURES

1.—SMI Monthly per Capita Income. . . . .	2
2.—Actuarial Status of the SMI Trust Fund . . . . .	4



# **1986 ANNUAL REPORT OF THE BOARD OF TRUSTEES OF THE FEDERAL SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND**

## **THE BOARD OF TRUSTEES**

The Federal Supplementary Medical Insurance Trust Fund, established on July 30, 1965, is held by the Board of Trustees under the authority of section 1841(b) of the Social Security Act, as amended. The Board has five members. Three serve in an ex officio capacity. These members are the Secretary of the Treasury, the Secretary of Labor, and the Secretary of Health and Human Services. Two public members, Mary Falvey Fuller and Suzanne Denbo Jaffe, are provided for by the Social Security Amendments of 1983 (Public Law 98-21, enacted into law on April 20, 1983). The two public members were nominated by the President for a term of four years and were confirmed by the Senate.

By law, the Secretary of the Treasury is designated as the Managing Trustee and the Administrator of the Health Care Financing Administration is designated as Secretary of the Board. The Board of Trustees reports to the Congress each year on the operation and status of the trust fund, in compliance with section 1841(b)(2) of the Social Security Act. This is the 1986 annual report, the twenty-first such report.

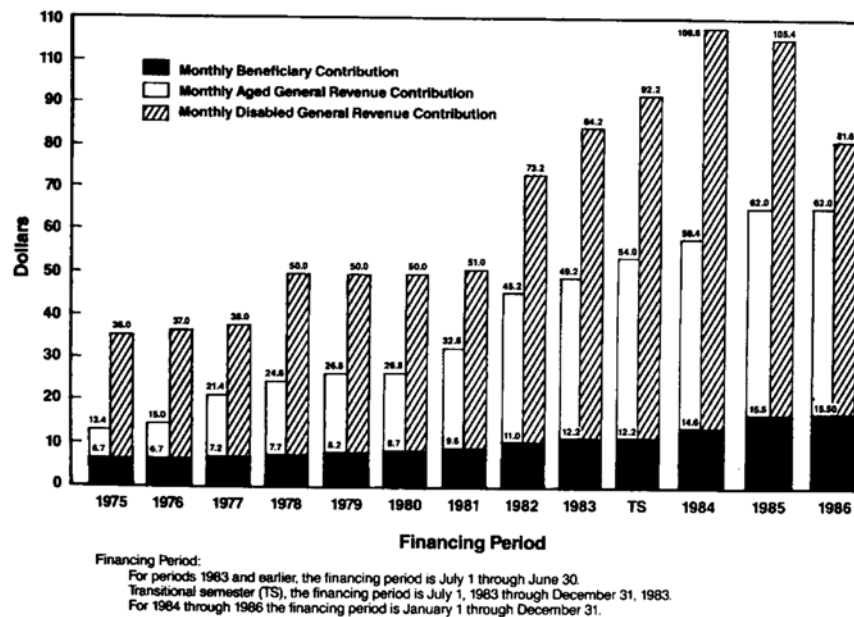
## **EXECUTIVE SUMMARY**

The supplementary medical insurance (SMI) program pays for physicians' services, outpatient hospital services, and other medical expenses for both those aged 65 and over and for those long term disabled. In calendar year 1985, 29.9 million people were covered under SMI. General revenue contributions during 1985 amounted to \$18.3 billion, accounting for 72.7 percent of all SMI income. About 22.4 percent of all income resulted from the premiums paid by the participants, with interest payments to the SMI fund accounting for the remaining 4.9 percent. Of the \$23.9 billion in SMI disbursements, \$22.9 billion was for benefit payments while the remaining \$0.9 billion was spent for administrative expenses. SMI administrative expenses were 3.9 percent of total disbursements.

The SMI program is financed on an accrual basis with a contingency margin. This means that the SMI trust fund should always be somewhat greater than the claims that have been incurred by enrollees but not yet paid by the program. The trust fund holds all of the income not currently needed to pay benefits and related expenses. The assets of the fund may not be used for any other purpose; however, they are invested in certain interest-bearing obligations of the U.S. Government.

Financing for the supplementary medical insurance program is established annually on the basis of standard monthly premium rates (paid by or on behalf of all participants) and monthly actuarial rates determined separately for aged and disabled beneficiaries (on which general revenue contributions are based). Prior to the 6-month transition period (July 1, 1983 through December 31, 1983), these rates were applicable in the 12-month periods ending June 30. Beginning January 1, 1984, the period for which rates were applicable was changed to calendar years. Monthly actuarial rates are equal to one-half the monthly amounts necessary to finance the SMI program. These rates determine the amount to be contributed from general revenues on behalf of each enrollee. Based on the formula in the law, the Government contribution effectively makes up the difference between twice the monthly actuarial rates and the standard monthly premium rate. Figure 1 presents these values for financing periods since 1975. The extent to which general revenue financing is becoming the major source of income for the program is clearly indicated in this figure.

Figure 1.—SMI Monthly per Capita Income\*



## Operations of the SMI Program

Projected operations of the fund through 1988 are shown in tables 5 and 6 in this report. As can be seen, income has exceeded disbursements for most of the historical years. However, at the time that financing was being established for calendar year 1986, assets appeared to be more than sufficient to cover the incurred costs and an appropriate contingency. Therefore, the financing was established to reduce the assets to a more desirable level. As a result, in calendar year 1986

disbursements are projected to exceed income, and the trust fund balance is projected to decrease through calendar year 1986. By the end of calendar year 1987, though, the trust fund balance is projected to increase. The financial status of the program depends on both the total net assets and liabilities. It is, therefore, necessary to examine the incurred experience of the program, since it is this experience which is used to determine the actuarial rates discussed above and which forms the basis of the concept of actuarial soundness as it relates to the SMI program.

### **Actuarial Soundness of the SMI Program**

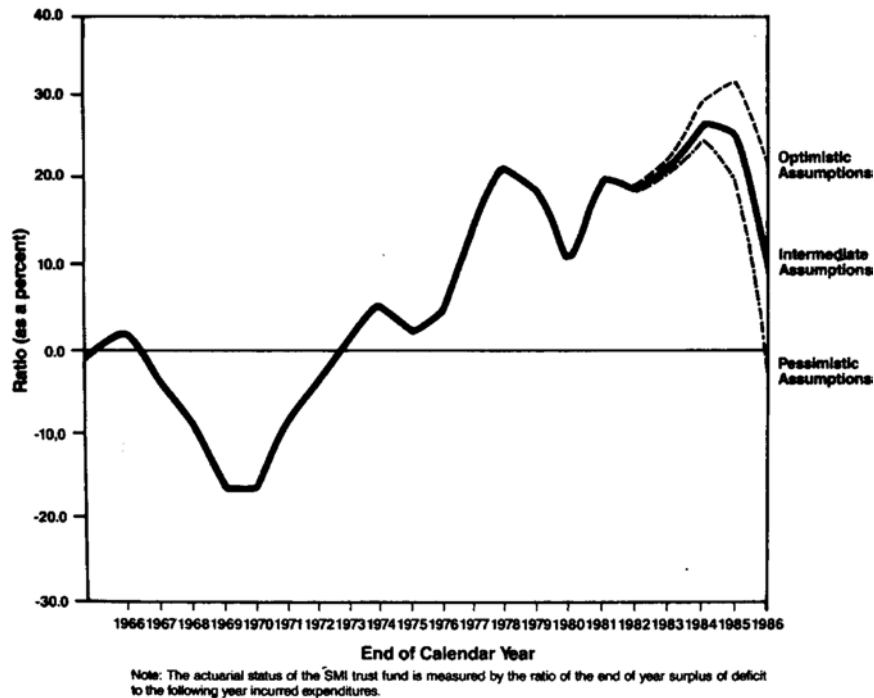
The concept of actuarial soundness, as it applies to the supplementary medical insurance program, is closely related to the concept as it applies to private group insurance. The supplementary medical insurance program is essentially yearly renewable term insurance financed from premium income paid by the enrollees and from income contributed from general revenue in proportion to premium payments.

In testing the actuarial soundness of the supplementary medical insurance program, it is not appropriate to look beyond the period for which the enrollee premium rate and level of general revenue financing have been established. The primary tests of actuarial soundness, then, are that: (1) assets for years for which financing has been established be sufficient to meet the projected benefits and associated administrative expenses incurred for that period and (2) assets be sufficient to cover projected liabilities that will have been incurred by the end of that time but will not have been paid yet. Even if these tests of actuarial soundness are not met, the program can 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 cost increases under the program will be higher than assumed, assets should be sufficient to cover the impact of a moderate degree of projection error.

The primary tests for actuarial soundness and trust fund adequacy can be viewed by direct examination of absolute dollar levels. In providing an appropriate contingency or margin for error, however, there must be some relative measure. The relative measure or ratio used for this purpose is the ratio of net surplus or deficit to the following year's incurred expenditures. Figure 2 shows this ratio for historical years and for projected years under the intermediate assumptions (alternative II-B), as well as high and low cost sensitivity scenarios.

Financing for calendar year 1986 was established to reduce the excess of assets over liabilities to a more appropriate level. As a result, the excess of assets over liabilities is expected to decrease by December 31, 1986, to a level that more appropriately accommodates a contingency for projection errors.

Figure 2.—Actuarial Status of the SMI Trust Fund



### Conclusion of the Board of Trustees

The financing established through December 1986 is sufficient to cover projected benefits and administrative costs incurred through that time period, and to maintain a level of trust fund assets which is adequate to cover the impact of a moderate degree of projection error. The SMI program can thus be said to be actuarially sound.

Although the supplementary medical insurance program is financially sound, the Board notes with concern the rapid growth in the cost of the program. The Board recommends that Congress take action to curtail the rapid growth in the supplementary medical insurance program.

### SOCIAL SECURITY AMENDMENTS SINCE THE 1985 REPORT

Public Laws 99-107, 99-155, 99-181, 99-189, and 99-201 extended the freeze on fees for physicians' services until November 14, 1985, December 14, 1985, December 18, 1985, December 19, 1985, and March 14, 1986, respectively. Effective upon enactment.

Public Law 99-177, the "Balanced Budget and Emergency Deficit Control Act of 1985," which was enacted December 12, 1985, provided that physician reimbursement rates and other Part B provider rates will be reduced by one percent of current levels. The reduction would be up to

two percent in each ensuing fiscal year if a sequestration order is required. Certain provisions of this Act, also known as the Gramm-Rudman-Hollings initiative, have been declared unconstitutional in the United States District Court for the District of Columbia. The Court, however, ruled that the provisions of the Act can go into effect while it is in the appeals process. Thus, the estimated operations of the supplementary medical insurance trust fund that are displayed in this report are based on the assumption that the provisions of the Act are effective from March 1, 1986 until the close of fiscal year 1986 (September 30, 1986) only.

The Consolidated Omnibus Budget Reconciliation Act of 1986 has been passed by the Congress but has not yet become law. Thus, the impact of the provisions of that legislation are not reflected in this report.

### **NATURE OF THE TRUST FUND**

The Federal Supplementary Medical Insurance Trust Fund was established on July 30, 1965, as a separate account in the United States Treasury. All the financial operations of the supplementary medical insurance program are handled through this fund.

The major sources of receipts of the 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 in the program. Eligible persons aged 65 and over have been able to enroll in the program since its inception in July 1966. Since July 1973, disabled persons under age 65, who have met certain eligibility requirements, have also been able to enroll in the program.

The premiums paid by participants are based on the standard monthly premium rate, which is the same for participants aged 65 and over and for disabled participants under age 65. 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 participants is determined by applying a ratio (known as the matching rate), prescribed in the law for each group, to the amount of premiums received from that group of participants. The ratio is equal to: (1) twice the amount of the monthly actuarial rate applicable to the particular group of participants, minus the amount of the standard monthly premium rate, divided by (2) the amount of the standard monthly premium rate.

Standard monthly premium rates and actuarial rates are promulgated each year by the Secretary of Health and Human Services. The standard monthly premium rates in effect from the beginning of the program, July

1966 through June 1983, the rate for July 1983 through December 1983, and the rates for calendar years 1984 through 1986 are shown in table 1. Actuarial rates and the corresponding matching rates in effect from July 1973 through June 1983, the rates applicable for July 1983 through December 1983, and the rates for calendar years 1984 through 1986 are also shown.

