APPENDIX A

ACTUARIAL METHODOLOGY AND PRINCIPAL ASSUMPTIONS FOR THE HOSPITAL INSURANCE COST ESTIMATES*

The basic methodology and assumptions for alternative II-A and alternative II-B used in the estimates for the hospital insurance program are described in this appendix. These alternatives reflect different levels of expectation as to the enactment and effectiveness of the President's economic program. In addition, sensitivity testing of program costs under alternative sets of assumptions is presented.

1. PROGRAM COSTS

The principal steps involved in projecting the future costs of the hospital insurance program are (1) establishing the present cost of services provided to beneficiaries, by type of service, to serve as a projection base; (2) projecting increases in the cost of inpatient hospital services covered under the program; (3) projecting increases in the cost of skilled nursing facility and home health agency services covered under the program; and (4) projecting increases in administrative costs. The major emphasis will be directed toward the cost of inpatient hospital services, which accounts for approximately 95 percent of benefit expenditures.

a. Projection Base

The hospital insurance program is obligated by law, to reimburse institutional providers for the reasonable cost of providing covered services to beneficiaries. In order to establish a suitable base from which to project the future costs of the program, the incurred reasonable

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cost of services provided must be reconstructed for the most recent period for which a reliable determination can be made. To do this, payments to providers must be attributed to dates of service, rather than to payment dates. In addition, the nonrecurring effects of any changes in regulations or administration of the program and of any items affecting only the timing and flow of payments to providers must be eliminated. As a result, the rates of increase in the incurred cost of the program differ from the increases in cash disbursements shown in tables 5 and 6.

The reasonable costs of covered services to beneficiaries are determined on the basis of provider cost reports. Payments to a provider initially are made on an "interim" basis; to adjust interim payments to the level of retroactively determined costs, a series of payments or recoveries is effected through the course of cost settlement with the provider. The net amounts paid to date to providers in the form of cost settlements are known; however, the incomplete data available do not permit a precise determination of the exact amounts incurred during specific periods of time. Due to the time required to obtain cost reports from providers, to verify these reports, and to perform audits (where appropriate), final settlements have lagged behind the liability for such payments or recoveries by as much as several years for some providers. Hence, the final cost of the program has not been completely determined for the most recent years of the program, and some degree of uncertainty remains even for earlier years.

Additional problems are posed by changes in administrative or reimbursement policy which have a substantial effect on either the amount or

incidence of payment. The extent and timing of the incorporation of such changes into interim payment rates and cost settlement amounts cannot be determined precisely.

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

b. Hospital Costs

The hospital insurance program reimburses participating hospitals for the reasonable cost of providing covered services to beneficiaries. Because of its cost reimbursement nature, the program essentially pays for the share of aggregate inpatient hospital costs which is allocated to beneficiaries. Hence, for analysis and projection purposes, trends in program costs can be separated conceptually into (1) increases in aggregate expenditures by hospitals for all patients in producing services of the types covered by the program and (2) changes in the share of these expenditures that are for hospital insurance beneficiaries and hence will be paid by the hospital insurance program.

Increases in aggregate inpatient hospital costs can be analyzed into three broad categories:

(1) Economic factors--the increase in unit costs that would result if hospitals' input cost increases (wage increases for hospital employees and price increases for goods and services purchased by hospitals) were the same as those for the general economy;

(2) Volume of services--the increase in total output of units of service (as measured by hospital admissions); and

(3) Unit input intensity--the increase in total costs due to increased labor and nonlabor input intensity (wage and price increases for hospital inputs which are more rapid than for workers and products in the general economy, plus increases in the number of hospital employees and amount of supplies and equipment used to produce a unit of service).

It has been possible to isolate some of these elements and to identify their roles in previous hospital cost increases. Table A1 shows the values of the principal components of the increases for historical periods for which data are available and the projected trends used in the estimates. The following discussions apply to projections under both alternative II-A and alternative II-B unless otherwise indicated.

Increases in economic factors can be divided into those for payroll and those for nonpayroll expenditures. About half of hospital costs are for direct payroll expenses. This proportion has declined over the years, and a modest continuation in the decline is projected. The weighted averages of the economic factors in table A1 reflect these year-by-year proportions. Increases in average wages in the period 1966-79 generally ranged from

5½ to 7 percent per year, with the exception of somewhat higher increases in 1976, 1978, and 1979. Changes in the CPI during the same period generally varied between 2½ and 7½ percent, with the exception of substantially higher rates of increases in 1974, 1975, and 1979. The increases in both average wages and CPI beyond 1979 are based on assumptions used in projecting experience under the OASDI program.

Increases in volume of services (as measured by admissions) are separated into (1) a part due to population growth and (2) a part due to changes in the average number of admissions per capita. The population projection used in this report is based on assumptions used in projecting experience under the OASDI program. Admission incidence rates increased on average 1.7 percent during the 10-year pre-Medicare period 1956-65; the trend in the period 1966-74 has been relatively consistent, with an average rate of increase of about 1½ percent. Increases in admission incidence in the period 1975-79 averaged less than 1 percent. Preliminary data for 1980 show an increase in admission incidence of 2.0 percent. This level is projected to taper gradually to an ultimate rate of increase that results solely from aging in the general population (i.e., admissions per capita by age and sex ultimately are assumed to be constant, so that the increases in overall average admissions per capita are due solely to changes in the mix of age and sex).

Unit input intensity changes can be analyzed and projected in terms of payroll and nonpayroll components in a manner similar to that for economic factors. The payroll component can be divided further between

unit input intensity increases related to (1) the excess of average wage increases for hospital employees over average wage increases in the general economy and (2) increases in the average number of hospital employees per admissions.

For several years preceding the beginning of the hospital insurance program, average hospital wages and salaries (as derived from data reported by the American Hospital Association) increased at a rate of about 1 percent per year more rapidly than the rate of increase in earnings in OASDI-covered employment. During the 1966-79 period, this differential has fluctuated widely, but has averaged slightly higher than 1 percent. Several factors contributing to this differential can be identified, including (1) growth in third-party reimbursement of hospitals--through Medicare, Medicaid, and comprehensive private plans--which is likely to have weakened hospital resistance to wage demands; (2) increased proportions of highly trained and more highly paid personnel; (3) an increased degree of labor organization and activity; and (4) the fact that hospital employees historically have earned less than similarly skilled workers in other industries. Preliminary data for 1980 shows a relatively high increase in the wage differential of 2.7 percent. However, over the short term, the differential level assumed is generally consistent with experience over the last 11 years but slightly lower due to the relatively high rates of increase projected for average wages in the entire economy. The projection assumes only a modest continuation of the wage level intensity factor over the long run.

The number of hospital employees has continued to increase more rapidly than the number of admissions over the past 20 years. Increases in employee intensity averaged 2 percent per year during the 10 years preceding Medicare. The early years of the program were marked by a substantial surge in employees per admission, followed by a period of only modest increases during the imposition of economic stabilization program controls. Many of the same factors which have affected hospital wage level differentials can be identified also as contributing to the increase in employee intensity; in addition, the increased number and complexity of services provided with a given admission have been significant factors. Preliminary data for 1980 show an increase in employee intensity of about 1.6 percent. The projection assumes, in general, a continuation of this trend, gradually tapering to reflect a lower rate of industry growth than during the earlier period.

Nonlabor unit input intensity is a composite of several heterogeneous components. These include (1) price increases for goods and services that hospitals purchase which do not parallel increases in the CPI, (2) increases in the volume of medical and other supplies purchased and used per admission, and (3) increases in medical equipment and other capital assets employed in the provision of a hospital admission. Due to a lack of data, the nonlabor intensity factor cannot be separated into its component parts and must be treated as a residual. Historically, this factor has increased at a high rate and in an erratic fashion. Increases during the 1956-65 period averaged nearly 5½ percent; these were followed by an irregular series

of increases during the period 1966-72 ranging between 6 and 18 1/2 percent. The second and third years of the controlled period 1972-74 produced increases of only 2 to 3 percent, substantially below even the increases for the 10-year pre-Medicare period. The nonlabor intensity factor declined sharply in 1979, and preliminary data for 1980 indicate that it is at about the 1979 level. The projection assumes a return to a level consistent with experience (excluding years subject to economic stabilization program controls) by 1985, followed by a gradual decline to a level consistent with experience during the decade preceding Medicare. In general, there is an inverse relationship between the level of the CPI and nonlabor intensity factor. Hence, the nonlabor intensity factor under alternative II-A, which has lower CPI projections than alternative II-B, is assumed to reach a higher level than under alternative II-B before declining to a level consistent with the pre-Medicare period.

