III. APPENDICES

A. STATEMENT OF ACTUARIAL ASSUMPTIONS AND BASES EMPLOYED IN DETERMINING THE MONTHLY ACTUARIAL RATES AND THE MONTHLY PREMIUM RATE FOR THE SUPPLEMENTARY MEDICAL INSURANCE PROGRAM BEGINNING JANUARY 1993 [1]

1. Actuarial Status of the Supplementary Medical Insurance Trust Fund

Under the law, the starting point for determining the monthly premium is the amount that would be necessary to finance the SMI program on an incurred basis; that is, the amount of income that would 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 and used when needed.

The rates are established prospectively and are therefore subject to projection error. Additionally, legislation enacted after the financing has been established, but effective for the period for which the financing has been set, may affect program costs. 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 variation between actual and projected costs in addition to the amount of incurred but unpaid expenses. Table III.A.1 summarizes the estimated actuarial status of the trust fund as of the end of the financing period for 1991 through 1992.

[1]This statement incorporates the announcement that appeared in the Federal Register of December 1, 1992 with the announcement that appeared in the Federal Register of December 21, 1992. The December 1 announcement contained a typographical error in one of the tables, and the December 21 statement announced the correction. Projections shown in this statement differ from the projections shown in the rest of the report because of changes in assumptions since the preparation of this statement.

TABLE III.A.1.—ESTIMATED ACTUARIAL STATUS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND AS OF THE END OF THE FINANCING PERIODS, JAN. 1, 1991 - DEC. 31, 1992

[In millions of dollars]

Financing Period Ending	Assets	Liabilities	Assets less liabilities
Dec. 31, 1991	$17,828	$5,219	$12,609
Dec. 31, 1992	$15,878	$5,980	$ 9,898

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 variation between actual and projected costs and to amortize unfunded liabilities.

The monthly actuarial rate for enrollees age 65 and older for CY 1992 was determined by projecting per-enrollee cost for the 12-month periods ending June 30, 1993 and June 30, 1994, 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 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, 1990, 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 III.A.2. Those per-enrollee values are then adjusted to apply to a calendar year period. The projected values for financing periods from January 1, 1990, through December 31, 1993, are shown in Table III.A.3.

TABLE III.A.2.—PROJECTION FACTORS[1] 12-MONTH PERIODS ENDING JUNE 30 OF 1990-1994

[In percent]

12-month period ending June 30,	Physicians' services		Outpatient hospital services	Home health agency services[4]	Group practice prepayment plans	Independent lab services
	Fees[2]	Residual[3]				
Aged:						
1990	1.0	9.0	4.2	93.5	18.9	20.6
1991	-1.5	7.5	16.9	-15.3	18.0	14.9
1992	-0.2	7.0	14.2	13.6	18.6	17.2
1993	2.1	7.1	14.1	12.4	18.6	19.8
1994	1.4	7.6	14.3	12.8	18.7	20.5
Disabled:						
1990	1.0	6.7	10.0	0.0	17.7	16.7
1991	-1.5	5.8	15.1	0.0	17.5	9.0
1992	-0.2	3.2	10.5	0.0	11.8	10.1
1993	2.1	4.8	11.3	0.0	12.8	15.1
1994	1.4	6.5	12.5	0.0	17.1	16.2

[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]Since July 1, 1981, home health agency services have been almost exclusively provided by the Medicare HI program. However, for those SMI enrollees not entitled to HI, the coverage of these services is provided by the SMI program. Since all SMI disabled enrollees are entitled to HI, their coverage of these services is provided by the HI program.