**TABLE 1.—STANDARD MONTHLY PREMIUM RATES, ACTUARIAL RATES, AND MATCHING RATIOS**

	Standard monthly premium rate	Monthly actuarial rate		Matching ratio	
		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	—	—	—	—
April 1968 - June 1970	4.00	—	—	—	—
12-month period ending June 30 of -					
1971	5.30	—	—	—	—
1972	5.60	—	—	—	—
1973	5.80	—	—	—	—
1974 <sup>1</sup>	6.30	\$6.30	\$14.50	1.0000	3.6032
1975	6.70	6.70	18.00	1.0000	4.3731
1976	6.70	7.50	18.50	1.2388	4.5224
1977	7.20	10.70	19.00	1.9722	4.2778
1978	7.70	12.30	25.00	2.1948	5.4935
1979	8.20	13.40	25.00	2.2683	5.0976
1980	8.70	13.40	25.00	2.0805	4.7471
1981	9.60	16.30	25.50	2.3958	4.3125
1982	11.00	22.60	36.60	3.1091	5.6545
1983	12.20	24.60	42.10	3.0328	5.9016
July 1983 - December 1983	12.20	27.00	46.10	3.4262	6.5574
Calendar year					
1984	14.60	29.20	54.30	3.0000	6.4384
1985	15.50	31.00	52.70	3.0000	5.8000
1986	15.50	31.00	40.80	3.0000	4.2645

<sup>1</sup>In accordance with limitations on the costs of health care imposed under phase III of the Economic Stabilization program, the standard premium rate for July and August 1973 was set at \$5.80 and \$6.10, respectively. Effective September 1973, the rate increased to \$6.30.

Another source from which receipts of the trust fund are derived is interest received on investments held by the fund. The investment procedures of the fund are described later in this section.

Section 201(i) of the Social Security Act authorizes the Managing Trustee to accept and deposit in the trust fund unconditional money gifts or bequests made for the benefit of the fund or for any activity financed through the fund.

Expenditures for benefit payments and administrative expenses under the program are paid out of the trust fund. All expenses incurred by the Department of Health and Human Services and by the Department of the Treasury in carrying out the supplementary medical insurance provisions of title XVIII of the Social Security Act are charged to the trust fund. The Secretary of Health and Human Services certifies benefit

payments to the Managing Trustee, who makes the payments from the trust fund in accordance therewith.

Prior to October 1, 1983, hospitals, at their option, were permitted to combine their billing for both hospital costs and physician components of radiology and pathology services rendered hospital inpatients by hospital-based physicians. Where hospitals elected this billing procedure, payments were made initially from the hospital insurance trust fund, with reimbursement later to it from the supplementary medical insurance trust fund. The reimbursements so made were on a provisional basis and were subject to adjustment, with appropriate interest allowances, as the actual experience developed and was analyzed.

The Social Security Amendments of 1967 and 1972 authorize the Secretary of Health and Human Services to develop and conduct a broad range of 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 the hospital insurance and supplementary medical insurance programs. A sizeable portion of such costs of such experiments and demonstration projects are paid out of the hospital insurance and supplementary medical insurance trust funds, with the remainder funded through general revenues.

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 supplementary medical insurance program. Both the capital costs of construction financed directly from the trust fund and the rental, lease, or purchase contract costs of acquiring facilities are included in trust fund expenditures. In 1972-75, construction of several large facilities was authorized under purchase contract authority, wherein initial capital costs were borne by the private sector. Under this method of facilities acquisition, trust fund expenditures for use and ultimate Government ownership of a facility are made over periods of from 10 to 30 years. Whatever the manner of acquisition, the net worth of facilities and other fixed capital assets is not carried in the statement of the assets of the trust fund presented in this report. This is because the value of fixed capital assets does not represent funds available for benefit or administrative expenditures and, therefore, is not viewed as being a consideration in assessing the actuarial status of the funds.

That portion of the trust fund which, in the judgment of the Managing Trustee, is not required to meet current expenditures for benefits and administration is invested in interest-bearing obligations of the U.S. Government (including special public-debt obligations described below), in obligations guaranteed as to both principal and interest by the United States, or in certain federally sponsored agency obligations that are

designated in the laws authorizing their issuance as lawful investments for fiduciary and trust funds under the control and authority of the United States or any officer of the United States. Obligations of these types may be acquired on original issue at the issue price or by purchase of outstanding obligations at their market price.

The Social Security Act authorizes the issuance of special public-debt obligations for purchase exclusively by the trust fund. The law requires that such 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 next preceding the date of such issue) on all marketable interest-bearing obligations of the United States forming a part of the public debt which are not due or callable until after the expiration of 4 years from the end of such calendar month.

#### **SUMMARY OF THE OPERATIONS OF THE TRUST FUND, FISCAL YEAR 1985**

A statement of the income and disbursements of the Federal Supplementary Medical Insurance Trust Fund in fiscal year 1985 and of the assets of the fund at the beginning and end of the fiscal year is presented in table 2.



**TABLE 2.—STATEMENT OF OPERATIONS OF THE SUPPLEMENTARY MEDICAL  
INSURANCE TRUST FUND DURING FISCAL YEAR 1985**

(In thousands)

Total assets of the trust fund, beginning of period . . . . .		\$8,799,305
Receipts:		
Premiums from enrollees:		
Participants aged 65 and over . . . . .	\$5,042,337	
Disabled enrollees under age 65 . . . . .	482,013	
Total premiums . . . . .		5,524,350
Transfers from general fund of the Treasury:		
Government contributions:		
For premiums received from participants aged 65 and over . . . . .	15,071,755	
For premiums received from disabled participants under age 65 . . . . .	2,826,245	
Total Government contributions . . . . .		17,898,000
Other . . . . .		542
Interest:		
Interest on Investments . . . . .		1,147,310
Interest on amounts of interfund transfers <sup>1</sup> . . . . .		6,573
Total receipts . . . . .		24,576,775
Disbursements:		
Benefit payments . . . . .		21,807,882
Administrative expenses:		
Treasury administrative expenses . . . . .	2,779	
Salaries and expenses – SSA . . . . .	197,668	
Salaries and expenses – HCFA . . . . .	735,197	
Salaries and expenses Office of Secretary . . . . .	9,824	
Construction . . . . .	6,698	
Professional Standard review Organization . . . . .	129	
Public Health Service . . . . .	157	
Reimbursement of SSA expenses <sup>2</sup> . . . . .	0	
Reimbursement of HCFA expenses <sup>2</sup> . . . . .	-30,283	
Pay Assessment Commission . . . . .	364	
Office of Personnel Management expenses . . . . .	0	
Total administrative expenses . . . . .		922,533
Total disbursements . . . . .		22,730,414
Net addition to the trust fund . . . . .		1,846,361
Total assets of the trust fund, end of period . . . . .		\$10,645,667

<sup>1</sup>A positive figure represents a transfer of interest to the supplementary medical insurance trust fund from the other trust funds. A negative figure represents a transfer of interest from the supplementary medical insurance trust fund to the other trust funds.

<sup>2</sup>A positive figure represents a transfer from the supplementary medical insurance trust fund to the other trust funds. A negative figure represents a transfer to the supplementary medical insurance trust fund from the other trust funds.

NOTE: Totals do not necessarily equal the sum of rounded components.

A statement of the income and disbursements of the Federal Supplementary Medical Insurance Trust Fund in fiscal year 1985 and of the assets of the fund at the beginning and end of the fiscal year is presented in table 2.

The total assets of the trust fund amounted to \$8,799 million on September 30, 1984. During fiscal year 1985, total receipts amounted to \$24,577 million, and total disbursements were \$22,730 million. Total assets thus increased \$1,846 million during the year to a total of \$10,646 million on September 30, 1985.

Of the total receipts, \$5,042 million represented premium payments by (or on behalf of) participants aged 65 and over, and \$482 million

represented premium payments by (or on behalf of) disabled participants under age 65. Total premium payments amounted to \$5,524 million, an increase of 12.6 percent over the amount of \$4,907 million for the preceding year. This increase in premiums from participants resulted primarily from: (1) the growth of the number of persons enrolled in the supplementary medical insurance program and (2) the increase from

\$14.60 to \$15.50 per month in the standard premium rate that became effective on January 1, 1985.

Contributions received from the general fund of the treasury amounted to \$17,898 million, which accounted for 73 percent of total receipts. This amount consisted of \$15,072 million representing contributions relating to premiums paid by participants aged 65 and over, and \$2,826 million representing contributions relating to the premiums paid by disabled participants under age 65.

The remaining \$1,154 million of receipts consisted almost entirely of interest on the investments of the trust fund.

Of the \$22,730 million in total disbursements, \$21,808 million represented: (1) benefits paid directly from the trust fund for health services covered under Title XVIII of the Social Security Act, and (2) costs of experiments and demonstration projects in providing health care services.

The remaining \$923 million of disbursements was for net administrative expenses. Administrative expenses are allocated and charged directly to each of the four trust funds-old age and survivors insurance, disability insurance, hospital insurance, and supplementary medical insurance-on the basis of provisional estimates. Similarly, the expenses of administering other programs of the Health Care Financing Administration are also allocated and charged directly to the general fund of the Treasury on a provisional basis. Periodically, as actual experience develops and is analyzed, the allocations of administrative expenses and costs of construction for prior periods are adjusted by interfund transfers. This adjustment includes transfers between the hospital insurance and supplementary medical insurance trust funds and the program management general fund account, with appropriate interest allowances.

In table 3, the experience with respect to actual amounts of participants' premiums, Government contributions, and benefit payments in fiscal year 1985 is compared with the estimates for fiscal year 1985 which appeared in the 1984 and 1985 annual reports.

**TABLE 3.—COMPARISON OF ACTUAL AND ESTIMATED OPERATIONS OF THE  
SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND, FISCAL YEAR 1985**

(Dollar amounts in millions)

Item	Actual amount	Comparison of actual experience with estimates for FY 1985 published in -			
		1985 report		1984 report	
		Estimated amount	Actual as percentage of estimate	Estimated amount	Actual as percentage of estimate
Premiums from Participants	\$5,524	\$5,476	101	\$5,866	94
Government Contributions	17,898	17,898	100	19,020	94
Benefit Payments	21,808	21,436	102	23,773	92

Table 4 shows a comparison of the total assets of the fund and their distribution at the end of fiscal year 1984 and at the end of fiscal year 1985. The assets of the trust fund at the end of fiscal year 1984 totaled \$8,799 million, consisting of \$9,117 million in the form of obligations of the U.S. Government and, as an offset, an extension of credit of \$318 million against securities to be redeemed. The assets of the trust fund at the end of fiscal year 1985 totaled \$10,646 million, consisting of \$10,736 million in the form of obligations of the U.S. Government and, as an offset, an extension of credit of \$91 million against securities to be redeemed. A comparison of assets of the trust fund with liabilities for incurred but unpaid benefits (and related administrative expenses) is shown in a later section.