Aggregate inpatient hospital costs--reflecting the composite of economic factors, volume of service, and unit input intensity--have exhibited a very rapid rate and irregular pattern of increases. Although the pre-Medicare period produced an average rate of increase of approximately 10 1/2 percent, typical rates in subsequent years have tended to vary between 10 and 19 percent.

Changes in the program's share of aggregate hospital costs result from (1) changes in the proportion of the population covered, including changes due to legislation; (2) changes in the relative number and value of services received by beneficiaries; and (3) the effect of administrative actions defining the services eligible for reimbursement and affecting

the level of program payments. Historical and projected changes in the hospital insurance program's share of aggregate inpatient hospital costs appear in table A1, with changes in the proportion of the population covered netted from the other sources. As indicated in the table, the share of hospital costs allocated to beneficiaries has fluctuated somewhat in recent years.

The increases experienced in the proportion of the population covered reflect the more rapid rate of increase in the number of persons aged 65 and over than in the total population of the United States and, beginning in mid-1973, the coverage of certain disabled beneficiaries and persons with end-stage renal disease. Increases in the proportion of the population covered are projected to continue, reflecting a continuation of the demographic shift into categories of the population which are eligible for hospital insurance protection.

Other sources which contribute to changes in the program's share of hospital costs include changes in the relative number and value of services received by beneficiaries and the effect of administrative actions defining covered services and affecting payment levels. Data are not available which would enable a quantitative separation between the two components for historical years. The projection assumes, over the long range, changes in these "other sources" only due to the effects of demographic shifts on the number of services received by beneficiaries as a proportion of the total number of hospital services provided for the entire population. Increases in the average age of beneficiaries

and of persons not covered lead to higher expected levels of usage of hospital services by both groups, the net effect of which is reflected as changes in "other sources."

c. Skilled Nursing Facility and Home Health Agency Costs

Historical experience with the number of days of care covered in skilled nursing facilities under the hospital insurance program has been characterized by wide swings. The number of covered days dropped very sharply in 1970 and continued to decline through 1972. This was the result of strict enforcement of regulations separating skilled nursing from custodial care. Because of the small fraction of nursing home care covered under the program, this reduction primarily reflected the determination that Medicare was not liable for payment rather than reduced usage of services. The 1972 amendments extended benefits to persons who require skilled rehabilitative services regardless of their need for skilled nursing services (the former prerequisite for benefits). This change and subsequent related changes in regulations have resulted in significant increases in the number of services covered by the program. However, recent data has indicated a decline in utilization of these services. Some continuation of this pattern is assumed for the next few years, with only modest increases projected thereafter.

Increases in the average cost per day in skilled nursing facilities under the program are caused principally by increasing payroll costs for nurses and other skilled labor required. Projected rates of increase are assumed to be about the same as increases in general wages

throughout the 25-year projection period. The resulting increases in the cost of skilled nursing facility services are shown in table A2.

Program experience with home health agency costs has shown a generally upward trend. The number of visits has fluctuated somewhat from year to year, with very sharp increases appearing in the last three years. Relatively large increases are assumed for the next few years, followed by a projected pattern of increases similar to that for skilled nursing facilities. Cost per service is assumed to increase at about the same rate as increases in general wages. The resulting home health agency cost increases are shown in table A2.

d. Administrative Expenses

The costs of administering the hospital insurance program have remained relatively small, in comparison with benefit amounts, throughout the history of the program. The ratio of administrative expenses to benefit payments has generally fallen within the range of 1 to 3 percent. The short-range projection of administrative costs is based on estimates of workloads and approved budgets for intermediaries and the Health Care Financing Administration. In the long range, administrative cost increases are based on assumed increases in workloads, primarily due to growth and aging of the population, and on assumed unit cost increases of 2 percent less than the increases in average wages shown in table A1.

2. FINANCING

In order to analyze costs and to evaluate the financing of a program supported by payroll taxes, program costs must be compared on a year-by-

year basis with the taxable payroll which provides the source of income for these costs. Since the vast majority of total program costs relates to insured beneficiaries and since general revenue appropriations and premium payments are available to support the uninsured segments, the remainder of this report will focus on the financing for insured beneficiaries.

a. Taxable Payroll

Taxable payroll increases can be separated into a part due to increases in covered wages and a part due to increases in the number of covered workers. The taxable payroll projection used in this report is based on assumptions used in projecting experience under the OASDI program. Increases in taxable payroll assumed for this report are shown in table A2.

b. Relationship Between Program Costs and Taxable Payroll

The single most meaningful measure of program cost increases, with reference to the financing of the system, is the relationship between program cost increases and taxable payroll increases. If the rates of increase in both series are the same, a level tax rate over time will be adequate to support the program. However, to the extent that program costs increase more rapidly than taxable payroll, a schedule of increasing tax rates will be required to finance the system over time. Table A2 shows the resulting increases in program costs relative to taxable payroll over the 25-year projection period. These relative increases fluctuate somewhat during the 1979-81 period, due to the ad hoc increases in the

maximum earnings subject to taxes. After 1981, the relative increases reduce gradually to an ultimate level of approximately 2.9 and 3.2 percent per year for alternatives II-A and II-B, respectively. The result of these increases over the duration of the projection period is a continued increase in the year-by-year ratios of program expenditures to taxable payroll, as shown in table A3.

3. SENSITIVITY TESTING OF COSTS UNDER ALTERNATIVE ASSUMPTIONS

Over the past 20 years, aggregate inpatient hospital costs for all patients have increased substantially faster than increases in average wages and prices in the general economy. As indicated in table A1, the 10-year period preceding Medicare was characterized by an average 10.4 percent increase in hospital costs, nearly 7½ percent higher than the increase attributable to general wage and price increases. The 1966-71 period experienced substantially higher increases in total hospital costs, averaging 16 percent per year. Of this increase, general economic factors accounted for only 5½ percent; the remaining 10½ percent reflected increases in the volume of services provided and in unit input intensity. Even during the 1972-74 period of economic stabilization program controls, hospital costs increased at an average rate of about 12½ percent, over 5½ percent higher than the amount attributable to increases in average wages and in the CPI. Experience for the fully decontrolled years 1975-79 shows an average annual increase in hospital costs of almost 15 percent, of which about 6½ percent is in excess of increases in general economic factors. Preliminary indications for 1980 show hospital cost increases about 5 percent higher than wages and prices in the general economy.

The sustained, high rates of hospital cost increases in the past raise serious questions concerning future cost increases which might be anticipated. Under conventional economic wisdom, the hospital industry would not be expected to sustain indefinitely the same rate of growth, relative to the general economy, experienced during the last 20 years. The growth pattern has diminished slightly in recent years, but shows no indication of halting. The most reasonable pattern of cost increase assumptions for the future, then, would fall between the two extremes of (1) an indefinite continuation of the past levels of excess of hospital cost increases over general economic factors and (2) a decline in the near term to hospital cost increase levels approaching those for the economy as a whole.

In view of the uncertainty of future cost trends, projected costs for the hospital insurance program have been prepared under four alternative sets of assumptions. A summary of the assumptions and results is shown in table A3. The sets of assumptions labeled "Alternative II-A and Alternative II-B" form the basis for the detailed discussion of hospital cost trends and resulting program costs presented throughout this report. They represent intermediate sets of cost increase assumptions, compared with the lower cost and more optimistic alternative I and the higher cost and less optimistic alternative III. Increases in the economic factors (average wages and CPI) for the four alternatives are consistent with those underlying the OASDI report.

As noted earlier, the single most meaningful measure of hospital insurance program cost increases, with reference to the financing of the system, is the relationship between program cost increases and taxable payroll increases.

The extent to which program cost increases exceed increases in taxable payroll will determine how steeply tax rates must increase to finance the system over time.

