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# Current Developments in Social Security Financing

by Dwight K. Bartlett III\*

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The current financial outlook for the old-age, survivors, disability, and health insurance (OASDHI) program indicates several problems. During 1980-84, income and outgo for the OASDI and hospital insurance (HI) trust funds combined are roughly in balance, according to the annual report of the Board of Trustees. The OASI program, however, is running out of funds as automatic benefit increases exceed the growth in payroll tax revenues. Clearly, additional financing will be needed throughout the 1980's. Funds now earmarked for the DI and HI trust funds could serve this purpose, although more short-range financing will be needed if real wages continue to show losses instead of the usual gains. The 1977 amendments that strengthened social security financing provided only a thin margin of safety against unfavorable experience during the early 1980's. The short-range economic picture has darkened considerably since 1977, with adverse consequences for social security financing. Only the DI experience has improved. Based on tax rates in the present law, a large buildup of OASDI trust funds is expected over the next 25 years. HI financing, however, is projected to become inadequate after 1990. Projections over the next 75 years indicate severe financing problems for the OASDI program early in the 21st century, as the aged population grows relative to the work force.

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Four separate social security programs provide financial security to American workers and their families. The old-age and survivors insurance (OASI) program pays monthly cash benefits after a worker retires or dies; the disability insurance (DI) program pays monthly cash benefits after a worker becomes disabled; the hospital insurance (HI or Medicare Part A) program pays for hospital care of the aged and long-term disabled; and the supplementary medical insurance (SMI or Medicare Part B) program pays for doctor bills and other medical expenses of the aged and long-term disabled. (The OASI and DI program together are referred to as OASDI.)

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\* Chief Actuary, Social Security Administration, Department of Health and Human Services. The author wishes to thank members of the staff, Office of the Actuary, for help in preparing this article—in particular, Richard G. Schreitmueller.

The Secretaries of the Departments of Health and Human Services, Labor, and the Treasury serve as trustees of the social security trust funds. They report to Congress annually on the condition of each fund and on projected future operations. The balances and projections described herein are taken from the 1980 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds.

Payroll taxes from employees, their employers, and the self-employed are credited to the trust funds to finance the OASI, DI, and HI benefits. Because SMI is financed differently, it is discussed separately in the technical note so that the main text can focus on the three payroll-tax-supported programs.

Table 1 shows the payroll tax rates for employers and employees, as established by law and last revised in

**Table 1.—Payroll tax schedule**

Calendar year	Maximum covered wages	Contribution rate (percent of taxable earnings) payable by employer and employee, each			
		Total	OASI	DI	HI
1980.....	\$25,900	6.13	4.33	0.75	1.05
1981.....	29,700	6.65	4.525	.825	1.30
1982-84.....	(1)	6.70	4.575	.825	1.30
1985.....	(1)	7.05	4.75	.95	1.35
1986-89.....	(1)	7.15	4.75	.95	1.45
1990 and later.....	(1)	7.65	5.10	1.10	1.45

<sup>1</sup> Subject to automatic wage-indexed increase each year.

1977. Also shown is the maximum amount of a worker's wages that can be taxed and credited toward benefits each year. For the self-employed, the OASI and DI tax rates are about one and one-half times the rates payable by employees; the HI tax rates are the same as those for employees.

It is intended that the income for each program will, in most years, closely match outgo. When income exceeds outgo, the excess serves to increase the trust funds. When outgo exceeds income, the trust funds are drawn down. The trust funds thus serve as a relatively small 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 long-term securities issued to the general public.

## Financial Operations in 1979

During 1979, 114 million workers contributed to the OASDI and HI trust funds through payroll taxes. By the end of the year, 35 million OASDI beneficiaries were receiving monthly cash benefits, and about 95 percent of the aged population were covered under the HI and SMI provisions.

As shown in table 2, cash payments from the OASI program exceeded income by \$2.8 billion in 1979, following a \$5.0 billion shortfall in 1978. The income of the DI and HI programs again exceeded expenditures. Administrative expenses represented about 1.5 percent of benefit payments for the OASDI programs and 2.2 percent for the HI program.

## Actuarial Cost Projections

As required by law, the trustees' annual reports contain projections of each fund's expected operations and status under present law. The financial projections given here are on a calendar-year basis and are for the programs as they are now structured.<sup>1</sup> These projections

<sup>1</sup>The projections are for the program in effect just after enactment of the Social Security Disability Amendments of 1980 but before possible reallocation of the OASDI tax rates.

extend over the next 75 years for the OASI and DI trust funds and 25 years for the HI fund. The projections are presented as percentages of taxable payroll after the first few years so that expenditures can be compared directly with the payroll-tax rates in the law. As the projection period lengthens, less confidence can be placed in the demographic and economic assumptions underlying the projections.

## Assumptions Used

Income and outgo of the OASDI trust funds will depend on rates of mortality, disability, retirement, marriage, fertility, divorce, net immigration, productivity, unemployment, inflation, and other measures of demographic and economic activity. In addition, Medicare costs will depend on how frequently health care services are used and on how much these services cost. It is impossible to predict exactly all the developments that will affect social security costs, and so the projections will contain some uncertainty.

