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 maintain assets at a level 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 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, 1987
(In millions)

Financing period	Premiums from participants	Government contributions	Interest and other income	Benefit payments	Administrative expenses	Net operations in year
Historical:						
12-month period ending June 30,						
1967	$ 647	$ 647	$ 15	$1,109	$123 1/	$ 77
1968	698	698	21	1,443	155	-181
1969	903	903	24	1,766	198	-134
1970	936	936	12	1,929	213	-258
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	3,150	353	308
1975	1,887	2,396	105	3,930	438	20
1976	1,951	2,972	109	4,822	485	-275
1977	2,156	4,697	157	5,863	515	632
1978	2,358	5,991	254	6,950	511	1,142
1979	2,601	6,570	365	8,172	649	715
1980	2,823	6,627	421	9,941	645	-715
1981	3,178	8,219	371	12,057	692	-981
1982	3,737	12,488	495	13,997	728	1,995
1983	4,202	13,951	686	16,926	708	1,205
Transition semester 2/	2,120	7,836	374	9,700	483	147
Calendar year						
1984	5,167	17,052	962	20,147	873	2,161
1985	5,613	18,243	1,248	22,788	989	1,327
1986	5,722	17,802	1,141	27,033	1,023	-3,391
Projected:						
Calendar year						
Alternative A:						
1987	6,668	21,122	686	31,541	1,072	-4,137
Alternative B:						
1987	6,668	21,122	686	31,543	1,065	-4,132

1/ Includes administrative expenses incurred prior to the beginning of the program.
2/ 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, 1987. The financing established for calendar year 1987 was designed to reduce the excess of assets over liabilities to the appropriate level to maintain the actuarial soundness of the trust fund. As a result, the excess of assets over liabilities is expected to decrease from $4,234 million at the end of December 1986 to $96 million under alternative A and to $102 million under alternative B at the end of December 1987. This excess as a percent of incurred expenditures for the following year is expected to decrease from 13.0% as of December 31, 1986, to 0.3% as of December 31, 1987.

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, 1987
(Dollar amounts in millions)

	Balance in trust fund	Government contributions due and unpaid	Total assets	Benefits incurred but unpaid	Administrative costs incurred but unpaid	Total liabilities	Excess of assets over liabilities	Ratio 1/
Historical:								
As of June 30,								
1967	$ 486	$ 24	$ 510	$ 445	$-12	$ 433	$ 77	0.05
1968	307	88	395	498	1	499	-104	-0.05
1969	378	7	385	619	4	623	-238	-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	1,042	-19	1,023	244	0.06
1975	1,424	67	1,491	1,207	14	1,221	270	0.05
1976	1,219	106	1,325	1,357	-29	1,328	-3	0.00
1977	2,170	91	2,261	1,631	3	1,634	627	0.08
1978	3,786	48	3,834	2,024	40	2,064	1,770	0.20
1979	4,880	2	4,882	2,276	123	2,399	2,483	0.24
1980	4,657	0	4,657	2,701	188	2,889	1,768	0.14
1981	3,801	0	3,801	3,000	13	3,013	788	0.05
1982	5,534	1	5,535	2,761	-9	2,752	2,783	0.16
1983	6,780	2	6,782	2,842	-48	2,794	3,988	0.20
As of December 31,								
1983	7,070	1	7,071	3,004	-69	2,935	4,136	0.20
1984	9,698	2	9,700	3,490	-87	3,403	6,297	0.26
1985	10,924	0	10,924	3,331	-31	3,300	7,624	0.27
1986	8,291	0	8,291	4,125	-68	4,057	4,234	0.13
Projected:								
Alternative A:								
1987	5,090	0	5,090	5,061	- 67	4,994	96	0.00
Alternative B:								
1987	5,095	0	5,095	5,061	-68	4,993	102	0.00

1/ Ratio of the excess of 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 1987 (the period through which financing has been established), reaching a level of 11 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 the appropriate level to maintain the actuarial soundness of the trust fund. Under the high cost assumptions, trust fund liabilities would exceed assets by the end of December 1987, reaching a level of 9 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, 1987