Under both sets of intermediate assumptions, program costs are projected ultimately to increase approximately 3 percent faster than increases in taxable payroll. Program expenditures, which are currently about 2 percent of taxable payroll, increase to a level of about 5 and 5 1/2 percent. by the year 2000 under alternatives II-A and II-B, respectively. Hence, if all of the projection assumptions are realized over time, hospital insurance tax rates by the end of the 25-year period will have to be substantially higher than those provided in the present financing schedule (2.9 percent of taxable payroll, for 1986 and later).

Alternatives I and III contain assumptions which result in program costs increasing, relative to taxable payroll increases, approximately 2 percent less and 2 percent more rapidly, respectively, than the results under both sets of intermediate assumptions. Under alternative I, program costs ultimately increase 1.3 percent more rapidly than increases in taxable payroll. By the year 2000, program expenditures under this alternative would be about 3.8 percent of taxable payroll. Hence, hospital insurance tax rates required by the end of the valuation period would be greater than those currently scheduled, even under the optimistic alternative I assumptions. Under alternative III, program costs ultimately increase 5.2 percent more rapidly than increases in taxable payroll. The result of this differential is a level of program expenditures in the year 2000 which is 7.7 percent of taxable payroll, about 4.8 percent higher than the 2.9 percent tax rate currently scheduled.

Table A1.--COMPONENTS OF HISTORICAL AND PROJECTED INCREASES IN HOSPITAL COSTS [1]
(Percent)

Calendar year	Economic Factors: Average wages	Economic Factors: CPI	Economic Factors: Weighted average [3]	Volume of Services [2]: Total population	Volume of Services [2]: Admission incidence	Unit Input Intensity [2]: Wage level	Unit Input Intensity [2]: Employee intensity	Unit Input Intensity [2]: Nonlabor intensity	Unit Input Intensity [2]: Weighted average [3]	Aggregate inpatient hospital costs [4]	HI Share: Proportion of population	HI Share: Other sources	HI inpatient hospital costs
Historical Data:													
1956-65	3.7%	1.6%	3.0%	1.6%	1.7%	1.0%	2.0%	5.3%	4.1%	10.4%			
1966	5.5	3.0	4.6	1.1	0.5	-4.6	8.2	8.4	5.5	11.7			
1967	5.7	2.8	4.7	1.1	-0.7	3.4	6.2	18.4	13.5	18.6			
1968	6.4	4.2	5.7	1.0	0.1	3.3	4.4	11.6	9.7	16.5	0.6%	7.5%	24.6%
1969	6.6	5.4	6.6	1.0	2.6	2.6	3.5	9.9	8.2	18.4	0.5	-3.7	15.2
1970	5.4	5.9	6.0	1.1	2.4	4.5	1.3	8.3	7.3	16.8	0.5	-5.3	12.0
1971	6.6	4.3	5.9	1.0	2.0	3.5	-0.1	6.1	4.8	13.7	0.6	-0.8	13.5
1972	7.0	3.3	5.6	0.9	1.2	1.1	0.2	11.3	5.8	13.5	0.7	-1.3	10.9
1973	6.5	6.2	6.6	0.7	2.4	-1.8	0.0	3.1	0.4	10.1	5.1	1.0	16.4
1974	6.6	11.0	9.0	0.7	3.0	-0.8	2.3	2.0	1.8	14.5	6.0	3.1	23.6
1975	6.3	9.1	8.0	0.7	1.0	4.2	2.5	10.5	9.0	18.7	2.2	1.6	22.5
1976	8.4	5.8	7.5	0.7	0.9	0.6	1.5	10.9	6.6	15.7	2.2	1.1	19.0
1977	7.1	6.5	7.1	0.8	0.0	-0.1	2.9	8.5	5.8	13.7	2.2	2.2	18.1
1978	8.1	7.6	8.1	0.8	-0.1	-0.1	2.3	5.4	3.9	12.7	1.9	0.1	14.7
1979	8.4	11.1	10.0	0.9	0.8	0.1	1.3	0.5	1.0	12.7	1.6	1.9	16.2
Projection:													
Alternative II-A													
1980	8.5	13.5	11.5	0.9	2.0	2.7	1.6	0.3	2.4	16.8	1.1	2.8	20.7
1985	7.1	4.7	6.0	0.9	0.7	0.5	1.0	8.0	5.3	12.9	1.5	0.3	14.7
1990	5.1	3.0	4.0	0.8	0.4	0.5	1.0	7.0	4.8	10.0	1.3	0.3	11.6
1995	5.0	3.0	3.9	0.7	0.3	0.5	0.5	6.0	4.2	9.1	1.0	0.2	10.3
2000	5.0	3.0	3.8	0.6	0.3	0.5	0.5	5.0	3.7	8.4	0.5	0.0	8.9
2005	5.0	3.0	3.8	0.6	0.3	0.5	0.5	5.0	3.7	8.4	0.6	-0.2	8.8
Alternative II-B													
1980	8.5	13.5	11.5	0.9	2.0	2.7	1.6	0.3	2.4	16.8	1.1	2.8	20.7
1985	8.1	7.4	8.1	0.9	0.7	0.5	1.0	7.0	4.7	14.4	1.5	0.3	16.2
1990	5.4	4.0	4.7	0.8	0.4	0.5	1.0	7.0	5.0	10.9	1.3	0.4	12.6
1995	5.5	4.0	4.7	0.7	0.3	0.5	0.5	6.0	4.3	10.0	1.0	0.2	11.2
2000	5.5	4.0	4.6	0.6	0.3	0.5	0.5	5.0	3.8	9.3	.5	0.0	9.8
2005	5.5	4.0	4.6	0.6	0.3	0.5	0.5	5.0	3.8	9.3	.6	-0.2	9.7

1/ Percent increase in year indicated over previous year.

2/ Based on data from the American Hospital Association through 1979.

3/ Weighted average of the individual components, with adjustments for the effects of compounding. The weightings are based on the proportions of aggregate inpatient hospital costs which are for payroll and for nonpayroll expenses. The adjustments for the effects of compounding are necessary to compensate for the fact that the various components actually are multiplicative, rather than additive as illustrated in this table.

4/ Includes hospital costs for all patients.

Table A2.--RELATIONSHIP BETWEEN INCREASES IN TOTAL HI PROGRAM COSTS AND INCREASES IN TAXABLE PAYROLL 1/
(Percent)

Calendar year	Inpatient hospital 2/	Skilled nursing facility 3/	Home health agency 3/	Alcoholic detoxification facility 3/	Weighted average	HI administrative costs 3/	Total HI program costs 3/	HI taxable payroll	Ratio of costs to payroll 4/
Alternative II-A									
1980	21.3	8.6	24.9	-	21.2	13.8	21.0	9.5	10.5
1985	15.0	10.3	11.5	8.9	14.8	8.8	14.8	9.4	4.9
1990	11.7	7.8	8.1	11.1	11.6	6.7	11.5	6.3	4.9
1995	10.4	7.4	7.6	10.2	10.3	6.0	10.2	5.9	4.1
2000	8.9	6.6	6.9	8.7	8.8	5.4	8.8	5.9	2.8
2005	8.8	6.3	6.6	9.0	8.8	5.4	8.7	5.7	2.9
Alternative II-B									
1980	21.3	8.6	24.9	-	21.2	13.8	21.0	9.5	10.5
1985	16.6	11.5	12.5	9.8	16.4	9.9	16.3	10.2	5.5
1990	12.7	8.1	8.4	12.4	12.6	7.1	12.5	6.8	5.3
1995	11.3	7.9	8.0	10.4	11.2	6.5	11.1	6.4	4.4
2000	9.8	7.2	7.5	9.8	9.7	5.9	9.7	6.4	3.2
2005	9.7	6.8	7.1	9.8	9.7	6.0	9.7	6.2	3.2

1/ Percent increase in year indicated over previous year.

2/ This column differs slightly from the last column of table A1, since table A1 includes all persons eligible for HI protection while this table excludes noninsured persons.

3/ Costs attributable to insured beneficiaries only. Benefits and administrative costs for noninsured persons are financed through general revenue transfers and premium payments rather than through payroll taxes.

4/ Percent increase in the ratio of program expenditures to taxable payroll. This is equivalent to the differential between the increase in program costs and the increase in taxable payroll.