**TABLE 4.—ASSETS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND  
AT THE END OF FISCAL YEARS 1984 AND 1985<sup>1</sup>**

	September 30, 1984	September 30, 1985
Investments in public-debt obligations sold only to this fund (special Issues):		
Certificates of Indebtedness:		
12 7/8-percent, 1985 .....	\$577,173,000.00	—
13 3/4-percent, 1985 .....	456,583,000.00	—
10 5/8-percent, 1986 .....	—	\$231,460,000.00
Bonds:		
7 1/8-percent, 1986 .....	56,245,000.00	—
7 1/8-percent, 1987 .....	56,245,000.00	56,245,000.00
7 1/8-percent, 1988 .....	56,245,000.00	56,245,000.00
7 1/8-percent, 1989 .....	56,245,000.00	56,245,000.00
7 1/8-percent, 1990 .....	56,246,000.00	56,246,000.00
7 1/8-percent, 1991 .....	56,246,000.00	56,246,000.00
7 1/8-percent, 1992 .....	137,816,000.00	137,816,000.00
7 3/8-percent, 1986 .....	11,547,000.00	—
7 3/8-percent, 1987 .....	11,547,000.00	11,547,000.00
7 3/8-percent, 1988 .....	11,547,000.00	11,547,000.00
7 3/8-percent, 1989 .....	11,547,000.00	11,547,000.00
7 3/8-percent, 1990 .....	73,510,000.00	73,510,000.00
7 1/2-percent, 1986 .....	8,061,000.00	—
7 1/2-percent, 1987 .....	8,061,000.00	8,061,000.00
7 1/2-percent, 1988 .....	8,061,000.00	8,061,000.00
7 1/2-percent, 1989 .....	8,061,000.00	8,061,000.00
7 1/2-percent, 1990 .....	8,060,000.00	8,060,000.00
7 1/2-percent, 1991 .....	81,570,000.00	81,570,000.00
7 5/8-percent, 1986 .....	61,963,000.00	—
7 5/8-percent, 1987 .....	61,963,000.00	61,963,000.00
7 5/8-percent, 1988 .....	61,963,000.00	61,963,000.00
7 5/8-percent, 1989 .....	61,963,000.00	61,963,000.00
8 1/4-percent, 1986 .....	115,978,000.00	—
8 1/4-percent, 1987 .....	115,978,000.00	115,978,000.00
8 1/4-percent, 1988 .....	115,978,000.00	115,978,000.00
8 1/4-percent, 1989 .....	115,978,000.00	115,978,000.00
8 1/4-percent, 1990 .....	115,978,000.00	115,978,000.00
8 1/4-percent, 1991 .....	115,978,000.00	115,978,000.00
8 1/4-percent, 1992 .....	115,978,000.00	115,978,000.00
8 1/4-percent, 1993 .....	253,794,000.00	253,794,000.00
8 3/4-percent, 1986 .....	72,934,000.00	—
8 3/4-percent, 1987 .....	72,934,000.00	72,934,000.00
8 3/4-percent, 1988 .....	72,934,000.00	72,934,000.00
8 3/4-percent, 1989 .....	72,934,000.00	72,934,000.00
8 3/4-percent, 1990 .....	72,934,000.00	72,934,000.00
8 3/4-percent, 1991 .....	72,934,000.00	72,934,000.00
8 3/4-percent, 1992 .....	72,934,000.00	72,934,000.00
8 3/4-percent, 1993 .....	72,934,000.00	72,934,000.00
8 3/4-percent, 1994 .....	326,728,000.00	326,728,000.00
9 3/4-percent, 1995 .....	115,003,000.00	115,003,000.00
10 3/8-percent, 1987 .....	—	166,084,000.00
10 3/8-percent, 1988 .....	—	166,084,000.00
10 3/8-percent, 1989 .....	—	166,084,000.00
10 3/8-percent, 1990 .....	—	166,084,000.00
10 3/8-percent, 1991 .....	—	166,084,000.00
10 3/8-percent, 1992 .....	—	166,084,000.00
10 3/8-percent, 1993 .....	—	166,084,000.00
10 3/8-percent, 1994 .....	—	166,083,000.00
10 3/8-percent, 1995 .....	—	166,083,000.00
10 3/8-percent, 1996 .....	—	166,083,000.00
10 3/8-percent, 1997 .....	—	166,083,000.00
10 3/8-percent, 1998 .....	—	166,084,000.00
10 3/8-percent, 1999 .....	—	166,084,000.00
10 3/8-percent, 2000 .....	—	733,187,000.00
10 3/4-percent, 1986 .....	88,061,000.00	88,061,000.00
10 3/4-percent, 1987 .....	88,061,000.00	88,061,000.00

**TABLE 4.—ASSETS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND  
AT THE END OF FISCAL YEARS 1984 AND 1985<sup>1</sup>**

	September 30, 1984	September 30, 1985
10 3/4-percent, 1988 .....	88,061,000.00	88,061,000.00
10 3/4-percent, 1989 .....	88,060,000.00	88,060,000.00
10 3/4-percent, 1990 .....	88,060,000.00	88,060,000.00
10 3/4-percent, 1991 .....	88,060,000.00	88,060,000.00
10 3/4-percent, 1992 .....	88,060,000.00	88,060,000.00
10 3/4-percent, 1993 .....	88,060,000.00	88,060,000.00
10 3/4-percent, 1994 .....	88,060,000.00	88,060,000.00
10 3/4-percent, 1995 .....	88,060,000.00	88,060,000.00
10 3/4-percent, 1996 .....	88,061,000.00	88,061,000.00
10 3/4-percent, 1997 .....	88,061,000.00	88,061,000.00
10 3/4-percent, 1998 .....	456,989,000.00	456,989,000.00
13 1/4-percent, 1986 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1987 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1988 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1989 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1990 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1991 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1992 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1993 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1994 .....	42,201,000.00	42,201,000.00
13 1/4-percent, 1995 .....	253,926,000.00	253,926,000.00
13 1/4-percent, 1996 .....	368,928,000.00	368,928,000.00
13 1/4-percent, 1997 .....	368,928,000.00	368,928,000.00
13 3/4-percent, 1985 .....	143,720,000.00	—
13 3/4-percent, 1986 .....	110,114,000.00	110,114,000.00
13 3/4-percent, 1987 .....	110,114,000.00	110,114,000.00
13 3/4-percent, 1988 .....	110,114,000.00	110,114,000.00
13 3/4-percent, 1989 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1990 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1991 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1992 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1993 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1994 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1995 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1996 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1997 .....	110,115,000.00	110,115,000.00
13 3/4-percent, 1998 .....	110,114,000.00	110,114,000.00
13 3/4-percent, 1999 .....	567,103,000.00	567,103,000.00
Total investments in public-debt obligations .....	9,116,930,000.00	10,736,461,000.00
Undisbursed balance .....	-317,624,564.14 <sup>2</sup>	-90,794,287.45 <sup>2</sup>
Total assets .....	8,799,305,435.86	10,645,666,712.55

<sup>1</sup>The assets are carried at par value, which is the same as book value.

<sup>2</sup>The negative figure represented an extension of credit which was covered by redemptions of securities on the first day of the following month.

The net increase in the par value of the investments held by the fund during fiscal year 1985 amounted to \$1,620 million. New securities at a total par value of \$27,443 million were acquired during the fiscal year through the investment of receipts and reinvestment of funds made available from the redemption of securities. The par value of securities redeemed during the year was \$25,824 million. Included in these amounts is \$24,514 million in certificates of indebtedness that were acquired, and \$25,317 million in certificates of indebtedness that were redeemed, within the fiscal year.

The effective annual rate of interest earned by the assets of the supplementary medical insurance trust fund the 12 months ending on June 30, 1985, was 11.0 percent. (This period is used because interest on

special issues is paid semiannually on June 30 and December 31.) The interest rate on special issues purchased by the trust fund in June 1985 was 10 3/8 percent, payable semiannually.

**EXPECTED OPERATIONS AND STATUS OF THE TRUST  
FUND DURING THE PERIOD OCTOBER 1, 1985 TO  
DECEMBER 31, 1988**

Financing for the supplementary medical insurance program is established annually on the basis of standard monthly premium rates (paid by or on behalf of the participants) and actuarial rates (on which general revenue contributions are based). Prior to June 30, 1983, these rates were applicable to 12-month periods ending June 30. Beginning January 1, 1984, Public Law 98-21 changed the annual basis to the 12-month periods ending December 31. For the 6-month period July 1, 1983 through December 31, 1983 (hereafter also called the transition semester), the standard monthly premium rate was frozen at the June 1983 rate, and the actuarial rates were set at the rates promulgated in December 1982 for the 12-month period ending June 30, 1984.

Standard premium rates and actuarial rates have been set for periods through December 31, 1986. It has been assumed in this report that financing after that time will be established to cover the incurred expenses of the program as provided by the provisions described in the "Nature of the Trust Fund" section.

The projections shown in the following tables are based on two sets of economic assumptions labeled alternative A and alternative B. These alternatives reflect two different levels of expectation of future performance of the economy. Appendix A presents an explanation of the effects of alternative A and alternative B on the projections in this report.

Prior to the passage of Public Law 98-369, allowable fee limits for physician services were updated July 1 of every year. However, for the 15-month period from July 1, 1984 through September 30, 1985, Public Law 98-369 froze all fees for physician services at the same levels as in effect during the second quarter of 1984. Additionally, Public Law 98-369, changed the date for updating these allowable fee limits from July 1 to October 1 of each year, beginning on October 1, 1985.

Public Laws 99-107, 99-155, 99-181, 99-189, and 99-201 extended the freeze on fees for physician services until November 14, 1985, December 14, 1985, December 18, 1985, December 19, 1985, and March 14, 1986, respectively. During this extended period, physician services were reimbursed at the same levels as in effect during the second quarter of 1984.

Under both sets of projections, it is assumed that allowable fees for physician services, including some services unconstrained by Public Laws 98-369, 99-107, 99-155, 99-181, 99-189, and 99-201, will increase an average of 3.2 percent for the 12-month period ending September 30, 1986, and will increase an average of 7.0 percent for the 12-month period ending September 30, 1987. The costs per enrollee for institutional and other services under the SMI program are projected to increase an average of 27.7 percent for the 12-month period ending September 30, 1986, and 13.8 percent for the 12-month period ending September 30, 1987.

Table 5 shows the projected operations of the trust fund on a fiscal year basis through fiscal year 1988. Table 6 shows the corresponding development on a calendar year basis. The trust fund balance was \$10.6 billion at the end of fiscal year 1985. The actuarial rates applicable to calendar year 1985 were promulgated with margins to reduce assets to a more appropriate level. However, the developing experience indicated that assets were still more than sufficient to cover the incurred costs and to provide an appropriate contingency. Therefore, the actuarial rates for calendar year 1986 were promulgated with specific margins to reduce assets to a more desirable level. Based on these actuarial rates and the above economic assumptions, the fund is projected to decrease to \$8.7 billion under both alternatives by the end of fiscal year 1986, and then decrease to \$6.1 billion by the end of fiscal year 1987.

**TABLE 5.—ESTIMATED PROGRESS OF THE SUPPLEMENTARY MEDICAL  
INSURANCE TRUST FUND (CASH BASIS) DURING FISCAL YEARS 1986-1988 AND  
ACTUAL DATA FOR 1967-1985**

(In millions)

Fiscal Year <sup>1</sup>	Income				Disbursements			Balance in fund at end of year <sup>4</sup>
	Premiums from participants	Government contribu- tions <sup>2</sup>	Interest and Other Income <sup>3</sup>	Total Income	Benefit payments	Adminis- trative- expenses	Total disburse- ments	
Historical Data:								
1967	\$647	\$623	\$15	\$1,285	\$664	\$135 <sup>5</sup>	\$799	\$486
1968	698	634	21	1,353	1,390	142	1,532	307
1969	903	984	24	1,911	1,645	195	1,840	378
1970	936	928	12	1,876	1,979	217	2,196	57
1971	1,253	1,245	18	2,516	2,035	248	2,283	290
1972	1,340	1,365	29	2,734	2,255	289	2,544	481
1973	1,427	1,430	45	2,902	2,391	246	2,637	746
1974	1,704	2,029	76	3,809	2,874	409	3,283	1,272
1975	1,887	2,330	105	4,322	3,765	405	4,170	1,424
1976	1,951	2,939	104	4,994	4,672	528	5,200	1,219
T.Q.	539	878	4	1,421	1,269	132	1,401	1,239
1977	2,193	5,053	137	7,383	5,867	475	6,342	2,279
1978	2,431	6,386	228	9,045	6,852	504	7,356	3,968
1979	2,635	6,841	363	9,839	8,259	555	8,814	4,994
1980	2,928	6,932	415	10,275	10,144	593	10,737	4,532
1981	3,320	8,747	372	12,439	12,345	883	13,228	3,743
1982	3,831	13,323	473	17,627	14,806	754	15,560	5,810
1983	4,227	14,238	682	19,147	17,487	824	18,311	6,646
1984	4,907	16,811	807	22,525	19,473	899	20,372	8,799
1985	5,524	17,898	1,155	24,577	21,808	922	22,730	10,646
Projected:								
Alternative A:								
1986	5,658	17,973	1,135	24,766	25,755	948	26,703	8,709
1987	7,065	19,816	745	27,626	29,210	998	30,208	6,127
1988	7,802	28,194	600	36,596	33,325	1,053	34,378	8,345
Alternative B:								
1986	5,658	17,973	1,135	24,766	25,754	948	26,702	8,710
1987	7,065	19,816	746	27,627	29,208	994	30,202	6,135
1988	7,830	28,188	603	36,621	33,352	1,050	34,402	8,354

<sup>1</sup>For 1967 through 1976, fiscal years cover the interval from July 1 through June 30; the three-month interval from July 1, 1976, through September 30, 1976, is labeled "T.Q.", the transition quarter; fiscal years 1977-88 cover the interval from October 1 through September 30.