	Alternative B 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,		
	1986	1987	1988	1986	1987	1988	1986	1987	1988
Projection factors (in percent): 1/									
Physicians' fees 2/									
Aged	0.4	6.9	4.2	0.0	6.4	3.5	0.8	7.4	4.9
Disabled	0.4	6.9	4.2	0.0	6.4	3.5	0.8	7.4	4.9
Utilization of physicians' services 3/									
Aged	11.0	7.9	5.4	9.5	6.2	3.1	12.5	9.6	7.7
Disabled	11.2	8.3	4.7	8.2	4.3	0.7	14.2	12.3	8.7
Outpatient hospital services per enrollee									
Aged	31.3	17.6	18.2	26.3	10.6	8.2	36.3	24.6	28.2
Disabled	34.0	16.3	17.0	28.0	6.3	2.0	40.0	26.3	32.0
	As of December 31,			As of December 31,			As of December 31,		
	1985	1986	1987	1985	1986	1987	1985	1986	1987
Actuarial status (in millions):									
Assets	$10,924	$8,291	$5,095	$10,924	$8,291	$7,254	$10,924	$8,291	$2,780
Liabilities	3,300	4,057	4,993	3,027	2,769	3,519	3,572	5,370	6,510
Assets less liabilities	$7,624	$4,234	$102	$7,897	$5,522	$3,735	$7,352	$2,921	-$3,730
Ratio of assets less liabilities to expenditures (in percent) 4/	27.2	13.0	0.3	29.2	18.2	11.0	25.3	8.3	-9.2

1/ 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 alternatives A and B on the projections in the report.

2/ As recognized for payment under the program.

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

4/ Ratio of assets less liabilities at the end of the year to 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 1987, by the setting of standard monthly premium rates (paid by or on behalf of each enrollee) of $17.90 for calendar year 1987 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 74.2 percent of all SMI income during calendar year 1987.

Under both sets of intermediate assumptions used in this report, disbursements are projected to exceed income during fiscal year 1987 and fiscal year 1988. 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 $9.4 billion at the end of fiscal year 1986 to an estimated $6.5 billion at the end of fiscal year 1987 and then to decrease to an estimated $5.5 billion at the end of fiscal year 1988.

Program assets exceeded liabilities by approximately $4,234 million at the end of December 1986 representing 13.0 percent of the projected incurred expenditures for the following 12-month period. The financing for calendar year 1987 was established to reduce assets to the appropriate levels to maintain the actuarial soundness of the trust fund. Assets are projected to exceed liabilities at the end of December 1987 by $96 million under alternative A, and by $102 million under alternative B, representing 0.3 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 1987 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 small 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. Growth rates have been so rapid that outlays of the program have doubled every five to six years, and this growth rate shows no sign of abating despite recent efforts to control 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, 1985, 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 smaller amounts for other services such as laboratory tests, durable medical equipment and supplies) 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). However, the cost of laboratory tests in outpatient departments of hospitals is no longer determined on a reasonable-cost basis but on a fee-schedule basis. 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 1985. Also shown are average enrollment figures for these years. In order to analyze the historical trends 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.

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 A1.--INCURRED REIMBURSEMENT AMOUNTS PER ENROLLEE: HISTORICAL

Year ending June 30,	Average enrollment (millions)	All services	Physician	Outpatient hospital	Home health agency	Group practice prepayment plan	Independent lab
Aged:							
1967	17.750	$62.51	$59.12	$1.41	$0.79	$0.89	$0.30
1968	18.038	80.06	74.47	2.40	1.49	1.35	0.35
1969	18.833	93.71	85.47	4.31	1.96	1.57	0.40
1970	19.312	99.91	90.03	5.91	1.99	1.50	0.48
1971	19.664	106.25	95.05	7.53	1.67	1.40	0.60
1972	20.043	114.22	101.63	8.55	1.60	1.66	0.78
1973	20.428	122.38	107.98	9.42	2.17	1.87	0.94
1974	20.988	134.47	117.48	11.32	2.03	2.44	1.20
1975	21.504	160.42	136.28	15.45	3.83	3.22	1.64
1976	22.089	188.80	156.27	21.26	5.19	4.06	2.02
1977	22.605	221.61	179.29	28.68	6.52	4.65	2.47
1978	23.133	254.45	207.05	33.38	6.82	4.28	2.92
1979	23.693	289.77	233.99	40.52	6.86	5.09	3.31
1980	24.287	343.45	277.24	47.06	7.58	7.51	4.06
1981	24.826	407.95	328.15	56.69	8.03	9.69	5.39
1982	25.363	464.29	381.02	64.65	0.50	11.65	6.47
1983	25.873	555.06	454.88	77.74	0.77	14.33	7.34
1984	26.433	636.34	512.35	96.26	0.99	17.61	9.13
1985	26.914	681.13	535.19	109.69	1.03	19.93	15.29
Disabled (excluding ESRD):							
1974	1.638	115.88	97.48	13.89	3.45	0.31	0.75
1975	1.816	148.45	125.50	17.32	3.58	0.80	1.25
1976	2.018	177.47	148.10	21.70	5.12	0.81	1.74
1977	2.231	218.79	174.48	36.44	4.79	0.75	2.33
1978	2.423	254.76	202.59	42.76	5.54	0.95	2.92
1979	2.563	299.87	240.40	50.49	5.12	0.35	3.51
1980	2.641	360.66	288.17	60.72	6.08	1.51	4.18
1981	2.687	431.25	340.16	77.15	7.21	1.59	5.14
1982	2.685	509.98	394.80	106.90	0.00	1.79	6.49
1983	2.628	621.91	484.74	127.06	0.00	1.98	8.13
1984	2.593	665.96	527.21	126.92	0.00	1.96	9.87
1985	2.593	697.79	550.60	129.55	0.00	2.51	15.13