NOTE: Taxable payroll is adjusted to take into account the lower contribution rates on self-employment income, on tips, and on mulitple-employer "excess wages" as compared with the combined employer-employee rate.

Table A3.--SUMMARY OF ALTERNATIVE COST PROJECTIONS FOR THE HOSPITAL INSURANCE PROGRAM
(percent)

Calendar year	Increases in aggregate inpatient hospital costs 1/				Changes in the relationship between costs and payroll 2/			Expenditures as a percent of taxable payroll
	Average wages	CPI	Volume & intensity	Total	Program costs 3/	Taxable payroll	Ratio of costs to payroll	
				ALTERNATIVE I				
1980	8.5	13.5	5.3	16.8	21.0	9.5	10.5	2.19
1985	6.8	4.1	5.7	11.4	13.2	9.4	3.5	2.52
1990	4.6	2.0	3.9	7.1	8.7	5.2	3.4	2.97
1995	4.5	2.0	3.7	6.8	8.0	5.4	2.5	3.47
2000	4.5	2.0	3.3	6.2	6.7	5.4	1.3	3.80
2005	4.5	2.0	3.4	6.3	6.7	5.3	1.3	4.05
				ALTERNATIVE II-A				
1980	8.5	13.5	5.3	16.8	21.0	9.5	10.5	2.19
1985	7.1	4.7	6.9	12.9	14.8	9.4	4.9	2.67
1990	5.1	3.0	6.0	10.0	11.5	6.3	4.9	3.39
1995	5.0	3.0	5.2	9.1	10.2	5.9	4.1	4.27
2000	5.0	3.0	4.6	8.4	8.8	5.9	2.8	5.04
2005	5.0	3.0	4.6	8.4	8.7	5.7	2.9	5.80
				ALTERNATIVE II-B				
1980	8.5	13.5	5.3	16.8	21.0	9.5	10.5	2.19
1985	8.1	7.4	6.3	14.4	16.3	10.2	5.5	2.73
1990	5.4	4.0	6.2	10.9	12.5	6.8	5.3	3.55
1995	5.5	4.0	5.3	10.0	11.1	6.4	4.4	4.55
2000	5.5	4.0	4.7	9.3	9.7	6.4	3.2	5.44
2005	5.5	4.0	4.7	9.3	9.7	6.2	3.2	6.38
				ALTERNATIVE III				
1980	8.5	13.5	5.3	16.8	21.0	9.5	10.5	2.19
1985	10.1	9.7	8.5	18.8	20.7	12.3	7.5	2.92
1990	8.2	7.4	7.9	15.8	17.5	9.6	7.3	4.16
1995	6.4	5.4	7.0	12.9	14.0	7.3	6.3	5.86
2000	6.0	5.0	6.5	11.9	12.3	6.9	5.1	7.70
2005	6.0	5.0	6.5	11.9	12.2	6.7	5.2	9.90

1/ Percent increase in the year indicated over the previous year. Includes hospital costs for all patients.

2/ Percent increase in the year indicated over the previous year.

3/ Includes cost attributable to insured beneficiaries only.

NOTE: Taxable payroll is adjusted to take into account the lower contribution rates on self-employment income, on tips, and on multiple-employer "excess wages" as compared with the combined employer-employee rate.

APPENDIX B

DETERMINATION AND ANNOUNCEMENT OF THE INPATIENT HOSPITAL DEDUCTIBLE FOR 1981*

Under the authority in Section 1813(b)(2) of the Social Security Act (42 U.S.C. 1395e(b)(2)), I have determined that the Medicare inpatient hospital deductible for 1981 shall be $204.

Section 1813 provides for an inpatient hospital deductible and certain coinsurance amounts to be deducted from the amount payable by Medicare for inpatient hospital services and post-hospital extended care services furnished an individual during a spell of illness. Section 1813(b)(2) requires the Secretary of HHS to publish, between July 1 and October 1 of each year, the amount of the inpatient hospital deductible applicable to spells of illness beginning in the following calendar year.

Because the coinsurance amounts in Section 1813 are fixed percentages of the inpatient hospital deductible for services furnished in the same spell of illness, the increase in the deductible has the effect of also increasing the amount of coinsurance the Medicare beneficiary must pay. Thus, for spells of illness beginning in 1981, the daily coinsurance for the 61st through 90th days of hospitalization (1/4 of the inpatient hospital deductible) will be $51; the daily coinsurance for lifetime reserve days (1/2 of the inpatient hospital deductible) will be $102; and the daily coinsurance for the 21st through the 100th days of post-hospital extended care services in a skilled nursing facility (1/8 of the inpatient hospital deductible) will be $25.50.

*This statement was published in the Federal Register for October 1, 1980 (Vol. 45, No. 192, p. 65042).

Under the formula in the law, the deductible for calendar year 1981 must be equal to $40 multiplied by the ratio of (1) the current average per diem rate for inpatient hospital services for calendar year 1979 to (2) the average per diem rate for such services in 1966. The amount so determined is rounded to the nearest multiple of $4. The average per diem rates are based on the amounts paid to participating hospitals by Medicare for inpatient services to insured individuals, plus the deductible and coinsurance amounts.

The average per diem rate for a calendar year is computed from the inpatient hospital bills for all beneficiaries. Each bill shows the number of inpatient days of care and the interim cost (the sum of interim reimbursement, deductible, and coinsurance). The data are summarized for each year, and an average interim per diem rate computed that accurately reflects interim costs on an accrual basis.

In order to reflect the change in the average per diem hospital cost under the program properly, the average interim cost must be adjusted to show the effect of final cost settlements made with each participating hospital after the end of its accounting year. The final settlements adjust the interim payment to the hospital to the actual full cost of providing covered services to beneficiaries. To the extent that the ratio of final cost to interim cost for 1979 differs from the ratio of final cost to interim cost for 1966, the increase in average interim per diem costs will not coincide with the increase in actual cost that has occurred.

The current average interim per diem rate for inpatient hospital services for calendar year 1979, based on tabulated interim costs, is $195.63; the corresponding amount for 1966 is $37.92. The averages are based on approximately 96 million days of hospitalization in 1979 and 30 million days in 1966 (last 6 months of the year). The ratio of final cost to interim cost is approximately 1.035 for 1979 and 1.055 for 1966. Thus, the inpatient hospital deductible is $40 x (195.63 x 1.035)/(37.92 x 1.055) = $202.45, which is rounded to $204.

Dated: September 26, 1980

Patricia Roberts Harris,
Secretary

APPENDIX C

DETERMINATION AND ANNOUNCEMENT OF THE HOSPITAL INSURANCE MONTHLY PREMIUM RATE FOR THE UNINSURED AGED, FOR THE 12-MONTH PERIOD BEGINNING JULY 1, 1981*

Under the authority in Section 1818(d)(2) of the Social Security Act (42 U.S.C. 1395i-2(d)(2)), I have determined that the monthly Medicare hospital insurance premium for the uninsured aged for the 12 months beginning July 1, 1981, is $89.

Section 1818 of the Social Security Act provides for voluntary enrollment in the hospital insurance program (Part A of Medicare), subject to payment of a monthly premium, of certain persons age 65 and older who are uninsured for social security or railroad retirement benefits and do not otherwise meet the requirements for entitlement to hospital insurance. (Persons insured under the Social Security or Railroad Retirement Acts need not pay premiums for hospital insurance.)

Section 1818(d)(2) of the Act requires the Secretary to determine and publish, during the last quarter of each calendar year, the amount of the monthly Part A premium for voluntary enrollment for the 12-month period beginning with the following July 1. The formula specified in this section also requires that, for the period beginning July 1, 1981, the premium must be $33 multiplied by the ratio of (1) the 1981 inpatient hospital deductible to (2) the 1973 inpatient hospital deductible, rounded to the nearest multiple of $1 or, if midway between multiples of $1, to the next higher multiple of $1.

*This statement was published in the Federal Register for December 24, 1980 (Vol. 45, No. 249, p. 85160).