<sup>2</sup>The payments shown as being from the general fund of the Treasury include certain interest-adjustment items.

<sup>3</sup>Other Income includes recoveries of amounts reimbursed from the trust fund which are not obligations of the trust fund and other miscellaneous income.

<sup>4</sup>The financial status of the program depends on both the total net assets and the liabilities of the program (See Table 8).

<sup>5</sup>Administrative expenses shown include those paid in FY 1966 and 1967.



**TABLE 6.— ESTIMATED PROGRESS OF THE SUPPLEMENTARY MEDICAL  
INSURANCE TRUST FUND (CASH BASIS) CALENDAR YEARS 1986-1988 AND  
ACTUAL DATA FOR 1967-1985**  
(In millions)

Calendar Year	Income				Disbursements			Balance at end of year <sup>3</sup>
	Premium from participants	Government contribu- tions <sup>1</sup>	Interest and Other Income <sup>2</sup>	Total Income	Benefit payments	Adminis- trative expenses	Total disburse- ments	
Historical Data:								
1966	\$322	\$0	\$2	\$324	\$128	\$75	\$203	\$122
1967	640	933	24	1,597	1,197	110	1,307	412
1968	832	858	21	1,711	1,518	184	1,702	421
1969	914	907	18	1,839	1,865	196	2,061	199
1970	1,096	1,093	12	2,201	1,975	237	2,212	188
1971	1,302	1,313	24	2,639	2,117	260	2,377	450
1972	1,382	1,389	37	2,808	2,325	289	2,614	643
1973	1,550	1,705	57	3,312	2,526	318	2,844	1,111
1974	1,804	2,225	95	4,124	3,318	410	3,728	1,506
1975	1,918	2,648	107	4,673	4,273	462	4,735	1,444
1976	2,060	3,810	107	5,977	5,080	542	5,622	1,799
1977	2,247	5,386	172	7,805	6,038	467	6,505	3,099
1978	2,470	6,287	299	9,056	7,252	503	7,755	4,400
1979	2,719	6,645	404	9,768	8,708	557	9,265	4,902
1980	3,011	7,455	408	10,874	10,635	610	11,245	4,530
1981	3,722 <sup>4</sup>	11,291 <sup>4</sup>	361	15,374	13,113	915	14,028	5,877
1982	3,697 <sup>4</sup>	12,284 <sup>4</sup>	599	16,580	15,455	772	16,227	6,230
1963	4,236	14,861	727	19,824	18,106	878	18,984	7,070
1984	5,167	17,054	959	23,180	19,661	891	20,552	9,698
1985	5,613	18,250	1,243	25,106	22,947	933	23,880	10,924
Projected:								
Alternative A:								
1986	5,689	17,702	912	24,303	26,565	961	27,526	7,701
1987	7,523	23,189	612	31,324	30,229	1,013	31,242	7,783
1988	7,894	27,216	655	35,765	34,376	1,067	35,443	8,105
Alternative B:								
1986	5,689	17,702	912	24,303	26,562	960	27,522	7,705
1987	7,523	23,190	612	31,325	30,234	1,009	31,243	7,787
1988	7,932	27,184	663	35,779	34,415	1,063	35,478	8,088

<sup>1</sup>The payments shown as being from the general fund of the Treasury include certain Interest-adjustment Items.

<sup>2</sup>Other income includes recoveries of amounts reimbursed from the trust fund which are not obligations of the trust fund and other miscellaneous Income.

<sup>3</sup>The financial status of the program depends on both the total net assets and the liabilities of the program (See Table 8).

<sup>4</sup>Section 708 of Title VII of the Social Security Act modified the provisions for the delivery of Social Security benefit checks when the regularly designated delivery day falls on a Saturday, Sunday, or legal public holiday. Delivery of benefit checks normally due January, 1982 occurred on December 31, 1981. Consequently the SMI premiums withheld from the checks (\$264 million) and the general revenue contributions (\$883 million) were added to the SMI trust fund on December 31, 1981. These amounts are excluded from the premium Income and general revenue Income for CY 1982.

## **ACTUARIAL STATUS OF THE TRUST FUND**

### **1. Actuarial Soundness of the Supplementary Medical Insurance Program**

The concept of actuarial soundness, as it applies to the supplementary medical insurance program, is closely related to the concept as it applies to private group insurance. The supplementary medical insurance program essentially is yearly renewable term insurance financed from premium income paid by the enrollees and from income contributed from general revenue in proportion to premium payments. The law requires the Secretary of Health and Human Services to establish income on the basis of incurred costs; that is, the income to the program during a 12-month period for which financing is being established must be sufficient to pay for services (including associated administrative costs) expected to be rendered during that period, even though payment for some of these services will not be made until after the close of the period. The portion of income required to cover those benefits not paid until after the close of the year is added to the trust fund until needed. Thus, the amount of assets in the trust fund at any time should be no less than the costs of the benefits and administration incurred but not yet paid. Since the income per enrollee (premium plus Government contribution rate) is established prospectively, it is subject to projection error. As a result, the income to the program may not be equal to incurred costs; therefore, trust fund assets should be maintained at a level which is adequate to cover the impact of a moderate degree of projection error, as well as the value of incurred but unpaid expenses.

In testing the actuarial soundness of the supplementary medical insurance program, it is not appropriate to look beyond the period for which the enrollee premium rate and level of general revenue financing have been established. The primary tests of actuarial soundness, then, are that: (1) assets for years for which financing has been established be sufficient to meet the projected benefits and associated administrative expenses incurred for that period and (2) assets be sufficient to cover projected liabilities that will have been incurred by the end of that time but will not have been paid yet. Even if these tests of actuarial soundness are not met, the program can 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 cost increases under the program will be higher than assumed, assets should be sufficient to cover the impact of a moderate degree of projection error.

### **2. INCURRED EXPERIENCE OF THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM**

The tests of actuarial soundness of the supplementary medical insurance program noted above rely on the incurred experience of the

program. Cash disbursements for benefits and administrative expenses by themselves are misleading, due to the relatively large liabilities outstanding at any time for benefits and processing costs. Outstanding liabilities result from the lag between the time that services are performed and the time that payments for them are made.

The experience of the program 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. For recent time periods, the tabulations of bills are incomplete due to normal processing delays. Finally, since bills are tabulated only for a sample of beneficiaries, the data is subject to bias and random fluctuation inherent in the sampling process.

Table 7 shows the estimated transactions of the trust fund on an incurred basis. For the reasons stated above, the incurred experience must be viewed as an estimate even for historical years. Various checks, such as cash outlay data, assure that the estimates are reasonably close, however.

**TABLE 7.—ESTIMATED INCOME AND DISBURSEMENTS INCURRED UNDER  
SUPPLEMENTARY MEDICAL INSURANCE PROGRAM FOR FINANCING PERIODS  
THROUGH DECEMBER 31, 1986**

(In millions)

Financing period	Premiums from participants	Government Contri- butions	Interest and other Income	Benefit payments	Adminis- trative expenses	Net operations in year
Historical Data:						
12-Month period ending June 30,						
1967	\$647	\$647	\$15	\$1,108	\$123 <sup>1</sup>	\$78
1968	698	698	21	1,443	155	-181
1969	903	903	24	1,766	198	-134
1970	936	936	12	1,930	213	-259
1971	1,253	1,253	18	2,090	259	175
1972	1,340	1,340	29	2,289	259	161
1973	1,427	1,426	45	2,499	302	97
1974	1,704	2,031	76	3,148	353	310
1975	1,887	2,396	105	3,929	438	21
1976	1,951	2,972	109	4,817	485	-270
1977	2,156	4,697	157	5,861	515	634
1978	2,358	5,991	254	6,947	511	1,145
1979	2,601	6,570	365	8,168	649	719
1980	2,823	6,627	421	9,883	645	-657
1981	3,178	8,219	371	11,970	692	-894
1982	3,737	12,488	495	13,948	728	2,044
1983	4,202	13,951	686	16,855	708	1,276
Transition Semester <sup>2</sup>	2,121	7,838	371	9,676	483	171
Calendar year						
1984	5,167	17,052	962	20,320	873	1,988
1985	5,613	18,243	1,248	23,431	907	766
Projected:						
Calendar year						
Alternative A:						
1986	5,689	17,702	916	27,545	954	-4,192
Alternative B:						
1986	5,689	17,702	917	27,541	951	-4,184

<sup>1</sup>Includes administrative expenses incurred prior to the beginning of the program.

<sup>2</sup>The transition semester is the 6-month period July 1, 1983 to December 31, 1983.

### 3. ACCUMULATED EXCESS OF ASSETS OVER LIABILITIES

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 8. For some years of the program, assets have not been as large as outstanding liabilities. Nonetheless, the fund has remained positive, allowing claims to be paid.

Program financing has been established through December 31, 1986. The financing established for calendar year 1986 was designed to reduce the excess of assets over liabilities to a more appropriate level. As a result, the excess of assets over liabilities is expected to decrease from \$7,196 million at the end of December 1985 to \$2,993 million under alternative A and to \$2,998 million under alternative B at the end of

December 1986. This excess as a percent of incurred expenditures for the following year is expected to decrease from 25.3% as of December 31, 1985, to 9.396 as of December 31, 1986.

**TABLE 8.—SUMMARY OF ESTIMATED ASSETS AND LIABILITIES OF THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM AS OF THE END OF THE FINANCING PERIOD, FOR PERIODS THROUGH DECEMBER 31, 1986**

(Dollar amounts in millions)

	Balance in trust fund	Government contributions due but unpaid	Total assets	Benefits incurred but unpaid	Administrative cost incurred but unpaid	Total liab- ilities	Excess of assets over liabilities	Ratio <sup>1</sup>
Historical Data								
As of June 30,								
1967	\$486	\$24	\$510	\$444	\$-12	\$432	\$78	0.05
1968	307	88	395	497	1	498	-103	-0.05
1969	378	7	385	618	4	622	-237	-0.11
1970	57	15	72	569	0	569	-497	-0.21
1971	290	22	312	624	11	635	-323	-0.13
1972	481	-3	478	658	-19	639	-161	-0.06
1973	746	-7	739	766	37	803	-64	-0.02
1974	1,272	-5	1,267	1,040	-19	1,021	246	0.06
1975	1,424	67	1,491	1,204	14	1,218	273	0.05
1976	1,219	106	1,325	1,349	-29	1,320	5	0.00
1977	2,170	91	2,261	1,621	3	1,624	637	0.09
1978	3,786	48	3,834	2,011	40	2,051	1,783	0.20
1979	4,880	2	4,882	2,259	123	2,382	2,500	0.24
1980	4,657	0	4,657	2,626	188	2,814	1,843	0.15
1981	3,801	0	3,801	2,838	13	2,851	950	0.07
1982	5,534	1	5,535	2,550	-9	2,541	2,994	0.17
1983	6,780	2	6,782	2,560	-48	2,512	4,270	0.21
As of December 31,								
1983	7,070	1	7,071	2,698	-69	2,629	4,442	0.21
1984	9,698	2	9,700	3,357	-87	3,270	6,430	0.26
1985	10,924	0	10,924	3,841	-113	3,728	7,196	0.25
Projected:								
Alternative A:								
1986	7,701	0	7,701	4,821	-113	4,708	2,993	0.09
Alternative B:								
1986	7,705	0	7,705	4,820	-113	4,707	2,998	0.09

<sup>1</sup>Ratio of the excess assets over liabilities to the following year's total incurred expenditures.