Table A2.--INCURRED REASONABLE CHARGES OR COSTS PER ENROLLEE: HISTORICAL

Year ending June 30,	Average enrollment (millions)	All services	Physician	Outpatient hospital	Home health agency	Group practice prepayment plan	Independent lab
Aged:							
1967	17.750	$108.58	$102.70	$2.45	$1.37	$1.54	$0.52
1968	18.038	128.08	119.02	3.89	2.42	2.18	0.57
1969	18.833	145.17	131.91	6.93	3.15	2.53	0.65
1970	19.312	153.63	137.86	9.43	3.17	2.40	0.77
1971	19.664	162.10	144.41	11.89	2.64	2.21	0.95
1972	20.043	172.75	153.15	13.32	2.49	2.58	1.21
1973	20.428	186.20	163.99	14.78	3.02	2.94	1.47
1974	20.988	204.30	178.31	17.75	2.54	3.82	1.88
1975	21.504	236.78	201.23	23.50	4.66	4.90	2.49
1976	22.089	272.26	225.42	31.61	6.18	6.04	3.01
1977	22.605	313.51	253.78	41.76	7.60	6.77	3.60
1978	23.133	354.59	288.61	47.85	7.82	6.13	4.18
1979	23.693	399.08	322.16	57.28	7.76	7.20	4.68
1980	24.287	466.29	376.29	65.46	8.44	10.45	5.65
1981	24.826	545.95	438.81	77.67	8.80	13.28	7.39
1982	25.363	627.73	513.63	88.73	0.50	15.99	8.88
1983	25.873	749.28	613.47	105.60	0.77	19.47	9.97
1984	26.433	853.03	686.61	129.47	0.99	23.68	12.28
1985	26.914	900.50	709.47	147.85	1.03	26.86	15.29
Disabled (excluding ESRD):							
1974	1.638	170.09	143.28	21.02	4.18	0.47	1.14
1975	1.816	210.84	178.39	25.28	4.18	1.17	1.82
1976	2.018	248.50	207.63	31.28	5.91	1.17	2.51
1977	2.231	301.42	240.18	51.48	5.41	1.06	3.29
1978	2.423	347.69	276.23	59.84	6.20	1.33	4.09
1979	2.563	404.58	323.87	69.72	5.66	0.49	4.84
1980	2.641	480.87	383.75	82.74	6.63	2.06	5.69
1981	2.687	568.64	447.87	103.93	7.77	2.14	6.93
1982	2.685	678.22	523.03	144.04	0.00	2.41	8.74
1983	2.628	826.35	643.11	169.73	0.00	2.65	10.86
1984	2.593	884.39	699.62	169.01	0.00	2.61	13.15
1985	2.593	915.78	724.13	173.16	0.00	3.36	15.13