Under Section 1813(b)(2) of the Act, 1981 inpatient hospital deductible was determined to be $204. (See 45 FR 65042, October 1, 1980.) The 1973 deductible was actuarially determined to be $76, although the 1973 deductible was actually promulgated to be only $72, to comply with a ruling of the Cost of Living Council. (See 37 FR 21452, October 11, 1972.) The monthly premium for the 12-month period beginning July 1, 1981, has been calculated using the $76 deductible for 1973, since this more closely satisfies the intent of the law. Thus, the monthly hospital insurance premium is $33 x (204/76) = $88.58, which is rounded to $89.

Dated: December 19, 1980.

Patricia Roberts Harris,
Secretary

APPENDIX D

STATEMENT OF ACTUARIAL OPINION

It is my opinion that (1) the methodology used herein in evaluating the actuarial status of the Federal Hospital Insurance Trust Fund is generally accepted within the actuarial profession, and (2) the assumptions used and the resulting cost estimates are in the aggregate reasonable for the purpose for which they were intended, taking into account the experience and expectations of the program.

Roland E. King
Acting Director, Office of
Financial and Actuarial Analysis
Health Care Financing Administration

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SUMMARY OF THE 1981 ANNUAL REPORTS OF THE SOCIAL SECURITY BOARDS OF TRUSTEES

July 6, 1981

Prepared by
Social Security Administration
and
Health Care Financing Administration

Contents

Highlights

During calendar year 1980, 115 million workers paid Social Security payroll taxes. Monthly Social Security benefits were being paid to 35 million beneficiaries at year-end. About 95 percent of all persons aged 65 or over were protected by Medicare.

The funds held for retirement, survivors, and disability benefits declined by $3.8 billion during 1980, to about $26 billion at year-end, while the fund for Medicare Hospital Insurance increased by $0.5 billion, to about $14 billion.

The short-range financing of the retirement and survivors benefit program must be strengthened very soon, so that benefits can be paid throughout 1982 and beyond.

Hospital Insurance taxes are set at about the levels needed for that program during the early 1980's, but later on these taxes will be too low if the assumptions underlying the estimates are realized.

In approximately 30 years, the aged population will have grown significantly, both in total number and relative to the number of covered workers. While these numbers cannot be forecast precisely, reasonable estimates can be made based on the population already born. To finance the benefits scheduled over the long range, much more income to these programs will be needed from taxes unless benefit outlays are substantially reduced.

Action to remedy the short-range financial crisis by lowering the benefit outgo could well carry over to the long range and solve its problems as well.

SUMMARY OF THE 1981 ANNUAL REPORTS OF THE SOCIAL SECURITY BOARDS OF TRUSTEES

Introduction

Four Social Security programs provide basic financial security to American workers and their families:

(1) Old-Age and Survivors Insurance (OASI) pays monthly cash benefits after a worker retires or dies.

(2) Disability Insurance (DI) pays monthly cash benefits after a worker becomes disabled. (OASI and DI together are referred to as OASDI.)

(3) Hospital Insurance (HI, or Medicare Part A) pays for hospital care of those aged 65 and over and of the long-term disabled.

(4) Supplementary Medical Insurance (SMI, or Medicare Part B) pays for doctor bills and other medical expenses of those aged 65 and over and of the long-term disabled.

These programs are financed essentially on a pay-as-you-go basis. Taxes paid by current workers are used to pay benefits to current beneficiaries. However, Social Security does maintain trust funds that provide small reserves against fluctuations. These trust funds hold all of the income not needed currently to pay benefits and expenses. Social Security funds may not be used for any other purpose.

The Secretaries of Treasury, Labor, and Health and Human Services serve as trustees of the Social Security trust funds. They report annually to the Congress on the condition of each fund and on projected future results.

The 1981 annual reports for the four trust funds are summarized here. Copies of the complete Trustees Report for OASDI can be obtained without charge from the Social Security Administration, Office of Public Inquiries, 4100 Annex, Baltimore, Maryland 21235. The HI and SMI Trustees Reports are available from the Health Care Financing Administration, Office of Public Affairs, Room 313H, Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C. 20201.

Payroll taxes from employees, their employers, and the self-employed go into the trust funds to pay for OASI, DI, and HI. These trust funds pay benefits to current beneficiaries. SMI is financed differently and is discussed separately in Appendix A, so that this summary can focus on the three payroll-tax supported programs.

Table 1 shows the payroll tax rates for employers and employees, as established by law. Taxes at these rates are paid on each worker's earnings up to $29,700 in 1981. In future years, the Social Security earnings base will rise as average wages increase.

Table 1--Payroll Tax Schedule

Calendar Year	Contribution Rates (Percent of Taxable Earnings) Payable by Employers and Employees, Each			
	OASI	DI	HI	Total
1981	4.70%	0.65%	1.30%	6.65%
1982-84	4.575	0.825	1.30	6.70
1985	4.75	0.95	1.35	7.05
1986-89	4.75	0.95	1.45	7.15
1990 & later	5.10	1.10	1.45	7.65

For the self-employed, the OASDI tax rates are about 1½ times the rates for employees, and the HI tax rates are the same as for employees.

It is intended that the income for each program will closely match outgo in most years. When income exceeds outgo, the excess serves to increase the trust funds. When outgo exceeds income, the trust funds are drawn down. Thus, the trust funds serve as a contingency reserve to absorb temporary fluctuations in income and outgo. The trust funds are invested in U.S. government bonds, notes, and other securities, bearing rates of interest similar to those for long-term securities issued to the general public.

Results for 1980

During 1980, 115 million workers contributed to the OASDI and HI programs through payroll taxes. At the end of 1980, 35 million OASDI beneficiaries were receiving monthly benefit payments, and 95 percent of the population over age 65 was covered under HI.

Table 2 presents the cash income, outgo, and changes in assets during 1980 for the three programs, with 1979 data for comparative purposes.

Table 2--Results of Financial Operations During 1980
(Billions)

	OASI	DI	HI	Total
Trust Fund Assets on January 1, 1980.....	$24.7	$5.6	$13.2	$ 43.5
Income in 1980:				
Payroll Taxes.....	103.5	13.3	23.8	140.6
Premiums From Participants.....	—	—	*	*
General Fund of Treasury.....	0.5	0.1	0.9	1.5
Interest.....	1.8	0.5	1.1	3.4
Transfer from Railroad Retirement Account.....	—	—	0.2	0.2
Total Income.....	105.8	13.9	26.1	145.8
Outgo in 1980:				
Benefit Payments.....	105.1	15.4	25.1	145.6
Administration, Including Rehabilitation.....	1.2	0.4	0.5	2.1
Transfer to Railroad Retirement Account.	1.4	*	—	1.4
Total Outgo.....	107.7	15.9	25.6	149.1
Net Change in Trust Fund in 1980.....	-1.8	-2.0	0.5	-3.3
Trust Fund Assets on December 31, 1980.....	22.8	3.6	13.7	40.2
Comparative Results for 1979				
Income in 1979.....	90.3	15.6	22.8	128.7
Outgo in 1979.....	93.1	14.2	21.1	128.4
Net Change in Trust Fund in 1979.....	-2.9	1.4	1.8	0.3

* Less than $50 million

Note: Components may not add to totals due to rounding.

In 1980, income to the three trust funds was $145.8 billion, while outgo was $149.1 billion. As a result, the three trust funds together decreased by $3.3 billion. The OASI and DI Trust Funds dropped by $3.8 billion, while the HI Trust Fund rose by $0.5 billion.

Administrative expenses represented about 1.3 percent of benefit payments for OASDI and 2.0 percent for HI--1.5 percent for the three programs combined. This combined expense rate was 1.6 percent in 1979.

Compared to the prior year's figures, income to the three funds in 1980 rose by 13 percent, but outgo was up by 16 percent. During 1980, as in 1979, there were unanticipated negative developments in the economy, including high unemployment and inflation, with prices rising more rapidly than wages. Thus, Social Security cash benefits (which are adjusted for changes in the Consumer Price Index) went up faster than Social Security revenues (which are based on covered payrolls). Medicare Hospital Insurance expenditures also rose faster than revenues because of rapidly increasing health care costs.