#### 4. SENSITIVITY TESTING

Some of the assumptions underlying the projections presented in this report are highly uncertain, and variations in these assumptions would have a substantial Impact on expenditures. In order to test the future status of the program under varying assumptions, a low cost projection and a high cost projection were prepared by varying these key assumptions. The low and high cost alternative sets of assumptions are intended to reflect growth rates for the various components of program costs which are more favorable and adverse, respectively, than those of the intermediate projections (alternatives A and B) and which are not unreasonable themselves in light of the nature and historical experience of the program. As such, they provide a range of financial outcomes within which the actual experience of the program might reasonably be expected to fall. The values for the alternative assumptions were

determined from a study on the average historical error in the respective increase factors.

Table 9 indicates that, under the low cost assumptions, trust fund assets would exceed liabilities by the end of December 1986 (the period through which financing has been established), reaching a level of 21 percent of the following year's incurred expenditures. If these low growth rates were actually to materialize, then subsequent financing rates would be adjusted downward in order to lower the excess of assets over liabilities to more appropriate levels. Under the high cost assumptions, trust fund liabilities would exceed assets by the end of December 1986, reaching a level of 1 percent of the following year's incurred expenditures. If these high growth rates were to occur, the subsequent financing rates would have to be adjusted upward in order to generate more appropriate levels for the excess of assets over liabilities.

**Table 9.—ACTUARIAL STATUS OF THE SMI TRUST FUND UNDER THREE SETS OF ASSUMPTIONS FOR FINANCING PERIODS THROUGH DECEMBER 31, 1986**

	Alternative B projection			Low cost projection			High cost projection		
	Physicians' Fee Screen Year <sup>1</sup>			Physicians' Fee Screen Year			Physicians' Fee Screen Year		
	1985	1986	1987	1985	1986	1987	1985	1986	1987
Projection factors (in percent): <sup>2</sup>									
Physician fees <sup>3</sup>									
Aged	1.0	3.2	7.0	0.6	2.6	6.5	1.6	3.7	7.5
Disabled	1.0	3.2	7.0	0.6	2.6	6.5	1.6	3.7	7.5
Utilization of physician services <sup>4</sup>									
Aged	5.1	7.7	3.4	3.5	5.9	1.7	6.6	9.6	5.1
Disabled	6.5	8.8	4.3	3.3	4.5	0.6	9.8	13.0	8.1
Outpatient hospital services per enrollee									
Aged	18.3	34.8	14.2	12.5	27.1	6.8	24.2	42.5	21.3
Disabled	17.6	34.8	14.3	10.2	23.7	3.0	25.1	46.1	24.8
	As of December 31,			As of December 31,			As of December 31,		
	1984	1985	1986	1984	1985	1986	1984	1985	1986
Actuarial status (in millions):									
Assets	\$9,700	\$10,924	\$7,705	\$9,700	\$10,924	\$9,541	\$9,700	\$10,924	\$5,738
Liabilities	3,270	3,728	4,707	3,021	2,594	3,388	3,520	4,890	6,074
Assets less liabilities	\$6,430	\$7,196	\$2,998	\$6,679	\$8,330	\$6,153	\$6,180	\$6,034	-\$336
Ratio of assets less liabilities to expenditures (in percent) <sup>5</sup>	26.4	25.3	9.3	28.5	31.4	20.8	24.5	19.7	-1.0

<sup>1</sup>The physicians' fee screen year is the 12-month period ending September 30.

<sup>2</sup>Because of the manner in which alternative economic assumptions affect the projected operations of the supplementary medical insurance program, there is not a substantial difference in the projections based upon the two sets of assumptions. Therefore only one projection, alternative B, is presented here. Appendix A presents an explanation of the effects of alternative A and B on the projections in the report

<sup>3</sup>As recognized for payment under the program.

<sup>4</sup>Increase in the number of services received per enrollee and greater relative use of more expensive services.

<sup>5</sup>Ratio of assets less liabilities at the end of the year to the total incurred expenditures during the following year, expressed as a percent.

## CONCLUSION

The financing of the supplementary medical insurance program has been established through December 1986, by the setting of standard monthly premium rates (paid by or on behalf of each enrollee) of \$15.50 for calendar year 1986 and of actuarial rates that determine the amount to be contributed from general revenue on behalf of each enrollee. General revenue contributions are expected to account for 72.8 percent of all SMI income during calendar year 1986.

Under both sets of intermediate assumptions used in this report, disbursements are projected to exceed income during fiscal year 1986 and fiscal year 1987. Income is composed of premiums paid by the participants, general revenue contributions and interest earned by the trust fund. As a result, the assets in the trust fund on a cash basis are projected to decrease from \$10.6 billion at the end of fiscal year 1985 to an estimated \$8.7 billion at the end of fiscal year 1986 and then to decrease to an estimated \$6.1 billion at the end of fiscal year 1987.

Program assets exceeded liabilities by approximately \$7,196 million at the end of December 1985 representing 25.3 percent of the projected incurred expenditures for the following 12-month period. The financing for calendar year 1986 was established to reduce assets to a more appropriate level. Assets are projected to exceed liabilities at the end of December 1986 by \$2,993 million under alternative A, and by \$2,998 million under alternative B, representing 9.3 percent of the projected incurred expenditures. Under more pessimistic assumptions as to cost increases, assets based on financing already established will be insufficient to cover outstanding liabilities. However, the trust fund should remain positive allowing claims to be paid. Hence, the financing established through December 1986 is sufficient to cover projected benefit and administrative costs incurred through that time period, and to maintain a level of trust fund assets adequate to cover the impact of a moderate degree of projection error.

Although the supplementary medical insurance program is financially sound, the Board notes with concern the rapid growth in the cost of the program. The Board recommends that Congress continue to work to curtail the rapid growth in the supplementary medical Insurance program.



## APPENDIX A

### ACTUARIAL METHODOLOGY AND PRINCIPAL ASSUMPTIONS FOR COST ESTIMATES FOR THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM

#### 1. Estimates for Aged and Disabled (Excluding ESRD) Enrollees

##### a. Introduction

Estimates for aged and disabled enrollees—excluding disabled persons with end stage renal disease (ESRD)—are prepared by establishing, as accurately as possible, reasonable charges incurred per enrollee in a recent year (the 12-month period ending June 30, 1984, for this report) and, projecting these charges through the estimating 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 disbursements, an allowance is made for the delay between receipt of service and payment therefor.

Disabled persons with ESRD have per enrollee costs which are higher and quite different in nature from those of most other disabled persons. Hence, program costs for them have been excluded from the analysis in this section and are included in a later section.

##### b. Establishing a Projection Base

###### *(1) Physician Services*

Reimbursement amounts for physician services (and relatively small amounts for other services) are paid through organizations acting for the Health Care Financing Administration, referred to as carriers. The carriers determine whether billed services are covered under the program and determine the reasonable charges for the services. A record of the amount reimbursed after reduction for coinsurance and the deductible is transmitted to the central office in the form of a “payment record.”

Payment records for 0.1 percent of aged beneficiaries and 1.0 percent of disabled beneficiaries are tabulated by date of service, thus providing a data base which is constructed on an incurred basis. Certain minor adjustments are made to the tabulated sample data to correct for biases and random fluctuation inherent in the sampling process. Having the data on an incurred basis is necessary to meet the statutory requirement that the program be financed on this 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. In a program with continuously increasing incurred reimbursement amounts, cash payments are expected to be slightly lower than incurred expenses (except in the first year of coverage of a service or group of beneficiaries, when the difference should be substantial). These differences between cash and incurred reimbursement amounts occur because of the lag between receipt of services and payment therefor.

## ***(2) Institutional and Other Services***

Reimbursement amounts for institutional services under the supplementary medical insurance program are paid by the same fiscal intermediaries that pay for hospital insurance services. The principal institutional services covered under the supplementary medical insurance program are outpatient hospital care services.

Reimbursements for institutional services occur in two stages. Provider bills are submitted to the intermediaries, and interim payments are made on the basis of these bills. The bills are then submitted to the central office, and tabulations for a sample of beneficiaries are prepared in a manner parallel to that for payment records.

At the close of a provider's accounting period, a cost report is submitted and lump-sum payments or recoveries are made to correct for the difference between interim payments made to the provider and the retroactively determined reasonable cost for providing covered services (net of coinsurance and deductible amounts). The amounts of these retroactive settlements are reported on a cash basis, and approximations are necessary to allocate these payments to the time of service.

Group practice plans, which are not reimbursed through carriers, are reimbursed directly by the Health Care Financing Administration on a reasonable cost or on a capitation basis. Comprehensive data on such direct reimbursements are available on a cash basis. Certain approximations must be made to allocate expenses to the period when services were rendered.

## ***(3) Summary of Historical Data***

Table A1 summarizes the Incurred reimbursement amounts per enrollee for the various services for each of the 12-month periods ending June 30, through 1984. Also shown are average enrollment figures for these years. In order to analyze the historical trend in prices and use of services, these reimbursement amounts are converted to the reasonable charges or reasonable costs on which reimbursement was based. This

process is necessary largely because the fixed deductible becomes a smaller percentage of charges each year and thus causes reimbursement to rise faster than charges or costs. Table A2 shows the reasonable charges or costs per enrollee corresponding to the reimbursement values shown in table A1.

**TABLE A1.—INCURRED REIMBURSEMENT AMOUNTS PER ENROLLEE:  
HISTORICAL**

Year ending June 30,	Average enrollment (millions)	All services	Physician	Inpatient radiology and pathology <sup>1</sup>	Outpatient hospital	Home health Agency	Group practice prepayment plan	Independent lab
Aged:								
1967	17.750	\$62.42	\$59.03		\$1.41	\$0.79	\$0.89	\$0.30
1968	18.038	80.04	72.56	\$1.89	2.40	1.49	1.35	0.35
1969	18.833	93.71	79.06	6.57	4.23	1.92	1.54	0.40
1970	19.312	99.90	82.84	7.14	5.93	2.00	1.51	0.48
1971	19.664	106.26	87.80	7.21	7.56	1.68	1.40	0.61
1972	20.043	114.22	94.82	6.77	8.58	1.61	1.66	0.78
1973	20.428	122.37	100.94	6.99	9.45	2.17	1.88	0.94
1974	20.988	134.39	109.97	7.46	11.36	2.03	2.36	1.21
1975	21.504	160.26	127.48	8.75	15.48	3.84	3.07	1.64
1976	22.089	188.61	145.29	10.91	21.30	5.21	3.87	2.03
1977	22.605	221.39	167.01	12.23	28.72	6.54	4.42	2.47
1978	23.133	254.18	192.23	14.77	33.42	6.82	4.02	2.92
1979	23.693	289.47	217.51	16.36	40.55	6.87	4.87	3.31
1980	24.287	340.75	256.25	18.74	47.09	7.59	7.05	4.03
1981	24.826	404.02	301.85	22.95	56.72	8.04	9.12	5.34
1982	25.363	461.51	354.21	24.18	65.24	0.50	10.98	6.40
1983	25.873	551.03	427.84	22.38	79.35	0.77	13.42	7.27
1984	26.433	626.22	482.95	17.53	99.17	0.99	16.70	8.88
Disabled (excluding ESRD):								
1974	1.638	116.68	89.92	7.54	13.91	3.46	1.09	0.76
1975	1.816	149.50	117.03	8.44	17.34	3.58	1.86	1.25
1976	2.018	178.87	138.01	10.07	21.72	5.13	2.20	1.74
1977	2.231	220.44	161.39	13.06	36.46	4.79	2.41	2.33
1978	2.423	256.26	188.34	14.20	42.79	5.54	2.47	2.92
1979	2.563	301.58	223.27	17.10	50.52	5.13	2.05	3.51
1980	2.641	363.50	268.34	19.80	60.75	6.08	4.35	4.18
1981	2.687	434.91	316.91	23.17	77.17	7.22	5.29	5.15
1982	2.685	516.26	371.13	24.42	107.88	0.00	6.35	6.48
1983	2.628	629.45	460.02	23.64	130.07	0.00	7.60	8.12
1984	2.593	685.70	519.93	18.95	128.38	0.00	8.60	9.84

<sup>1</sup>Includes services on payment records and those using combined billing; amounts shown are for April 1968 and later when combined billings were authorized. Inpatient radiology and pathology charges were reimbursed at 100 percent through September 30, 1982.