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

Year ending June 30,	Increase Due to Price Changes				Increase Due to Residual Factors			Total increase in recognized charges per enrollee
	Increase in physician fee component of CPI	Reduction due to fee screens: Cumulative effect	Reduction due to fee screens: Yearly changes	Net increase in reasonable charges	Gross residual factors	Effect of denials	Net residual factors	
Aged:								
1967	7.6	-2.6						
1968	5.9	-3.6	-1.0	4.8	12.2	-1.4	10.6	15.9
1969	6.2	-5.0	-1.5	4.7	6.3	-0.4	5.9	10.8
1970	6.7	-7.5	-2.6	3.9	3.8	-3.1	0.6	4.5
1971	7.5	-10.1	-2.8	4.5	3.6	-3.2	0.3	4.8
1972	5.2	-11.2	-1.2	3.9	1.7	0.4	2.1	6.1
1973	2.6	-11.7	-0.6	2.0	5.6	-0.6	5.0	7.1
1974	5.0	-13.2	-1.7	3.2	5.9	-0.6	5.3	8.7
1975	12.8	-16.2	-3.5	8.9	3.9	-0.3	3.6	12.8
1976	11.4	-18.6	-2.9	8.2	3.4	0.1	3.5	12.0
1977	10.2	-19.5	-1.1	9.0	3.2	0.1	3.3	12.6
1978	8.9	-19.4	0.1	9.0	4.2	0.1	4.3	13.7
1979	8.6	-20.0	-0.7	7.8	3.9	-0.3	3.6	11.7
1980	11.5	-22.1	-2.6	8.6	7.5	0.1	7.6	16.8
1981	11.1	-24.5	-3.1	7.7	7.5	0.7	8.3	16.6
1982	9.9	-23.9	0.8	10.8	5.2	0.5	5.7	17.1
1983	8.2	-23.4	0.7	8.9	9.8	-0.1	9.7	19.5
1984	7.5	-23.6	-0.3	7.2	5.0	-0.6	4.4	11.9
1985	3.9*	-25.9	-3.0	0.8	3.9	-1.3	2.5	3.3
Disabled (excluding ESRD):								
1974	5.0	-13.2						
1975	12.8	-16.2	-3.5	8.9	14.6	-0.3	14.3	24.5
1976	11.4	-18.6	-2.9	8.2	7.5	0.1	7.6	16.4
1977	10.2	-19.5	-1.1	9.0	6.0	0.1	6.1	15.6
1978	8.9	-19.4	0.1	9.0	5.4	0.1	5.5	15.0
1979	8.6	-20.0	-0.7	7.8	9.1	-0.3	8.8	17.3
1980	11.5	-22.1	-2.6	8.6	9.0	0.1	9.1	18.5
1981	11.1	-24.5	-3.1	7.7	7.5	0.7	8.3	16.6
1982	9.9	-23.9	0.8	10.8	5.0	0.5	5.5	16.9
1983	8.2	-23.4	0.7	8.9	13.0	-0.1	12.9	23.0
1984	7.5	-23.6	-0.3	7.2	2.1	-0.6	1.5	8.8
1985	3.9*	-25.9	-3.0	0.8	4.1	-1.3	2.7	3.5

*The actual increase in the physician fee component of the CPI was 6.0 percent. However, the Deficit Reduction Act of 1984 froze the actual charges, as recognized by Medicare, for nonparticipating physicians resulting in a net increase of 3.9 percent for Medicare services.

Bills submitted to the carriers during a specified 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, and Public Law 99-272 changed the fee screen year to a calendar year basis effective January 1, 1987. 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, and Public Law 99-272 changed the base period to the preceding 12-month period ending June 30. 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 of 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.

Certain services included with the physician services are not subject to the same fee-screen reduction process as described above. Effective October 1, 1985 there is an additional screen considered for nonphysician services, supplies, and equipment. After applying the customary and prevailing charge screens, fees are further reduced if they exceed the inflation-indexed charge (IIC). The IIC

represents the lowest of the reasonable charge screens from the preceding fee screen year as adjusted by an inflation factor. Effective July 1, 1984 charges for laboratory tests performed in physician offices and independent laboratories are determined by fee schedules. These fee schedules are updated at the beginning of the fee screen year by an inflation adjustment factor.

Since legislation has twice changed the time span of the fee screen year, and since the two transitional fee screen years (1985 and 1986) cover 15-month periods, data presented in tables A1 through A8 will be displayed for the same 12-month basis for all years. This basis will be the 12-month periods ending June 30.

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 reductions 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.

Per capita charges also have increased each year as a result of a number of possible factors including more physician visits per enrollee, the aging of the Medicare enrollment, greater use of specialists and more expensive techniques, and certain administrative actions. The fifth column of table A3 shows the increases 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 increases in charges per enrollee for physician services. It includes the effects 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 increases in customary charges in each of the years ending June 30, 1986 through June 30, 1990. As described above, each of these increases depends on the increases in fees actually submitted during the base period. 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 are shown in column 2. The projected net increases in reasonable charges are shown in column 3; this compares with the corresponding historical data shown in column 4 of table A3.

Table A4.--COMPONENTS OF INCREASES IN TOTAL RECOGNIZED CHARGES PER ENROLLEE FOR PHYSICIAN SERVICES: PROJECTED
(In percent)