Actuarial Cost Projections

As required by law, the annual Trustees Reports contain projections on each fund's estimated financial operations and status. The estimates given here are on a calendar-year basis (and are for the programs as they are now structured). They extend over the next 75 years for OASDI and 25 years for HI. The estimated costs after the first few years are presented as percentages of taxable payroll, so that expenditures can be compared directly with the payroll tax rates. A precise prediction of the future is not possible, even in the short range. Both short- and long-range estimates are made using reasonable assumptions to indicate the trend and general range of future costs.

Assumptions Used

Future OASDI income and outgo will depend on mortality, fertility, unemployment, inflation, and other economic and demographic factors. Medicare costs will also depend on how often health care services are used and how much these services cost.

The OASDI and HI cost projections are prepared using five alternative sets of assumptions regarding these economic and demographic factors, referred to as "optimistic", "intermediate-A", "intermediate-B", "pesssimistic", and "worst-case" assumptions. Because recent economic performance has been erratic, the economic assumptions now allow for more possible variation than before, including both an A and B set of intermediate economic assumptions, and also a "worst-case" set of short-range economic assumptions.

Intermediate A assumes future economic performance resembling the experience in recent periods of more robust economic growth, such as would

result from policies aimed at stimulating growth and lowering inflation; this presentation shows the favorable effect on the trust funds of an improved economy. Intermediate B assumes the adoption of policies that would yield less economic growth. The set of assumptions characterized as "worst-case" covers 1981-86 and is more pessimistic than the other four sets (although even more unfavorable assumptions could be designed). The "worst-case" assumptions were also used to test the adequacy of the short-range financing under the Administration's recent Social Security proposals.

Appendix B shows selected values of several of the assumptions used in the five basic projections.

Measures of Actuarial Status

In analyzing the financial status of the program, several measures of actuarial status are commonly used.

Fund ratio is the amount in the trust fund at the beginning of a year expressed as a percentage of that year's expenditures. For example, a fund ratio of 25 percent means that the amount in the fund is one-fourth of annual outgo (or enough to pay benefits for about three months in the absence of any income). At the beginning of 1981, the fund ratios for OASI, DI, and HI were 18, 20, and 46 percent, respectively.

Several factors should be considered in determining appropriate fund ratios, as follows:

(1) The OASI and DI benefit payments go out early each month, but the income from payroll taxes is spread over the entire month. If the OASI or DI Trust Funds drop to a point where the balance on hand

at the beginning of a month is too low to pay the benefits, the benefit checks could not be sent out in a timely manner. In practice, a fund ratio of about 12 to 14 percent would usually mean that this point is near, and that action must be taken very soon to strengthen the financing.

(2) HI benefit payments do not have this cash-flow pattern, but they do fluctuate noticeably from month to month.

(3) Payroll-tax receipts to the trust funds also fluctuate during the year (as do other items of income and outgo).

(4) Unforeseen changes in the economy may cause the trust funds to decrease unexpectedly. Each trust fund should have sufficient assets to avoid the need for hasty action to assure the payment of benefits.

Year-by-year expenditures as a percentage of taxable payroll is another useful measure. These percentages can be used to establish tax rate schedules that approximately support pay-as-you-go financing.

Actuarial balance is the average difference between the scheduled tax rate and the projected annual outgo over a given period. The actuarial balance is the usual measure of financial status over periods of 25 years or more. The OASDI system is said to be in close actuarial balance over the long-range period if the average scheduled tax rates are between 95 and 105 percent of the average estimated expenditures as a percentage of taxable payroll.

Short-Range Financing (1981-85)

The Trustees emphasize that there is an urgent need to strengthen the financing of the Social Security system in the short range. Without any

changes in current law, the OASI Trust Fund will become unable to pay benefits by late 1982. Even if the three payroll-tax financed trust funds were allowed to borrow from one another, their combined assets would decline significantly during the next 5 years. In fact, their combined assets would barely suffice under the two more-optimistic sets of assumptions. Under the three less-favorable projections, combined assets of these trust funds would become depleted within a few years.

* * *

Projections over the next 5 years allow Congress and the Administration to monitor and adjust income to the programs. In this short-range picture, the numbers of persons receiving OASDI benefits can be forecast closely. However, changes in the national economy can have major effects on outgo and income, and are difficult to predict. Past economic downturns that were more severe than anticipated have led to the current financial crisis.

Table 3 indicates year-by-year projections of OASDI fund ratios through 1985, under all four sets of long-range assumptions and under the so-called "worst-case" economic assumptions, which prudently served as the basis for the Administration's recommendations to solve the short-range and long-range financing crisis of the OASDI program.

The OASI Trust Fund would become unable to pay timely benefits by late 1982 under any of the projections. Combining the DI Trust Fund with the OASI Trust Fund would not postpone the latter's exhaustion by more than a few months. Even combining all three trust funds would provide a slim margin at best. Under the three less-favorable projections, the three combined trust funds would become exhausted before the end of 1985.

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Table 3--Fund Ratios Projected to 1985

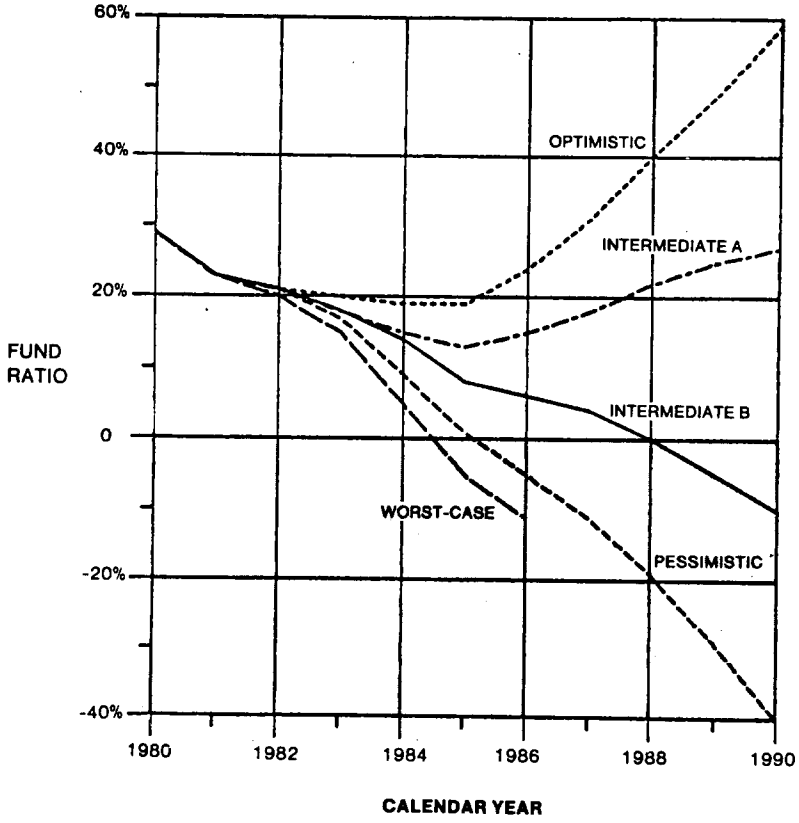
	Fund at January 1 as a Percent of Outgo During Year					
	1980	1981	1982	1983	1984	1985
OASI:						
Optimistic Assumptions.....	23%	18%	14%*	6%*	-1%*	-8%*
Intermediate A Assumptions.....	23	18	13*	5*	-4*	-13*
Intermediate B Assumptions.....	23	18	13*	4*	-5*	-16*
Pessimistic Assumptions.....	23	18	13*	4*	-9*	-22*
"Worst-Case" Assumptions.....	23	18	13*	2*	-13*	-29*
OASI and DI Combined:						
Optimistic Assumptions.....	25	18	14	9*	6*	4*
Intermediate A Assumptions.....	25	18	13	8*	3*	-1*
Intermediate B Assumptions.....	25	18	13*	7*	2*	-5*
Pessimistic Assumptions.....	25	18	13*	7*	-2*	-12*
"Worst-Case" Assumptions.....	25	18	13*	5*	-7*	-18*
OASI, DI, and HI Combined:						
Optimistic Assumptions.....	29	23	21	20	19	19
Intermediate A Assumptions.....	29	23	21	18	15	13
Intermediate B Assumptions.....	29	23	21	18	14	8*
Pessimistic Assumptions.....	29	23	21	17	9*	1*
"Worst-Case" Assumptions.....	29	23	20	15	5*	-5*

* Under present law, the program would be unable to pay timely benefits during this year because financing is projected to be inadequate.