**TABLE A2.—INCURRED REASONABLE CHARGES OR COSTS PER ENROLLEE:  
HISTORICAL**

Year ending June 30,	Average enrollment (millions)	All services	Physician	Inpatient radiology and pathology <sup>1</sup>	Outpatient hospital	Home health Agency	Group practice prepayment plan	Independent lab
Aged:								
1967	\$17.75	\$108.49	\$102.61		\$2.45	\$1.37	\$1.54	\$0.52
1966	18.038	128.18	117.25	\$1.89	3.88	2.41	2.18	0.57
1969	18.833	145.53	126.06	6.57	6.74	3.06	2.46	0.64
1970	19.312	154.02	131.18	7.14	9.39	3.16	2.39	0.76
1971	19.664	162.51	137.67	7.21	11.85	2.63	2.20	0.95
1972	20.043	173.14	146.82	6.77	13.28	2.49	2.57	1.21
1973	20.428	186.61	157.47	6.99	14.74	3.01	2.93	1.47
1974	20.988	204.66	171.41	7.46	17.70	2.53	3.68	1.88
1975	21.504	237.11	193.12	8.75	23.45	4.65	4.65	2.49
1976	22.089	272.61	215.25	10.91	31.55	6.17	5.73	3.00
1977	22.605	313.97	242.45	12.23	41.69	7.59	6.42	3.59
1978	23.133	355.04	274.77	14.77	47.77	7.80	5.75	4.18
1979	23.693	399.63	306.79	16.36	57.19	7.75	6.87	4.67
1980	24.287	464.08	356.07	18.74	65.44	8.44	9.79	5.60
1981	24.826	542.39	413.20	22.95	77.65	8.80	12.49	7.31
1982	25.363	626.20	486.20	26.10	89.55	0.50	15.07	8.78
1983	25.873	746.24	582.39	26.91	108.01	0.77	18.27	9.89
1984	26.433	842.13	649.72	23.59	133.42	0.99	22.47	11.94
Disabled (excluding ESRD):								
1974	1.638	171.12	135.64	7.54	20.99	4.17	1.64	1.14
1975	1.816	212.55	170.19	8.44	25.22	4.17	2.71	1.82
1976	2.018	250.88	198.08	10.07	31.18	5.89	3.16	2.50
1977	2.231	303.92	227.40	13.06	51.38	5.40	3.40	3.28
1978	2.423	350.39	262.78	14.20	59.70	6.18	3.45	4.08
1979	2.563	407.60	307.59	17.10	69.60	5.65	2.83	4.83
1980	2.641	485.54	364.91	19.80	82.61	6.62	5.92	5.68
1981	2.687	574.77	426.06	23.17	103.75	7.76	7.11	6.92
1982	2.685	688.17	499.39	26.36	145.16	0.00	8.54	8.72
1983	2.618	837.63	614.46	28.43	173.74	0.00	10.15	10.85
1984	2.593	910.46	690.36	25.16	170.46	0.00	11.42	13.06

<sup>1</sup>Includes services on payment records and those using combined billing; amounts shown are for April 1968 and later when combined billings were authorized. Inpatient radiology and pathology charges were reimbursed at 100 percent through September 30, 1982.

### c. Per Enrollee Increases

#### (1) *Physician Services*

Per enrollee charges for physician services are affected by a variety of factors. One factor, increase in average charge per service, can be identified explicitly. Others can be recognized only by the fact that the explicitly quantifiable factor does not explain all of the Increase In per enrollee charges year-to-year.

Increases in average charge per service are one of the most important elements creating increasing charges per enrollee. The physician fee component of the consumer price index provides an estimate of the historical increases In average charge per service. Increases In this index are shown in the first column of table A3

**TABLE A3.—COMPONENTS OF INCREASES IN TOTAL RECOGNIZED CHARGES PER ENROLLEE FOR PHYSICIAN SERVICES: HISTORICAL**

(in percent)

Year ending June 30,	Increase due to price changes				Increase Due to Residual Factors			
	Reduction due to fee screens			Net increase in reasonable charges	Gross residual factors	Effect of denials	Net residual factors	Total increase in recognized charges per enrollee
	Increase in physician fee component of CPI	Cumulative effect	Yearly changes					
Aged:								
1967	7.6	-2.6						
1968	5.9	-3.6	-0.6	5.3	10.4	-1.4	9.0	14.3
1969	6.2	-5.0	-1.4	4.8	3.1	-0.4	2.7	7.5
1970	6.7	-7.5	-2.8	3.9	3.3	-3.1	0.2	4.1
1971	7.5	-10.1	-3.0	4.5	3.7	-3.2	0.5	5.0
1972	5.2	-11.2	-1.2	4.0	2.2	0.4	2.6	6.6
1973	2.6	-11.7	-0.4	2.2	5.7	-0.6	5.1	7.3
1974	5.0	-13.2	-1.7	3.3	6.1	-0.6	5.5	8.8
1975	12.8	-16.2	-3.6	9.2	3.8	-0.3	3.5	12.7
1976	11.4	-18.6	-2.9	8.5	2.9	0.1	3.0	11.5
1977	10.2	-19.5	-1.0	9.2	3.3	0.1	3.4	12.6
1978	8.9	-19.4	0.5	9.4	3.8	0.1	3.9	13.3
1979	8.6	-20.0	-0.6	8.0	3.9	-0.3	3.6	11.6
1980	11.5	-22.1	-2.3	9.2	6.8	0.1	6.9	16.1
1981	11.1	-24.5	-2.8	8.3	7.0	0.7	7.7	16.0
1982	9.9	-23.9	1.5	11.4	5.8	0.5	6.3	17.7
1983	8.2	-23.4	1.6	9.8	10.1	-0.1	10.0	19.8
1984	7.5	-23.6	0.9	8.4	3.8	-0.6	3.2	11.6
Disabled (excluding ESRD):								
1974	5.0	-13.2						
1975	12.8	-16.2	-2.5	10.3	15.5	-0.3	15.2	25.5
1976	11.4	-18.6	-2.6	8.8	7.5	0.1	7.6	16.4
1977	10.2	-19.5	-0.7	9.5	5.2	0.1	5.3	14.8
1978	8.9	-19.4	0.7	9.6	5.9	0.1	6.0	15.6
1979	8.6	-20.0	-0.2	8.4	8.9	-0.3	8.6	17.0
1980	11.5	-22.1	-2.2	9.3	9.2	0.1	9.3	18.6
1981	11.1	-24.5	-2.7	8.4	7.7	0.7	8.4	16.8
1982	9.9	-23.9	1.4	11.3	5.4	0.5	5.9	17.2
1983	8.2	-23.4	1.9	10.1	13.0	-0.1	12.9	23.0
1984	7.5	-23.6	1.2	8.7	4.3	-0.6	3.7	12.4

Bills submitted to the carriers during a specified 12-month period, the fee screen year, are subject by statute to certain limitations on the level of fees to be recognized by the program for reimbursement purposes. Prior to the passage of Public Law 98-369, the fee screen year was the 12-month period ending July 30. Public Law 98-369 changed the fee screen year to the 12-month period ending September 30, effective on October 1, 1985. The fee level recognized for a particular service by a physician is subject to reduction if it exceeds the median charge that the physician assessed for the same service in the base period. Public Law 98-369 changed the base period from the preceding calendar year to the preceding 12-month period ending March 31. This median charge is called the "customary" charge. Fees are subject to further reduction if they exceed the "prevailing" charges for the locality. The prevailing charge is defined as the 75th percentile of customary charges for a particular service in a particular locality. Since July 1, 1975, the rate or

increase in prevailing charges has been limited further by the application of an "economic Index." The customary and prevailing charge limits maintained by the carriers are called "fee screens." Reasonable charges are charges on which reimbursement is based, after they have been reduced by the fee screens.

The average reduction in submitted fees has increased almost every year due both to administrative actions and to differentials in the rate of increase in fees between the period in which the fee screens are established and the period in which the screens are applied. The result is that the net increase in per enrollee charges due to price changes (i.e., the increase in fee levels recognized for reimbursement purposes) has been less than the increase in submitted fees. The second Column of table A3 shows the reduction of charges due to the impact of the fee screen operation to date. The year-to-year changes in this impact are shown in the third column.

Charges also have increased each year as a result of more physician visits per enrollee, greater use of specialists and more expensive techniques, and other factors. The fifth column of table A3 shows the increase in charges per enrollee resulting from these residual causes. Because the measurement of increased recognized charges per service is subject to error, this error is included implicitly under residual causes.

The proportion of charges that has been denied as non-covered care has increased in most years. To the extent that this increase in denials reflects the effect of administrative actions defining covered services, it will cause a non-recurring distorting effect on the increase due to net residual factors. The gross residual factor is adjusted for the impact of changes in denials as shown in the sixth column of table A3. The seventh column shows the net increases due to residual factors. That column is used in the projection to indicate the amount of cost increases to be expected in the future from residual causes.

The last column of table A3 shows the total increase in charges per enrollee for physician services. It includes the effect of all the items discussed above.

Projected increases in total recognized charges per enrollee are shown in table A4. Column 1 of table A4 shows the projected average increase in customary charges in each of the fee screen years ending September 30, 1985 through September 30, 1989. As described above, each of these increases depends on the increases in fees actually submitted during the base period. Thus, this column represents actual and projected average increases in physicians' fees for year ending March 31, 1984 through year ending March 31, 1988, respectively. In principle, further adjustments should be made for the fact that, of necessity, some fees are not screened in exactly the manner described (e.g., when new categories of services arise for which there is no historical data base). The impact

on year- to-year Increases in reasonable charges of this factor is treated as negligible. The effects of the economic index on the average charge increase is shown in column 2. The projected net increase in reasonable charges is shown in column 3; this compares with the corresponding historical data shown in column 4 of table A3.

The projection of residual factors assumes no further changes in the proportion of claims denied consistent with the very small changes observed In the last few years (see table A3).

**TABLE A4.—COMPONENTS OF INCREASES IN TOTAL RECONGNIZED CHARGES PER ENROLLEE FOR PHYSICIAN SERVICES: PROJECTED**

(in percent)

Physician fee screen year <sup>1</sup>	Increase before effect of economic index	Reduction due to economic index	Net increase in reasonable charges	Gross residual factors	Effects of denials	Net residual factors	Total increase in recognized charges per enrollee
Alternative A:							
Aged:							
1985	7.7	-6.7	1.0	5.2	0.0	5.2	6.2
1986	6.4	-3.2	3.2	7.9	0.0	7.9	11.1
1987	6.3	0.7	7.0	3.6	0.0	3.6	10.6
1988	5.6	-1.3	4.3	3.4	0.0	3.4	7.7
1989	5.9	-1.5	4.4	3.4	0.0	3.4	7.8
Disabled (excluding ESRD):							
1985	7.7	-6.7	1.0	6.6	0.0	6.6	7.6
1986	6.4	-3.2	3.2	9.1	0.0	9.1	12.3
1987	6.3	0.7	7.0	4.6	0.0	4.6	11.6
1988	5.6	-1.3	4.3	4.4	0.0	4.4	8.7
1989	5.9	-1.5	4.4	4.4	0.0	4.4	8.8
Alternative B:							
Aged:							
1985	7.7	-6.7	1.0	5.2	0.0	5.2	6.2
1986	6.4	-3.2	3.2	7.9	0.0	7.9	11.1
1987	6.4	0.6	7.0	3.6	0.0	3.6	10.6
1988	6.0	-1.5	4.5	3.4	0.0	3.4	7.9
1989	6.2	-1.5	4.7	3.5	0.0	3.5	8.2
Disabled (excluding ESRD):							
1985	7.7	-6.7	1.0	6.6	0.0	6.6	7.6
1986	6.4	-3.2	3.2	9.1	0.0	9.1	12.3
1987	6.4	0.6	7.0	4.6	0.0	4.6	11.6
1988	6.0	-1.5	4.5	4.4	0.0	4.4	8.9
1989	6.2	-1.5	4.7	4.4	0.0	4.4	9.1

<sup>1</sup>Physician fee screen year is the 12-month period ending September 30.