TABLE III.A.3.—DERIVATION OF MONTHLY ACTUARIAL RATE FOR ENROLLEES AGE 65 AND OVER FINANCING PERIODS ENDING DECEMBER 31, 1990 THROUGH DECEMBER 31, 1993

	Financing Periods			
	CY 1990	CY 1991	CY 1992	CY 1993
Covered services (at level recognized):				
Physicians' reasonable charges	$49.26	$52.41	$56.71	$61.95
Outpatient hospital and other institutions	12.85	14.83	16.93	19.33
Home health agencies	0.11	0.11	0.13	0.14
Group practice prepayment plans	5.20	6.15	7.30	8.66
Independent lab	1.98	2.30	2.73	3.28
Total services	$69.40	$75.80	$83.80	$93.96

TABLE III.A.3.—DERIVATION OF MONTHLY ACTUARIAL RATE FOR ENROLLEES AGE 65 AND OVER FINANCING PERIODS ENDING DECEMBER 31, 1990 THROUGH DECEMBER 31, 1993

	Financing Periods			
	CY 1990	CY 1991	CY 1992	CY 1993
Cost-sharing:				
Deductible	-3.08	-3.47	-3.54	-3.55
Coinsurance	-13.15	-13.94	-15.24	-17.02
Total benefits	$53.17	$58.39	$65.02	$72.79
Administrative expenses	1.90	1.95	2.00	2.08
Incurred expenditures	$55.07	$60.34	$67.02	$74.87
Value of interest	-1.81	-2.22	-2.19	-1.63
Contigency margin for projection error and to amortize the surplus or deficit	3.94	4.48	-4.03	-2.74
Monthly actuarial rate	$57.20	$62.60	$60.80	$70.50

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 CY 1993 is $74.87. The monthly actuarial rate of $70.50 provides an adjustment of -$1.63 for interest earnings and -$2.74 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 contingency margin is needed to reduce assets toward a more appropriate level.

An appropriate level for assets depends on numerous factors. The most important of these factors are: (1) the difference from prior years in the actual performance of the program and estimates made at the time financing was established and (2) the expected relationship between incurred and cash expenditures. Ongoing analysis is made of the former as the trends in the differences vary over time.

3. Monthly Actuarial Rate for Disabled Enrollees

Disabled enrollees are those persons enrolled in SMI because of entitlement (before age 65) to disability benefits for more 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 III.A.2). Costs for the end-stage renal disease program are projected differently because of the different nature of services offered by the program. The combined results for all disabled enrollees are shown in Table III.A.4.

TABLE III.A.4.—DERIVATION OF MONTHLY ACTUARIAL RATE FOR DISABLED ENROLLEES FINANCING PERIODS ENDING DECEMBER 31, 1990 THROUGH DECEMBER 31, 1993

	Financing Periods			
	CY 1990	CY 1991	CY 1992	CY 1993
Covered services (at level recognized):				
Physicians' reasonable charges	52.30	54.68	57.69	61.56
Outpatient hospital and other institutions	29.98	32.90	34.77	36.73
Home health agencies	0.00	0.00	0.00	0.00
Group practice prepayment plans	1.72	1.97	2.21	2.55
Independent lab	1.96	2.13	2.36	2.66
Total services	85.96	91.68	97.03	103.50
Cost-sharing:				
Deductible	-2.89	-3.30	-3.41	-3.42
Coinsurance	-16.59	-17.33	-18.14	-19.34
Total benefits	66.48	71.05	75.48	80.74
Administrative expenses	2.38	2.37	2.32	2.30
Incurred expenditures	68.86	73.42	77.80	83.04
Value of interest	-3.86	-1.19	-0.36	-0.56
Contigency margin for projection error and to amortize the surplus or deficit	-20.90	-16.23	3.36	0.42
Monthly actuarial rate	$44.10	$56.00	$80.80	$82.90

The projected monthly rate required to pay for one-half of the total of benefits and administrative costs for disabled enrollees for CY 1993 is $83.04. The monthly actuarial rate of $82.90 provides an adjustment of -$0.56 for interest earnings and a $0.42 for a contingency margin. Based on current estimates, it appears that assets alone are not sufficient to cover the amount of incurred but unpaid expenses and to provide for a moderate degree of variation between actual and projected costs. Thus, a positive contingency margin is needed to build assets to more appropriate levels.

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 III.A.2), and increases in physician fees as constrained by the program's physician fee schedule that began implementation January 1, 1992. Two alternative sets of assumptions and the results of those assumptions are shown in Table III.A.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 variation between actual and projected increases in the respective increase factors. All assumptions not shown in Table III.A.5 are the same as in Table III.A.2.