Year ending June 30,	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:							
1986	8.1	-7.1	0.4	11.0	0.0	11.0	11.4
1987	6.0	0.8	6.9	7.9	0.0	7.9	15.3
1988	5.4	-1.1	4.2	5.4	0.0	5.4	9.8
1989	5.6	-2.6	2.9	5.1	0.0	5.1	8.1
1990	5.6	-1.9	3.6	5.1	0.0	5.1	8.9
Disabled (excluding ESRD):							
1986	8.1	-7.1	0.4	11.2	0.0	11.2	11.6
1987	6.0	0.8	6.9	8.3	0.0	8.3	15.8
1988	5.4	-1.1	4.2	4.7	0.0	4.7	9.1
1989	5.6	-2.6	2.9	5.7	0.0	5.7	8.8
1990	5.6	-1.9	3.6	6.0	0.0	6.0	9.8
Alternative B:							
Aged:							
1986	8.1	-7.1	0.4	11.0	0.0	11.0	11.4
1987	6.1	0.8	6.9	7.9	0.0	7.9	15.3
1988	5.9	-1.6	4.2	5.4	0.0	5.4	9.8
1989	6.6	-3.4	3.0	5.1	0.0	5.1	8.3
1990	6.5	-2.4	3.9	5.1	0.0	5.1	9.2
Disabled (excluding ESRD):							
1986	8.1	-7.1	0.4	11.2	0.0	11.2	11.6
1987	6.1	0.8	6.9	8.3	0.0	8.3	15.8
1988	5.9	-1.6	4.2	4.7	0.0	4.7	9.1
1989	6.6	-3.4	3.0	5.7	0.0	5.7	8.9
1990	6.5	-2.4	3.9	6.0	0.0	6.0	10.1

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).

(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.

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.

2. ESTIMATES FOR PERSONS SUFFERING FROM END STAGE RENAL DISEASE

Certain persons suffering from end stage renal disease have been eligible to enroll for SMI coverage since July 1973 (under Section 299I of Public Law 92-603). For analytical purposes, those enrollees suffering from ESRD who are also eligible

Table A5.—INCREASES IN RECOGNIZED CHARGES AND COSTS PER ENROLLEE FOR INSTITUTIONAL AND OTHER SERVICES
(In Percent)

Year ending June 30,	Outpatient hospital	Home health agency	Group practice prepayment plan	Independent lab
Aged:				
Historical:				
1968	58.8 1/	76.6	41.6	9.6
1969	78.1	30.2	16.1	14.0
1970	36.1	0.6	-5.1	18.5
1971	26.1	-16.7	-7.9	23.4
1972	12.0	-5.7	16.7	27.4
1973	11.0	21.3	14.0	21.5
1974	20.1	-15.9	29.9	27.9
1975	32.4	83.5	28.3	32.4
1976	34.5	32.6	23.3	20.9
1977	32.1	23.0	12.1	19.6
1978	14.6	2.9	-9.5	16.1
1979	19.7	-0.8	17.5	12.0
1980	14.3	8.8	45.1	20.7
1981	18.7	4.3	27.1	30.8
1982	14.2	-94.3	20.4	20.2
1983	19.0	54.0	21.8	12.3
1984	22.6	28.6	21.6	23.2
1985	14.2	4.0	13.4	24.5
Projected:				
1986	31.3	9.3	19.7	16.6
1987	17.6	13.5	19.9	15.0
1988	18.2	9.0	20.2	15.8
1989	18.2	10.3	19.9	15.3
1990	18.0	9.0	20.1	16.9
Disabled (excluding ESRD):				
Historical:				
1975	20.3	0.0	148.9	59.6
1976	23.7	41.4	0.0	37.9
1977	64.6	-8.5	-9.4	31.1
1978	16.2	14.6	25.5	24.3
1979	16.5	-8.7	-63.2	18.3
1980	18.7	17.1	320.4	17.6
1981	25.6	17.2	3.9	21.8
1982	38.6	-100.0	12.6	26.1
1983	17.8	0.0	10.0	24.3
1984	-0.4	0.0	-1.5	21.1
1985	2.5	0.0	28.7	15.1
Projected:				
1986	34.0	0.0	35.9	18.1
1987	16.3	0.0	9.6	16.3
1988	17.0	0.0	9.0	16.9
1989	18.4	0.0	7.3	16.1
1990	17.9	0.0	6.2	17.6

1/ Percentage change over prior year's annualized value.

Table A6.--INCURRED REASONABLE CHARGES OR COSTS PER ENROLLEE: PROJECTED

Year ending June 30,	All services	Physician	Outpatient hospital	Home health agency	Group practice prepayment plan	Independent lab
Alternative A:						
Aged:						
1986	1,036.48	791.25	194.12	1.13	32.15	17.83
1987	1,201.00	912.42	228.25	1.28	38.54	20.51
1988	1,343.41	1,002.16	269.78	1.40	46.32	23.75
1989	1,487.08	1,083.77	318.91	1.54	55.56	27.30
1990	1,656.02	1,179.57	376.35	1.68	66.74	31.68
Disabled (excluding ESRD):						
1986	1,063.44	809.01	232.00	0.00	4.57	17.86
1987	1,231.50	935.95	269.78	0.00	5.01	20.76
1988	1,366.56	1,021.30	315.55	0.00	5.46	24.25
1989	1,518.45	1,110.84	373.68	0.00	5.86	28.07
1990	1,698.72	1,219.22	440.53	0.00	6.22	32.75
Alternative B:						
Aged:						
1986	1,036.48	791.25	194.12	1.13	32.15	17.83
1987	1,201.00	912.42	228.25	1.28	38.54	20.51
1988	1,343.51	1,002.25	269.78	1.40	46.32	23.76
1989	1,488.76	1,085.35	318.91	1.54	55.56	27.40
1990	1,661.75	1,184.94	376.65	1.68	66.74	32.04
Disabled (excluding ESRD):						
1986	1,063.44	809.01	232.00	0.00	4.57	17.86
1987	1,231.50	935.95	269.78	0.00	5.01	20.76
1988	1,366.67	1,021.40	315.55	0.00	5.46	24.26
1989	1,520.18	1,112.46	373.68	0.00	5.86	28.18
1990	1,704.65	1,224.77	440.53	0.00	6.22	33.13