## **(2) Institutional and Other Services**

The historical and projected increases in charges or costs per enrollee for institutional and other services are shown in table A5. The year-to-year changes in some services have been quite erratic. Because these series provide only a rough indication of future trends in costs, identical series of increase factors are used for alternative A and alternative B.

**TABLE A5.—INCREASES IN RECOGNIZED CHARGES AND COSTS PER ENROLLEE FOR INSTITUTIONAL AND OTHER SERVICES**

(In percent)

Physician fee screen year <sup>1</sup>	Inpatient radiology and pathology	Outpatient hospital	Home health agency	Group practice Prepayment plan	Independent lab
Aged:					
Historical:					
1968		58.4	75.9	41.6	9.6
1969	-13.1 <sup>2</sup>	73.7	27.0	12.8	12.3
1970	8.7	39.3	3.3	-2.8	18.7
1971	1.0	26.2	-16.8	-7.9	25.0
1972	-6.1	12.1	-5.3	16.8	27.4
1973	3.2	11.0	20.9	14.0	21.5
1974	6.7	20.1	-15.9	25.6	27.9
1975	17.3	32.5	83.8	26.4	32.4
1976	24.7	34.5	32.7	25.2	20.5
1977	12.1	32.1	23.0	12.0	19.7
1978	20.8	14.6	2.8	-10.4	14.4
1979	10.8	19.7	-0.6	19.3	11.7
1980	14.3	14.4	8.9	42.3	19.9
1981	22.5	18.6	4.3	27.6	30.5
1982	13.7	13.3	-94.3	20.7	20.1
1983	3.1	20.6	54.0	21.2	12.4
1984	-12.3	23.3	28.6	23.0	20.7
Projected:					
1985	3.4	18.3	9.9	16.5	64.6
1986	10.1	34.8	9.9	19.5	7.7
1987	10.1	14.2	9.8	19.9	7.5
1988	10.7	14.1	11.2	19.1	8.8
1989	10.2	15.0	9.4	15.0	7.9
Disabled (excluding ESRD):					
Historical:					
1975	11.9	20.2	0.0	63.2	59.6
1976	19.3	23.6	41.2	16.6	37.4
1977	29.7	64.8	-8.3	7.6	31.2
1978	8.7	16.2	14.4	1.5	24.4
1979	20.4	16.6	-8.6	-18.0	18.4
1980	15.8	18.7	17.2	109.2	17.6
1981	17.0	25.6	17.2	20.1	21.8
1982	13.8	39.9	-100.0	20.1	26.0
1983	7.9	19.7	0.0	18.9	24.4
1984	-11.5	-1.9	0.0	12.5	20.4
Projected:					
1985	3.8	17.6	0.0	17.9	61.8
1986	10.4	34.8	0.0	17.9	8.3
1987	10.7	14.3	0.0	20.8	9.0
1988	11.8	14.2	0.0	19.4	8.3
1989	9.9	13.1	0.0	13.4	7.3

<sup>1</sup>Through June 30, 1984, the physician fee screen year is the 12-month period ending on June 30. Thereafter, the physician fee screen year is the 12-month period ending September 30.

<sup>2</sup>Percentage change over prior year annualized value.

#### **d. Projected Charges and Costs**

Table A6 shows projections of per enrollee incurred charges and costs based on the assumptions in tables A4 and A5. Table A7 shows the total reimbursement amounts per enrollee that result from subtracting the average amounts of copayment per enrollee from the total covered charges in table A6. The aggregate reimbursement



amounts shown are derived by multiplying average enrollment by average reimbursement per enrollee.

**TABLE A6.—INCURRED REASONABLE CHARGES OR COSTS PER ENROLLEE:  
PROJECTED**

(In percent)

Physician fee screen year <sup>1</sup>	All Services	Physician	Inpatient radiology and pathology	Outpatient hospital	Home health agency	Group practice Prepayment plan	Independent lab
Alternative A:							
Aged:							
1986	936.61	697.75	24.45	161.39	1.11	27.19	24.72
1987	1,080.38	775.62	26.92	217.50	1.22	32.50	26.62
1988	1,205.13	858.11	29.63	248.48	1.34	38.96	28.61
1989	1,320.30	924.98	32.80	283.50	1.49	46.41	31.12
1990	1,448.61	997.84	36.16	326.02	1.63	53.38	33.58
Disabled (excluding ESRD):							
1986	1,025.44	754.44	26.21	204.43	0.00	14.08	26.28
1987	1,196.38	846.83	28.93	275.56	0.00	16.60	28.46
1988	1,343.46	945.39	32.03	314.96	0.00	20.06	31.02
1989	1,481.28	1,028.38	35.80	359.55	0.00	23.95	33.60
1990	1,635.45	1,118.58	39.34	413.84	0.00	27.63	36.06
Alternative B:							
Aged:							
1986	936.61	697.75	24.45	161.39	1.11	27.19	24.72
1987	1,080.31	775.55	26.92	217.50	1.22	32.50	26.62
1988	1,205.10	858.08	29.63	248.48	1.34	38.96	28.61
1989	1,321.60	926.28	32.80	283.50	1.49	46.41	31.12
1990	1,452.96	1,002.19	36.16	326.02	1.63	53.38	33.58
Disabled (excluding ESRD):							
1986	1,025.44	754.44	26.21	204.43	0.00	14.08	26.28
1987	1,196.30	846.75	28.93	275.56	0.00	16.60	28.46
1988	1,343.43	945.36	32.03	314.96	0.00	20.06	31.02
1989	1,482.73	1,029.83	35.80	359.55	0.00	23.95	33.60
1990	1,640.34	1,123.47	39.34	413.84	0.00	27.63	36.06

<sup>1</sup>The physician fee screen year is the 12-month period ending September 30.

**TABLE A7.—INCURRED REIMBURSEMENT AMOUNTS: PROJECTED**

		Reimbursement amounts	
Physician fee screen year <sup>1</sup>	Average enrollment (millions)	Per enrollee	Aggregate (millions)
Alternative A:			
Aged:			
1985	27.076	707.01	19,143
1986	27.720	822.11	22,789
1987	28.328	922.13	26,122
1988	28.886	1,014.75	29,312
1989	29.463	1,117.77	32,913
Disabled (excluding ESRD):			
1985	2.598	782.14	2,032
1986	2.623	919.18	2,411
1987	2.638	1,037.15	2,736
1988	2.650	1,148.30	3,043
1989	2.680	1,272.39	3,410
Alternative B:			
Aged:			
1985	27.076	707.01	19,143
1986	27.720	822.08	22,788
1987	28.328	922.09	26,121
1988	28.886	1,015.82	29,343
1989	29.463	1,121.30	33,037
Disabled (excluding ESRD):			
1985	2.598	782.14	2,032
1986	2.623	919.18	2,411
1987	2.638	1,036.77	2,735
1988	2.650	1,149.43	3,046
1989	2.680	1,276.49	3,421

<sup>1</sup>The physician fee screen year is the 12-month period ending September 30.

## 2. Estimates for Persons Suffering from ESRD

Certain persons suffering from end stage renal disease have been eligible to enroll for SMI coverage since July 1973 (under Section 2991 of Public Law 92-603). For analytical purposes, those enrollees suffering from 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.

The estimates assume that charges for SMI ESRD services under Medicare will increase at an average of 5.5 percent per year over the projection period (October 1, 1984 through September 30, 1989). The estimates also assume a continued increase in enrollment. The historical and projected enrollment and costs are shown in table A8.

**TABLE A8.—INCURRED REIMBURSEMENT FOR END-STAGE RENAL DISEASE**

Physician fee screen year <sup>1</sup>	Disabled ESRD and ESRD only			ESRD only
	Average enrollment (thousands)	Reimbursement amounts		Reimbursement amounts
		Per enrollee	Aggregate (millions)	Aggregate (millions)
1974	12	\$11,333	\$136	\$96
1975	18	11,778	212	144
1976	24	12,125	291	190
1977	29	12,621	366	229
1978	32	13,938	446	273
1979	38	14,158	538	322
1980	44	14,727	648	408
1981	49	15,735	771	471
1982	54	15,870	857	468
1983	59	16,000	944	492
1984	65	15,585	1,013	474
1985	73	16,301	1,190	528
1986	78	17,385	1,356	588
1987	84	18,536	1,557	663
1988	90	19,567	1,761	731
1989	96	20,948	2,011	806

<sup>1</sup>Through June 30, 1984, the physician fee screen year is the 12-month period ending on June 30. Thereafter, the physician fee screen year is the 12-month period ending September 30.

### 3. Summary of Aggregate Reimbursement Amounts on a Cash Basis

Table A9 shows aggregate historical and projected reimbursement amounts on a cash basis, by type of beneficiary. The difference between reimbursement amounts on a cash basis and incurred reimbursement amounts results from the lag between the time of service and the time of payment.

**TABLE A9.—AGGREGATE REIMBURSEMENT AMOUNTS ON A CASH BASIS**

(In millions)

Fiscal Year <sup>1</sup>	Aged	Disabled (excluding ESRD)	Disabled ESRD and ESRD only	Total
Historical:				
1967	\$664	—	—	\$664
1968	1,390	—	—	1,390
1969	1,645	—	—	1,645
1970	1,979	—	—	1,979
1971	2,035	—	—	2,035
1972	2,255	—	—	2,255
1973	2,391	—	—	2,391
1974	2,538	197	139	2,874
1975	3,296	261	208	3,765
1976	4,045	344	283	4,672
T.Q.	1,080	110	79	1,269
1977	5,016	494	357	5,867
1978	5,798	617	437	6,852
1979	6,943	784	532	8,259
1980	8,495	988	661	10,144
1981	10,370	1,189	786	12,345
1982	12,404	1,467	935	14,806
1983	14,783	1,702	1,002	17,487
1984	16,845	1,670	958	19,473
1985	19,074	1,732	1,002	21,808
Projected:				
Alternative A:				
1986	22,106	2,336	1,313	25,755
1987	25,058	2,627	1,525	29,210
1988	28,622	2,973	1,730	33,325
1989	32,292	3,344	1,974	37,610
Alternative B:				
1986	22,105	2,336	1,313	25,754
1987	25,057	2,626	1,525	29,208
1988	28,646	2,976	1,730	33,352
1989	32,380	3,353	1,974	37,707

<sup>1</sup>For 1967 through 1976, fiscal years cover the Interval from July 1 through June 30; the three month interval from July 1. 1976, through September 30.1976, is labeled "T.Q." the transition quarter; fiscal years 1977-1989 cover the interval from October 1 through September 30.

#### 4. Administrative Expenses

The ratio of administrative expenses to benefit payments has been approximately 5 percent in recent \_years and is projected to decline in future years. Projections of administrative costs are based on estimates of changes in average annual wages

## APPENDIX B.

### Statement of Actuarial Assumptions and Bases Employed in Determining the Monthly Actuarial Rates and the Standard Monthly Premium Rate for the Supplementary Medical Insurance Program Beginning January 1986 <sup>1</sup>

#### 1. Actuarial Status of the Supplementary Medical Insurance Trust Fund

The law requires that the SMI program be financed on an incurred basis; that is, program income during the calendar year for which the actuarial rates are effective must be sufficient to pay for services furnished during that year (including associated administrative costs) even though payment for some of these services will not be made until after the close of the year. The portion of income required to cover benefits not paid until after the close of the calendar year is added to the trust fund until needed. Thus, the assets in the trust fund at any time should be no less than benefit and administrative cost incurred but not yet paid.

Because the rates are established prospectively, they are subject to projection error. As a result, the income to the program may not equal incurred costs. Therefore, trust fund assets should be maintained at a level that is adequate to cover a moderate degree of projection error in addition to the amount of incurred but unpaid expenses. Table 1 summarizes the estimated actuarial status of the trust fund as of the end of the financing period for periods from 1984 through 1985.