Table III.A.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 $7,884 million by the end of December 1993. This amounts to 11.2 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 $2,229 million by the end of December 1993, which amounts to 2.8 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 $13,322 million by the end of December, 1993, which amounts to 21.3 percent of the estimated total incurred expenditures for the following year.

Table III.A.5.—ACTUARIAL STATUS OF THE SUPPLEMENTARY MEDICAL INSURANCE TRUST FUND UNDER THREE SETS OF ALTERNATIVE ASSUMPTIONS FOR FINANCING PERIODS THROUGH DECEMBER 31, 1993

	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,		
	1992	1993	1994	1992	1993	1994	1992	1993	1994
Projection factors (in percent):									
Physician fees[1]									
Aged	-0.2	2.1	1.4	-1.0	0.7	-1.1	0.6	3.5	3.9
Disabled	-0.2	2.1	1.4	-1.0	0.7	-1.1	0.6	3.5	3.9
Utilization of physician services[2]									
Aged	7.0	7.1	7.6	5.2	4.6	4.8	8.8	9.7	10.3
Disabled	3.2	4.8	6.5	-1.0	0.7	2.8	7.3	9.0	10.2
Outpatient hospital services per enrollee									
Aged	14.2	14.1	14.3	10.8	8.5	7.7	17.6	19.7	20.9
Disabled	10.5	11.3	12.5	5.3	6.0	6.8	15.7	16.6	18.1
	As of December 31,			As of December 31,			As of December 31,		
	1991	1992	1993	1991	1992	1993	1991	1992	1993
Actuarial status (in millions):									
Assets	$17,828	$15,878	$14,218	$17,828	$19,021	$17,038	$17,828	$12,553	$11,308
Liabilities	5,219	5,980	6,334	3,201	3,715	3,716	7,275	8,309	9,079
Assets less liabilities	$12,609	$9,898	$7,884	$14,627	$15,306	$13,322	$10,553	$4,244	$2,229
Ratio of assets less liabilities to expenditures (in percent)[3]	22.9	15.9	11.2	28.3	27.2	21.3	18.0	6.1	2.8

[1]As recognized for payment under the program.

[2]Increase in the number of services recieved per enrollee and greater relative use of more expensive services.

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

5. Premium Rate

Section 4301 of OBRA '90 added section 1839(e)(1)(B)(iii) to the Act, which provides that the monthly premium rate for 1993, for both aged and disabled enrollees, is $36.60.

B. GLOSSARY

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

Actuarial soundness. A measure of the adequacy of the financing as determined by the actuarial status at the end of the periods for which financing was established.

Actuarial status. The difference between the assets and the liabilities.

Administrative expenses. Expenses incurred by the Department of HHS and the Department of the Treasury in administering the SMI program and the provisions of the Internal Revenue Code relating to the collection of contributions. Such administrative expenses, which are paid from the SMI trust fund, include expenditures for contractors to determine costs of and make payments to providers as well as salaries and expenses of HCFA.

Advisory Council on Social Security. Under the Social Security Act, an Advisory Council is appointed every 4 years to study and review the financial status of the OASDI and Medicare programs. The most recent Advisory Council was appointed in 1989 and issued its reports in 1991.

Aged enrollee. An individual, age 65 or over, who is enrolled in the SMI program.

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

Alternative I, II, or III. See "Assumptions."

Amortization. Process of the gradual retirement of an outstanding debt by making periodic payments to the trust fund.

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

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

(1) Alternative I is characterized as an "optimistic" set, with relatively rapid economic growth, low inflation, and favorable (from the standpoint of program financing) demographic conditions.

(2) Alternative II is the "intermediate" set of assumptions, with "best estimates" of future economic and demographic conditions.

(3) Alternative III is more "pessimistic," with slow economic growth, more rapid inflation, and financially disadvantageous demographic conditions.

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

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

Beneficiary. A person enrolled in the SMI program. See also "Aged enrollee" and "Disabled enrollee."