Chart A shows the projected fund ratios through 1990 for these three funds combined. Even on this basis, which assumes interfund borrowing (which would require legislation), there is a need to strengthen the short-range financing. The combined funds would barely get through the early 1980's under the two more-favorable sets of assumptions. Under the other three less-favorable projections, the combined funds would be used up within a few years. Thus, any reallocation of the tax rates or borrowing among the trust funds would not result in adequate short-range financing under adverse conditions.

Chart A

ESTIMATED FUND RATIOS UNDER COMBINED OASI, DI, AND HI PROGRAMS



Long-Range Financing (1981-2055)

Over the next 75 years, the projections indicate a need for substantial changes in the long-range financing of OASDI. Action is urgently needed to solve the financing problems during the 1980's (as discussed earlier). Later on, the outlook for the OASDI Trust Funds improves substantially, after the tax increases that would take effect during 1985-90, and remains favorable during the first 25-year period. During the following 25 years, however, OASDI tax rates are projected to become inadequate, as expenditures rise (due to a larger beneficiary population), while tax rates remain level under current law. During the final 25 years of the 75-year projection period, there is a substantial deficit projected under all but the most optimistic assumptions. Thus, the long-range financing of OASDI needs to be strengthened.

HI income is projected to cover expenditures during the early 1980's. But later in the 25-year period, HI financing is estimated to deteriorate. Although the HI Trust Fund is not in imminent danger, the Board of Trustees recommends that Congress should investigate ways of strengthening its financing.

* * *

Long-range cost estimates for OASDI over the next 75 years, although sensitive to variations in the assumptions, give the best indication of the trend and general range of the program's cost. HI projections customarily do not go beyond 25 years, because of the high degree of uncertainty about the trend of future hospital costs relative to the rest of the economy.

Several important demographic trends are anticipated in the next 75 years which would sharply raise the proportion of the aged in the population.

(1) After the turn of the century, rapid growth is expected in the aged population because of the large number of persons born shortly after World War II.

(2) Projected improvements in mortality also would increase the numbers of aged persons.

(3) At the same time, low birth rates would hold down the number of young people.

Chart B shows the long-range trend in the number of OASDI beneficiaries per 100 covered workers, based on the three sets of demographic assumptions. (It is important to note that "beneficiaries" includes not only retired workers, but also disabled workers, spouses, children, and survivor beneficiaries.) This ratio has gone up from zero in 1940 to 31 currently. It is estimated to rise to a range of 40 to 70 by the middle of the next century. Because most of the beneficiaries during the next 75 years have already been born, their numbers are projected mainly from the present population. The numbers of workers involved in these projections, however, depend on future birth rates, which are subject to more variability.

Chart C shows the trend in the estimated annual OASDI outgo as a percentage of taxable payroll under each of the four sets of long-range assumptions during the next 75 years. Also shown for comparative purposes are the scheduled OASDI tax rates. Under each set of assumptions, the estimated outgo as a percentage of taxable payroll increases rapidly after the turn of the century. Under the intermediate and optimistic sets of

NUMBER OF OASDI BENEFICIARIES PER 100 WORKERS

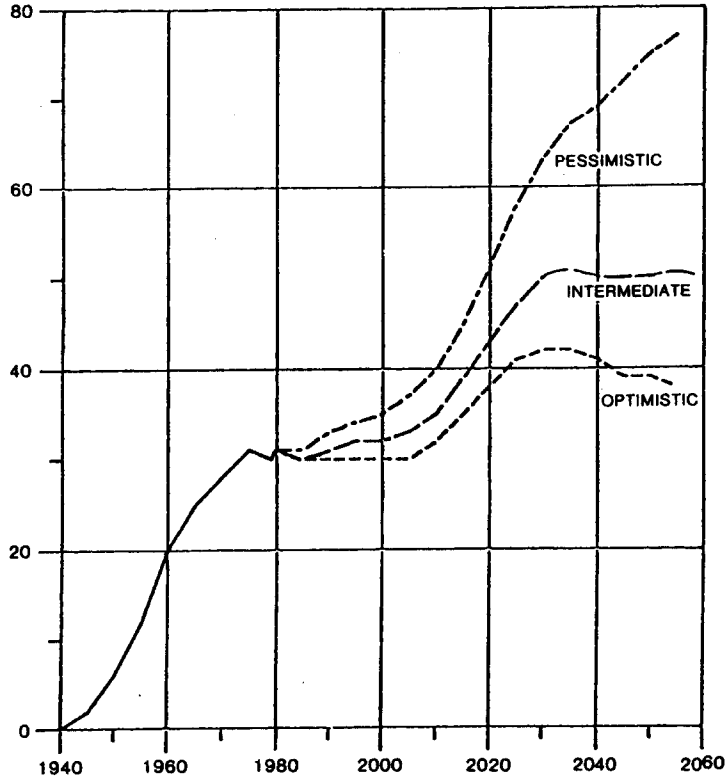
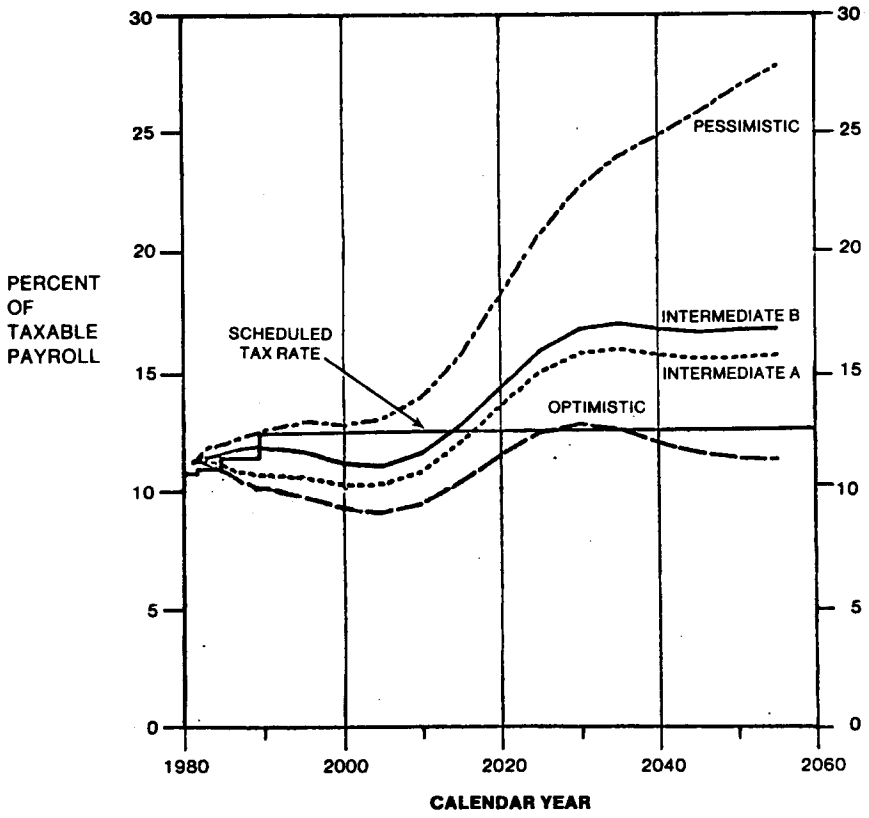


Chart C

ESTIMATED OASDI OUTGO AND TAX RATES, 1981 - 2055



assumptions, the outgo in relation to taxable payroll peaks around 2030, while under the pessimistic assumptions, the outgo is still increasing at the end of the valuation period. These projections indicate the need for action to restore the OASDI system to financial health over the long range.

Table 4 compares the estimated average OASDI expenditures in relation to taxable payroll and the tax rates over the next 75 years under the four alternative sets of long-range assumptions. The estimated average annual tax income for the entire 75-year projection period falls below the estimated average annual outgo for the period by 0.93 percent of taxable payroll under Intermediate A and 1.82 percent under Intermediate B.