Table A7.—INCURRED REIMBURSEMENT AMOUNTS: PROJECTED

Year ending June 30,	Average enrollment (millions)	Reimbursement amounts	
		Per enrollee	Aggregate (millions)
Alternative A:			
Aged:			
1986	27.453	789.93	21,686
1987	28.071	925.47	25,979
1988	28.645	1,043.64	29,895
1989	29.203	1,160.43	33,888
1990	29.760	1,297.98	38,628
Disabled (excluding ESRD):			
1986	2.675	803.36	2,149
1987	2.681	939.57	2,519
1988	2.696	1,049.33	2,829
1989	2.733	1,170.51	3,199
1990	2.782	1,314.52	3,657
Alternative B:			
Aged:			
1986	27.453	789.93	21,686
1987	28.071	925.47	25,979
1988	28.645	1,043.74	29,898
1989	29.203	1,161.83	33,929
1990	29.760	1,302.69	38,768
Disabled (excluding ESRD):			
1986	2.675	803.36	2,149
1987	2.681	939.57	2,519
1988	2.696	1,049.33	2,829
1989	2.733	1,172.34	3,204
1990	2.782	1,319.55	3,671

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 3.0 percent per year over the 5-year period (July 1, 1985 through June 30, 1990). The estimates also assume a continued increase in enrollment. The historical and projected enrollment and costs are shown in table A8.

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.

4. ADMINISTRATIVE EXPENSES

The ratio of administrative expenses to benefit payments has been under 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.

Table A8.--INCURRED REIMBURSEMENT AMOUNTS FOR END STAGE RENAL DISEASE

Year ending June 30,	Disabled ESRD and ESRD only			ESRD only
	Reimbursement amounts			Reimbursement amounts
	Average enrollment (thousands)	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	15,778	852	465
1983	59	15,780	931	485
1984	65	12,969	843	392
1985	69	11,043	762	351
1986	73	11,452	836	379
1987	75	11,947	896	412
1988	78	12,359	964	443
1989	80	12,738	1,019	473
1990	83	13,108	1,088	504

Table A9.—AGGREGATE REIMBURSEMENT AMOUNTS ON A CASH BASIS
(In millions)

Fiscal years*	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	2,555	187	132	2,874
1975	3,312	251	202	3,765
1976	4,064	332	276	4,672
T.Q.	1,083	108	78	1,269
1977	5,035	483	349	5,867
1978	5,821	602	429	6,852
1979	6,964	770	525	8,259
1980	8,512	974	658	10,144
1981	10,382	1,177	786	12,345
1982	12,404	1,462	940	14,806
1983	14,783	1,716	988	17,487
1984	16,845	1,772	856	19,473
1985	19,075	1,940	793	21,808
1986	22,180	2,181	808	25,169
Projected:				
Alternative A:				
1987	26,084	2,516	887	29,487
1988	30,223	2,866	990	34,079
1989	34,703	3,280	1,046	39,029
1990	39,497	3,744	1,107	44,348
Alternative B:				
1987	26,085	2,516	887	29,488
1988	30,233	2,866	990	34,089
1989	34,759	3,286	1,046	39,091
1990	39,657	3,760	1,107	44,524

* 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 1977-1990 cover the interval from October 1 through September 30.

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 1987*

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 1985 through 1986.

* This statement appeared in the Federal Register of October 2, 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.

TABLE 1--ESTIMATED ACTUARIAL STATUS OF THE SMI TRUST FUND AS OF THE END OF THE FINANCING PERIODS, JANUARY 1, 1985--DECEMBER 31, 1986
(In Millions of Dollars)

Financing Period Ending	Assets	Liabilities	Assets Less Liabilities
December 31, 1985	$10,924	$3,237	$7,687
December 31, 1986	8,715	3,660	5,055

2. Monthly Actuarial Rate for Enrollees Age 65 and Older

The monthly actuarial rate is one-half of the monthly projected cost of 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.