**TABLE 1.—ESTIMATED ACTUARIAL STATUS OF THE SMI TRUST FUND AS OF THE  
END OF THE FINANCING PERIODS, JAN. 1, 1984 --DEC. 31, 1985**

(In millions of dollars)

Financing Period Ending	Assets	Liabilities	Assets less liabilities
December 31, 1984	\$9,698	\$3,090	\$6,608
December 31, 1985	11,436	3,586	7,850

#### 2. MONTHLY ACTUARIAL RATE FOR ENROLLEES AGE 65 AND OLDER

The monthly actuarial rate is one-half the monthly projected cost or benefits and administrative expenses for each enrollee age 65 and older, adjusted to allow for interest earnings on assets in the trust fund and a contingency margin. The contingency margin is an amount appropriate to provide for a moderate degree of projection error and to amortize unfunded liabilities.

---

<sup>1</sup> This statement appeared in the *Federal Register* of September 30, 1986. Projections shown in this statement differ from the projections shown in the rest of the report because of changes in assumptions since the rates were announced.

The monthly actuarial rate for enrollees age 65 and older for calendar year 1986 was determined by projecting per-enrollee cost for the 12-month periods ending June 30, 1986, and June 30, 1987, by type or service. Although the actuarial rates are now applicable for calendar years, projections of per-enrollee costs were determined on a July to June period, consistent with the July 1 annual fee screen update used for benefits prior to the passage of section 2306(b) or Pub. L. 98-369. The values for the 12-month period ending June 30, 1983, were established from program data. Subsequent periods were projected using a combination of program data and data from external sources. The projection factors used are shown in Table 2. These per-enrollee values are then adjusted to apply to a calendar year period. The projected values for financing periods from July 1, 1983, through December 31, 1986, are shown in Table 3.

**TABLE 2.—PROJECTION FACTORS<sup>1</sup>**  
**12-MONTH PERIODS ENDING JUNE 30 OF 1984-1987**

(In percent)

12-month period ending June 30,	Physicians' services		Radiology and pathology	Outpatient hospital services	Home health agency services <sup>4</sup>	Group practice prepayment plans	Independent lab services
	Fees <sup>2</sup>	Residual <sup>3</sup>					
Aged:							
1984	7.2	4.3	-12.3	20.8	28.2	28.6	12.8
1985	0.7	3.0	1.2	7.5	17.1	19.1	97.5
1986	5.1	3.6	9.6	14.8	9.7	19.8	9.6
1987	4.8	3.7	10.7	14.9	8.8	19.8	10.2
Disabled:							
1984	7.2	5.7	-11.6	-0.7	0.0	26.3	16.2
1985	0.7	4.3	1.6	11.3	0.0	27.5	114.9
1986	5.1	5.7	11.7	17.2	0.0	31.6	9.6
1987	4.8	5.7	8.9	15.1	0.0	30.4	9.4

<sup>1</sup>All values are per enrollee.

<sup>2</sup>As recognized for payment under the program.

<sup>3</sup>Increase in the number of services received per enrollee and greater relative use of more expensive services.

**TABLE 3.—DERIVATION OF MONTHLY ACTUARIAL RATE FOR ENROLLEES AGE 65 AND OVER FINANCING PERIODS ENDING DECEMBER 31, 1983 THROUGH DECEMBER 31, 1986**

	Financing Periods			
	July 1, 1983 through December 31, 1983	July 1, 1984 through December 31, 1984	January 1, 1985 through December 31, 1985	January 1, 1986 through December 31, 1986
Covered services (at level recognized):				
Physicians' reasonable charges	\$26.37	\$27.59	\$29.33	\$31.90
Radiology and pathology	1.02	0.99	1.04	1.15
Outpatient hospital and other institutions	5.18	5.61	6.25	7.18
Home health agencies	.04	.04	.05	.06
Group practice prepayment plans	.97	1.12	1.34	1.61
Independent lab	.45	.69	.96	1.06
Total services	34.02	36.05	38.98	42.95
Cost-sharing:				
Deductible	-2.5	-2.52	-2.53	-2.54
Coinsurance	-6.29	-6.61	-7.09	-7.86
Total benefits	25.24	26.93	29.36	32.55
Administrative expenses	1.19	1.19	1.28	1.31
Incurred expenditures	26.43	28.12	30.64	33.86
Value of Interest	-.65	-.65	-1.19	-1.21
Contingency margin for projection error and to amortize the surplus or deficit	1.22	1.73	1.55	-1.65
Monthly actuarial rate	\$27.00 <sup>1</sup>	\$29.20	\$31.00	\$31.00

<sup>1</sup>This rate, although originally promulgated for the 12-month period ending June 30, 1984, was modified by Pub.L.98-21 to apply only to the 6-month period ending December 31, 1983.

The projected monthly rate required to pay for one-half of the total of benefits and administrative costs for enrollees age 65 and over for calendar year 1986 is \$33.86. The monthly actuarial rate of a \$31.00 provides an adjustment for interest earnings and -\$1.65 for a contingency margin. Based on current estimates, it appears that the assets are more than sufficient to cover the amount of incurred but unpaid expenses and to provide for a moderate degree of projection error. Thus, a negative margin is needed to reduce assets to a more appropriate level.

### 3. MONTHLY ACTUARIAL RATE FOR DISABLED ENROLLEES

Disabled enrollees are those persons enrolled in SMI because of entitlement to disability benefits for not less than 24 months or because of entitlement to Medicare under the end-stage renal disease program. Projected monthly costs for disabled enrollees (other than those suffering from end-stage renal disease) are prepared in a fashion exactly parallel to projections for the aged, using appropriate actuarial assumptions (see Table 2). Costs for the end-stage renal disease program are projected differently because of the complex demographic problems involved. The combined results for all disabled enrollees are shown In Table 4.

**TABLE 4.—DERIVATION OF MONTHLY ACTUARIAL RATE FOR DISABLED ENROLLEES FINANCING PERIODS ENDING DECEMBER 31, 1983 THROUGH DECEMBER 31, 1986**

	Financing Periods			
	July 1, 1983 through December 31, 1983	July 1, 1984 through December 31, 1984	January 1, 1985 through December 31, 1985	January 1, 1986 through December 31, 1986
Covered services (at level recognized):				
Physicians' reasonable charges	\$33.88	\$35.92	\$38.79	\$42.77
Radiology and pathology	1.06	1.03	1.10	1.21
Outpatient hospital and other institutions	19.21	21.56	25.24	27.88
Home health agencies	0.00	0.00	0.00	0.00
Group practice prepayment plans	0.49	0.59	0.77	1.01
Independent lab	0.79	11.10	1.44	1.58
Total services	55.43	60.21	67.34	74.45
Cost-sharing:				
Deductible	-2.30	-2.34	-2.35	-2.36
Coinsurance	-10.63	-11.47	-12.79	-14.19
Total benefits	42.50	46.40	52.20	57.90
Administrative expenses	1.97	2.05	2.28	2.34
Incurred expenditures	44.47	48.45	54.48	60.24
Value of Interest	-3.61	-3.67	-5.62	-5.15
Contingency margin for projection error and to amortize the surplus or deficit	5.24	9.52	3.84	-14.29
Monthly actuarial rate	\$46.10	\$54.30	\$52.70	\$48.80

<sup>1</sup>This rate, although originally promulgated for the 12-month period ending June 30, 1984, was modified by Pub.L.98-21 to apply only to the 6-month period ending December 31, 1983.

The projected monthly rate required to pay for one-half of the total of benefits and administrative costs for disabled enrollees for calendar year 1986 is \$60.24. The monthly actuarial rate of \$40.80 provides an adjustment for interest earnings and -\$14.29 for a contingency margin. As in the determination of the monthly actuarial rate for disabled enrollees, a negative margin is needed to reduce the surplus to a more appropriate level.

#### 4. SENSITIVITY TESTING

Several factors contribute to uncertainty about future trends in medical care costs. In view of this, it seems appropriate to test the adequacy of the rates announced here using alternative assumptions. The most unpredictable factors that contribute significantly to future costs are outpatient hospital costs, physician residual (as defined in Table 2), and increases in physician fees as constrained by the program's reasonable charge screens and economic index. Two alternative sets of assumptions and the results of those assumptions are shown in Table 5. One set represents increases that are lower and is, therefore, more optimistic than the current estimate. The other set represents increases that are higher and is, therefore, more pessimistic than the current version. The values for the alternative assumptions were determined from a study on the average historical error in the respective increase factors. All assumptions not shown in Table 5 are the same as in Table 2.



**Table 5.—PROJECTION FACTORS AND THE ACTUARIAL STATUS OF THE SMI TRUST FUND UNDER ALTERNATIVE SETS OF ASSUMPTIONS FOR FINANCING PERIODS THROUGH DECEMBER 31, 1986**

	This projection			Low cost projection			High cost projection		
	12-Month period ending June 30,			12-Month period ending June 30,			12-Month period ending June 30,		
	1985	1986	1987	1985	1986	1987	1985	1986	1987
Projection factors (in percent): <sup>1</sup>									
Physician services - fees <sup>2</sup>									
Aged	0.7	5.1	4.8	0.2	4.6	4.1	1.2	5.6	5.5
Disabled	0.7	5.1	4.8	0.2	4.6	4.1	1.2	5.6	5.5
Physician services - Residual <sup>3</sup>									
Aged	3.0	3.6	3.7	1.5	1.9	1.4	4.5	5.3	6.0
Disabled	4.3	5.7	5.7	0.3	0.7	0.7	8.3	10.7	10.7
Outpatient hospital services									
Aged	7.5	14.8	14.9	2.5	7.8	4.9	12.5	21.8	24.9
Disabled	11.3	17.2	15.1	3.3	7.2	5.1	19.3	27.2	25.1
	As of December 31,			As of December 31,			As of December 31,		
	1984	1985	1986	1984	1985	1986	1984	1985	1986
Actuarial status (in millions):									
Assets	\$9,698	\$11,436	\$9,892	\$9,698	\$12,276	\$12,600	\$9,698	\$10,573	\$7,013
Liabilities	\$3,090	\$3,586	\$4,093	\$2,832	\$3,240	\$3,617	\$3,350	\$3,938	\$4,591
Assets less liabilities	\$6,608	\$7,850	\$5,799	\$6,866	\$9,036	\$8,983	\$6,348	\$6,635	\$2,422
Ratio of assets less liabilities to expenditures (In percent) <sup>4</sup>	28.1	29.5	19.4	30.4	36.5	32.8	26.0	23.2	7.4

<sup>1</sup>All values are per enrollee.

<sup>2</sup>As recognized for payment under the program.

<sup>3</sup>Increase in the number of services received per enrollee and greater relative use of more expensive services.

<sup>4</sup>Ratio of assets less liabilities at the end of the year to the total incurred expenditures during the following year, expressed as a percent.

Table 5 indicates that, under the assumptions used in preparing this report, the monthly actuarial rates will result in an excess of assets over liabilities of \$5,799 million by the end of December 1986. This amounts to 19.4 percent of the estimated total incurred expenditures for the following year. Assumptions which are somewhat more pessimistic (and, therefore, test the adequacy of the assets to accommodate projection errors), produce a surplus of \$2,422 million by the end of December 1986, which amounts to 7.4 percent of the estimated total incurred expenditures for the following year. Under fairly optimistic assumptions, the monthly actuarial rates will result in a surplus of \$8,983 by the end of December 1986, which amounts to 32.8 percent of the estimated total incurred expenditures for the following year.

## **5. PREMIUM RATE**

For calendar years 1984 through 1987, the law provides that the standard monthly premium rate for both aged and disabled enrollees shall be 50 percent of the monthly actuarial rate for enrollees age 65 and older. Therefore, the standard monthly premium rate for both aged and disabled enrollees for calendar year 1986 is \$15.50 which is 50 percent of the monthly actuarial rate for this period (\$31.00).

## **APPENDIX C.**

### **STATEMENT OF ACTUARIAL OPINION**

It is my opinion that (1) the methodology used herein is based upon sound principles of actuarial practice and (2) all the assumptions used and the resulting cost estimates are in the aggregate reasonable for the purpose of evaluating the actuarial and financial status of the Federal Supplementary Medical Insurance Trust Fund, taking into account the experience and expectations of the program.

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