Table 4--Estimated Average OASDI Tax Rates, Expenditures, and Actuarial Balance (Percent of Taxable Payroll)

	25-Year Averages			75-Year Average
	1981-2005	2006-2030	2031-2055	1981-2055
Average Scheduled Tax Rate (Combined Employer-Employee Rate)	11.94%	12.40%	12.40%	12.25%
Estimated Average Expenditures:				
Optimistic Assumptions.....	9.99	11.07	11.93	10.99
Intermediate-A Assumptions.....	10.67	13.07	15.79	13.17
Intermediate-B Assumptions.....	11.51	13.87	16.81	14.07
Pessimistic Assumptions.....	12.55	17.50	25.43	18.50
Difference (Actuarial Balance):				
Optimistic Assumptions.....	1.95	1.33	0.48	1.25
Intermediate-A Assumptions.....	1.27	-0.67	-3.39	-0.93
Intermediate-B Assumptions.....	0.43	-1.47	-4.41	-1.82
Pessimistic Assumptions.....	-0.61	-5.10	-13.03	-6.25

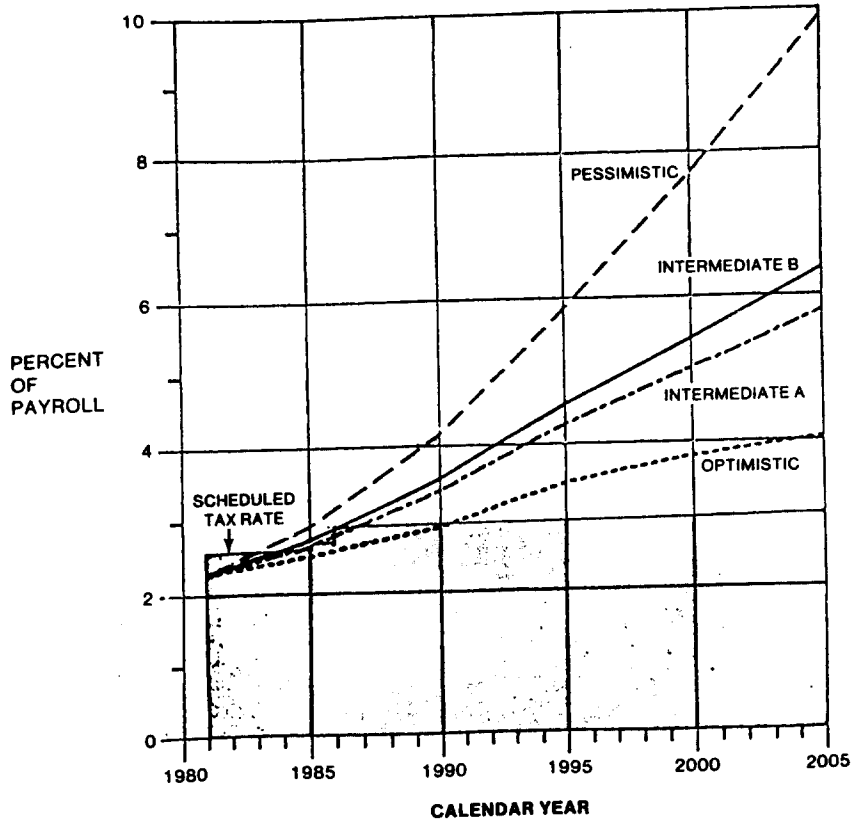
Chart D summarizes the projections of HI expenditures as percentages of taxable payroll as compared with the tax rates through the year 2005, based on the four sets of long-range assumptions. HI income scheduled for the early 1980's is sufficient to cover HI expenditures. But the chart shows that this favorable short-range financing picture is projected to begin deteriorating shortly after 1985. The expected net outflows from HI beginning in the late 1980's add to the problems already discussed for OASDI, and underscore the need to do more than rely on interfund borrowing to restore the strength of the combined system.

Table 5 shows the actuarial balance for HI over the next 25 years, based on the two sets of intermediate assumptions. This actuarial balance compares the average scheduled HI tax rate and the estimated average cost, both for meeting the HI expenditures and for bringing the HI fund ratio up to a more adequate level over the long run. For illustrative purposes, a fund ratio of 50 percent has been used here as providing such a level.

Table 5--HI Actuarial Balance 1981-2005
(Percent of Taxable Payroll)

	Optimistic Assumptions	Intermediate-A Assumptions	Intermediate-B Assumptions	Pessimistic Assumptions
Average Scheduled Payroll Tax Rate (Combined Employer-Employee Rate)	2.84%	2.84%	2.84%	2.84%
Expenditures	3.21	3.94	4.19	5.46
Trust Fund Buildup and Maintenance	0.05	0.08	0.09	0.18
Total Cost of the Program	3.26	4.02	4.28	5.64
Difference (Actuarial Balance)	-0.42	-1.18	-1.44	-2.80

ESTIMATED HI OUTGO AND TAX RATES 1981-2005



APPENDIX A

Financing of Supplementary Medical Insurance (SMI) (Medicare Part B)

SMI income of $10.9 billion during 1980 included $7.5 billion from the general fund of the Treasury and $3.0 billion in monthly premiums from participants. Expenditures of $11.2 billion included $10.6 billion for benefit payments. During 1980, the SMI Trust Fund decreased from $4.9 billion to $4.5 billion.

In July 1980, the SMI standard monthly premium rate increased from $8.70 to $9.60; in July 1981, the rate increased to $11.00. The promulgated premiums paid by SMI participants have been increasing each year by the same percentage by which OASDI benefit payments went up the year before. The payments to the SMI Trust Fund from the general fund of the Treasury cover the portion of program costs not paid by participants.

There is only one principal set of cost estimates for SMI, extending three years into the future, although alternative high-cost and low-cost projections are also made. These projections show that the financing is adequate through June 1982.

The amount of the SMI Trust Fund may be compared to its liability for claims incurred, but not yet paid. In recent years, the SMI Trust Fund has exceeded this liability, so that, by any standard, the program can be said to be actuarially sound.

APPENDIX B

Economic and Demographic Assumptions

The table below shows selected values of several of the assumptions used in the projections for OASDI and HI in the 1981 Trustees Reports.

Calendar Year	Percent Increase over Previous Year in Average Annual-- Real GNP 1/	Wages in Covered Employment	Consumer Price Index	Inpatient Hospital Costs 2/	Annual Unemployment Rate	Total Fertility Rate 3/
			Optimistic Assumptions			
1981	1.7%	10.6%	10.7%	15.6%	7.7%	1.9
1985	4.4	6.8	4.1	11.4	5.7	2.0
1995	3.2	4.5	2.0	6.8	4.5	2.1
2005 & later	3.5	4.5	2.0	6.3	4.0	2.4
			Intermediate-A Assumptions			
1981	1.1	10.2	11.1	15.6	7.8	1.9
1985	4.2	7.1	4.7	12.9	5.9	1.9
1995	2.8	5.0	3.0	9.1	5.0	2.0
2005 & later	3.1	5.0	3.0	8.4	5.0	2.1
			Intermediate-B Assumptions			
1981	1.1	10.2	11.1	15.6	7.8	1.9
1985	2.9	8.1	7.4	14.4	6.8	1.9
1995	2.4	5.5	4.0	10.0	5.4	2.0
2005 & later	2.7	5.5	4.0	9.3	5.0	2.1
			Pessimistic Assumptions			
1981	0.7	11.5	12.6	15.6	7.9	1.8
1985	3.0	10.1	9.7	18.8	7.4	1.8
1995	2.3	6.4	5.4	12.9	6.0	1.8
2005 & later	2.2	6.0	5.0	11.9	6.0	1.7
			"Worst-Case" Assumptions (1981-86 Only)			
1981	-0.1	10.6	12.8	15.6	8.3	1.8
1985	4.4	10.4	9.7	15.6	8.0	1.8

1/ Gross National Product (the total output of goods and services) expressed in constant dollars. The percentage increase in real GNP is assumed to change after the year 2005. The values for the year 2055 are 3.4, 2.5, 2.1, and 0.9 percent for the optimistic, intermediate A, intermediate B, and pessimistic assumptions, respectively.

2/ Includes hospital costs for all patients, not just those covered under HI. Figures shown for "2005 & later" are for 2005.

3/ The number of children who would be born to a woman in her lifetime if she were to experience the age-specific birth rates assumed and were to survive the entire child-bearing period.

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