The monthly actuarial rate for enrollees age 65 and older for calendar year 1987 was determined by projecting per-enrollee cost for the 12-month periods ending June 30, 1987, and June 30, 1988, by type of 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) of Pub. L. 98-369. The values for the 12-month period ending June 30, 1984, 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. Those per-enrollee values

TABLE 2--PROJECTION FACTORS 1/
12-MONTH PERIODS ENDING JUNE 30 OF 1984-1988
(In percent)

12-month period ending June 30	Physicians' services		Radiology and pathology	Outpatient hospital services	Home health agency services	Group practice prepayment plans	Independent lab services
	Fees 2/	Residual 3/					
Aged:							
1984	7.2	4.7	-12.3	22.7	28.6	22.3	23.3
1985	0.8	4.6	1.8	17.2	1.5	12.8	111.2
1986	0.1	7.3	13.5	22.3	8.0	21.5	13.1
1987	5.1	2.4	13.4	18.2	10.7	22.0	11.8
1988	5.1	2.7	13.7	16.9	12.3	22.3	16.3
Disabled:							
1984	7.2	3.7	-11.5	-2.0	0.0	4.9	20.2
1985	0.8	6.6	-0.3	9.2	0.0	29.7	113.1
1986	0.1	8.7	14.5	21.7	0.0	12.5	12.7
1987	5.1	4.5	14.4	18.1	0.0	11.1	12.7
1988	5.1	4.7	14.2	17.1	0.0	15.7	15.8

1/ All values are per enrollee.
2/ As recognized for payment under the program.
3/ Increase in the number of services received per enrollee and greater relative use of more expensive services.

are then adjusted to apply to a calendar year period. The projected values for financing periods from January 1984, through December 31, 1987, are shown in Table 3.

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 1987 is $39.02. The monthly actuarial rate of $35.80 provides an adjustment for interest earnings and -$2.86 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 (before age 65) to disabiltiy 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 projection 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 3--DERIVATION OF MONTHLY ACTUARIAL RATE FOR ENROLLEES AGE 65 AND OVER
FINANCING PERIODS ENDING DECEMBER 31, 1984 THROUGH DECEMBER 31, 1987

	Financing Periods			
	CY 1984	CY 1985	CY 1986	CY 1987
Covered services (at level recognized):				
Physicians' reasonable charges	$28.00	$29.81	$32.05	$34.54
Radiology and pathology	0.99	1.07	1.21	1.38
Outpatient hospital and other institutions	5.88	7.06	8.47	9.95
Home health agencies	0.04	0.04	0.05	0.05
Group practice prepayment plans	1.03	1.21	1.47	1.80
Independent lab	0.79	1.15	1.29	1.47
Total services	36.74	40.33	44.54	49.19
Cost-Sharing:				
Deductible	-2.50	-2.51	-2.51	-2.52
Coinsurance	-6.73	-7.33	-8.14	-9.03
Total benefits	27.51	30.50	33.89	37.64
Administrative expenses	1.17	1.31	1.33	1.38
Incurred expenditures	28.68	31.81	35.21	39.02
Value of interest	-0.96	-1.16	-0.92	-0.35
Contingency margin for projection error and to amortize the surplus or deficit	1.47	0.36	-3.29	-2.86
Monthly actuarial rate	$29.20	$31.00	$31.00	$35.80

TABLE 4--DERIVATION OF MONTHLY ACTUARIAL RATE FOR DISABLED ENROLLEES
FINANCING PERIODS ENDING DECEMBER 31, 1984 THROUGH DECEMBER 31, 1987

	Financing Periods			
	CY 1984	CY 1985	CY 1986	CY 1987
Covered services (at level recognized):				
Physicians' reasonable charges	$33.47	$36.44	$40.10	$44.46
Radiology and pathology	1.02	1.09	1.24	1.42
Outpatient hospital and other institutions	19.73	21.87	24.56	27.41
Home health agencies	0.00	0.00	0.00	0.00
Group practice prepayment plans	0.26	0.31	0.34	0.39
Independent lab	1.06	1.48	1.67	1.91
Total services	55.54	61.19	67.91	75.59
Cost-Sharing:				
Deductible	-2.26	-2.27	-2.27	-2.26
Coinsurance	-10.54	-11.54	-12.86	-14.36
Total benefits	42.74	47.38	52.78	58.97
Administrative expenses	1.83	2.05	2.09	2.18
Incurred expenditures	44.57	49.43	54.87	61.15
Value of interest and other income	-5.40	-7.47	-7.42	-6.70
Contingency margin for projection error and to amortize the surplus or deficit	15.13	10.74	-6.65	-1.45
Monthly actuarial rate	$54.30	$52.70	$40.80	$53.00