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

Board of Trustees. A Board established by the Social Security Act to oversee the financial operations of the Federal SMI Trust Fund. The Board is composed of five members, three of whom serve automatically by virtue of their positions in the Federal government: the Secretary of the Treasury, the Secretary of Labor, and the Secretary of HHS. The other two members are appointed by the President as public representatives: Stanford G. Ross and David M. Walker are currently serving 4 year terms that began on October 2, 1990. The Administrator of HCFA serves as Secretary of the Board of Trustees.

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

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

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

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

Coinsurance. Portion of the SMI costs paid by the beneficiary after meeting the annual deductible.

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

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

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

Covered services. Services for which SMI pays, as defined and limited by statute. Covered services are provided for most physician services, care in outpatient departments of hospitals, diagnostic tests, DME, ambulance services, and other health services which are not covered by the HI program.

Deductible. The annual amount payable by the beneficiary for covered services before Medicare makes reimbursement.

Demographic assumptions. See "Assumptions."

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

Disabled enrollee. An individual under age 65 who has been entitled to disability benefits under Title II of the Social Security Act or the railroad retirement System for at least 2 years and who is enrolled in the SMI program.

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

Economic assumptions. See "Assumptions."

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

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

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

Fiscal year (FY). The accounting year of the United States Government. Since 1976, each fiscal year has begun on October 1 of the prior calendar year and ended the following September 30. For example, fiscal year 1993 began October 1, 1992 and will end September 30, 1993.

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

General revenue. Income to the SMI trust fund from the general fund of the Treasury.

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

Group practice prepayment plan (GPPP). An organization which has a formal arrangement with three or more full-time physicians to provide certain health services to the plan's members who, through the advance payment of premiums, have contributed toward the cost of services. The most prevalent arrangement is a Health Maintenance Organization (HMO).

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

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

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

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

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

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

Intermediate assumptions. See "Assumptions."

Medicare. A nationwide, federally administered health insurance program authorized in 1965 to cover the cost of hospitalization, medical care, and some

related services for most people over age 65. In 1972, coverage was extended to people receiving Social Security Disability Insurance payments for 2 years, and people with ESRD. Medicare consists of two separate but coordinated programs -- Part A (hospital insurance, HI) and Part B (supplementary medical insurance, SMI). Almost all persons aged 65 or over or disabled entitled to HI are eligible to enroll in the SMI program on a voluntary basis by paying a monthly premium. Health insurance protection is available to Medicare beneficiaries without regard to income.

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

Medicare Volume Performance Standard. A system for establishing goals for the rate of growth in expenditures for physicians' services.

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

Optimistic assumptions. See "Assumptions."

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

Part A. The Medicare Hospital Insurance program.

Part B. The Medicare Supplementary Medical Insurance program.

Pessimistic assumptions. See "Assumptions."

Provider. Any organization, institution, or individual who provides health care services to the Medicare beneficiaries. Physicians, ambulatory surgical

centers, outpatient clinics, are some of the providers of services covered under Medicare Part B.

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

Resource-based relative value scale. A scale of national uniform relative values for all physicians' services. The relative value of each service must be the sum of relative value units representing physician work, practice expenses net of malpractice expenses, and the cost of professional liability insurance.

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

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

Special public-debt obligation. Securities of the United States Government issued exclusively to the OASI, DI, HI, and SMI trust funds and other Federal trusts funds. Section 1841(a) of the Social Security Act provides that the public-debt obligations issued for purchase by the SMI trust fund shall have maturities fixed with due regard for the needs of the funds. The usual practice in the past has been to spread the holdings of special issues, as of each June 30, so that the amounts maturing in each of the next 15 years are approximately equal. Special public-debt obligations are redeemable at par at any time.

Supplementary Medical Insurance (SMI). The Medicare program which pays for a portion of the costs of physician's services, outpatient hospital services, and other related medical and health services for voluntarily insured aged and disabled individuals. Also known as Part B.

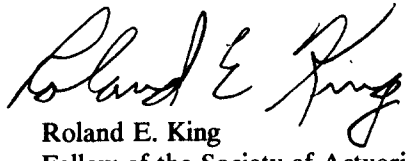
SMI premium. Monthly premium paid by those individuals who have enrolled in the voluntary SMI program.

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

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

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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