The projected monthly rate required to pay for one-half of the total of benefits and administrative costs for disabled enrollees for calendar year 1987 is $61.15. The monthly actuarial rate of $53.00 provides an adjustment for interest earnings and a -$1.45 for a contingency margin. As in the determination of the monthly actuarial rate for aged 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, 1987

	This Projection			Low Cost Projection			High Cost Projection		
	12-month periods ending June 30,			12-month periods ending June 30,			12-month periods ending June 30,		
	1986	1987	1988	1986	1987	1988	1986	1987	1988
Projection Factors (in percent): 1/									
Physician servies - fees 2/									
Aged	0.1	5.1	5.1	-0.4	4.6	4.4	0.6	5.6	5.8
Disabled	0.1	5.1	5.1	-0.4	4.6	4.4	0.6	5.6	5.8
Physician services - Residual 3/									
Aged	7.3	2.4	2.7	5.8	0.7	0.4	8.8	4.1	5.0
Disabled	8.7	4.5	4.7	4.7	-0.5	-0.3	12.7	9.5	9.7
Outpatient hospital services									
Aged	22.3	18.2	16.9	17.3	11.2	6.9	27.3	25.2	26.9
Disabled	21.7	18.1	17.1	13.7	8.1	7.1	29.7	28.1	27.1

	As of December 31,			As of December 31,			As of December 31,		
	1985	1986	1987	1985	1986	1987	1985	1986	1987
Actuarial status (in millions):									
Assets	$10,924	$8,715	$3,379	$10,924	$9,695	$6,588	$10,924	$7,694	4/
Liabilities	$ 3,237	$3,660	$4,116	$ 2,949	$3,285	$3,610	$ 3,528	$4,043	$4,644
Assets Less Liabilities	$ 7,687	$5,055	-$737	$ 7,975	$6,410	$2,978	$ 7,396	$3,651	4/
Ratio of assets less liabilities to expenditures (in percent) 5/	28.3	16.5	-2.1	30.5	22.5	9.4	26.2	11.1	4/

1/ All values are per enrollee.
2/ As recognized for payment under the program.
3/ Increase in the number of services received per enrollee and greater relative use of more expensive services.
4/ The trust fund will be depleted by December 31, 1987 under this set of assumptions.
5/ Ratio of assets less liabilities at the end of the year to total incurred expenditures during the following year, expressed as a percent.

Table 5 was prepared based on the assumption that there will be no cost-of-living increase under section 215(i) of the Act for December 1986.* Current information indicates that it is unlikely that the applicable increase in the consumer price index would exceed the three percent required by section 215(i) of the Act for any cost-of-living increase to take effect. The assumptions that there will be no cost-of-living increase under section 215(i) of the Act has two impacts on the trust fund for 1987. First, section 1839(f)(1) of the Act freezes the SMI premium for 1987 at $15.50 for all SMI enrollees, except for those individuals subject to section 1839(b) of the Act. Second, section 1844(a)(1) of the Act allows for general revenue transfers to be made based on the premium rate determined by section 1839(a)(3) or 1839(e) of the Act ($17.90) and not by the rate determined by section 1839(f)(1) of the Act ($15.50). Consequently for 1987 the income to the trust fund, and, therefore, the assets of the trust fund, will be less than what they would have been if there had been a cost-of-living increase. Furthermore, based on the general revenue determination of section 1844(a)(1) of the Act, this loss of assets in 1987 will be the same regardless of the margins included in the actuarial rates, provided that the aged actuarial rate for 1987 exceeds the rate for 1986.

With regard to the above, 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 -$737 million by the end of December 1987.

* This statement appeared in the Federal Register on October 2, 1986 prior to the enactment of Pub. L. 99-509, the Omnibus Budget Reconciliation Act of 1986. Section 9001 of Pub. L. 99-509 removed from section 215(i) of the Act the minimum requirement of a three percent increase in the consumer price index for any cost-of-living increase to take effect. Consequently, the cost-of-living adjustment in social security benefits payable in 1987 was 1.3 percent, the SMI premium for 1987 increased to $17.90, and the two impacts on the trust fund for 1987 as stated in this paragraph no longer apply.

This amounts to -2.1 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) deplete the trust fund by the end of December 1987. Under fairly optimistic assumptions, the monthly actuarial rates will result in a surplus of $2,978 million by the end of December 1987, which amounts to 9.4 percent of the estimated total incurred expenditures for the following year.

5. Standard Premium Rate

For calendar years 1984 through 1988, 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 1987 is $17.90, which is 50 percent of the monthly actuarial rate for this period ($35.80).

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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