The OASDI and HI cost projections are prepared using three alternative sets of assumptions, referred to as "optimistic," "intermediate," and "pessimistic." When the effect of program changes is analyzed, the most importance is generally attached to the intermediate projection. The three projections indicate the range of costs under reasonable conditions and thus are indicators of the financial status and outlook. Nothing guarantees that actual costs will fall within the range of the projections in any particular year or period of years. Table 3 shows selected values of several assumptions used in the projections.

## Measures of Financial Soundness

The financial soundness of the social security system rests on the determination of the American people and their elected representatives to pay for the benefit commitments through taxes. Central to the political realization of that determination is public understanding of the commitments being made through the program, both in the short range and the long range, and the resulting financing required to support those commitments. When the need for tax increases or other financing changes is analyzed, several measures of financial soundness are commonly used.

The trust fund ratio is the balance in the trust fund at the beginning of a year, expressed as a percentage of that year's expenditures. For example, a trust fund ratio of 25 percent means that the reserve in the fund is one-fourth of annual outlays, or enough to pay benefits for about 3 months in the absence of any income. At the beginning of 1980, the trust fund ratios for OASI, DI, and HI were 23 percent, 35 percent, and 53 percent, respectively. Several factors should be considered in

**Table 2.—Results of financial operations in 1979**  
[In billions]

Item	Total	OASI	DI	HI
Trust fund assets Jan. 1, 1979.....	\$43.2	\$27.5	\$4.2	\$11.5
Income, total.....	128.7	90.3	15.6	22.8
Payroll taxes.....	123.8	87.9	15.1	20.8
Premiums from participants.....	(1)	.....	.....	(1)
General fund of treasury.....	1.6	.6	.1	.9
Interest.....	3.1	1.8	.4	.9
Transfer from railroad retirement fund.....	.2	.....	.....	.2
Outgo, total.....	128.4	93.1	14.2	21.1
Benefit payments.....	124.9	90.6	13.7	20.6
Administration, including rehabilitation and research.....	2.0	1.1	.4	.5
Transfer to railroad retirement fund.....	1.5	1.4	(1)	.....
Net change in trust fund.....	.3	-2.8	1.4	1.8
Trust fund assets, Dec. 31, 1979.....	43.5	24.7	5.6	13.2
Comparative results, 1978:				
Income.....	111.1	78.1	13.8	19.2
Outgo.....	114.2	83.1	13.0	18.1
Net change in trust fund.....	-3.1	-5.0	.9	1.0

<sup>1</sup> Less than \$50 million.

assessing the adequacy of trust fund ratios needed to assure that benefits will be paid on time:

- Under the OASI and DI programs, all benefit checks are issued early each month, although the income from payroll taxes is spread over the entire month. This cash-flow pattern requires that the OASI and DI trust funds be kept high enough to cover the payments due when each month begins. A trust fund ratio below 9 percent usually means that the fund soon will be unable to pay the full amount of the monthly benefits due.

- Under the HI program, benefit payments fluctuate noticeably from month to month.

- Payroll tax receipts also fluctuate from month to month, as do other items of income and outgo.

- Unforeseen changes in the economy may cause the trust funds to decrease unexpectedly. The trust funds should have sufficient assets to allow time for executive and legislative action to prevent their exhaustion should the program experience continued annual deficits.

Although the programs can operate temporarily when trust fund balances are fairly low, it has been recommended that the present OASDI trust fund ratios be built up to 75 percent and that the ratio for HI be built up to 100 percent. No general agreement exists, however, about how large the trust funds should be.

Year-by-year expenditures as a percentage of taxable payroll are another useful measure. These percentages can be used to establish tax-rate schedules that approximately support pay-as-you-go financing. Also, to compute the actuarial balance, these percentages can be averaged over a number of years and compared with the average payroll-tax rate during that period. The OASDI system is said to be in close actuarial balance over the long-range period if the scheduled tax rates are

**Table 3.—Economic and demographic assumptions, selected values**

Calendar year	Average annual percentage increase from previous year				Unemployment rate (percent)	Total fertility rate <sup>3</sup>
	Real gross national product <sup>1</sup>	Wages in covered employment	Consumer price index	Inpatient hospital costs <sup>2</sup>		
Optimistic assumptions						
1980.....	0	10.0	14.3	14.4	7.0	1.8
1985.....	4.8	7.7	5.7	12.4	4.6	2.0
1995.....	3.0	5.25	3.0	6.8	4.0	2.3
2005 and later.....	3.4	5.25	3.0	47.0	4.0	2.5
Intermediate assumptions						
1980.....	-0.4	9.6	14.2	14.4	7.2	1.8
1985.....	3.6	9.1	7.8	14.7	5.9	1.9
1995.....	2.4	7.3	5.5	10.9	5.0	2.0
2005 and later.....	2.8	5.75	4.0	49.8	5.0	2.1
Pessimistic assumptions						
1980.....	-1.7	9.9	16.6	14.4	7.4	1.8
1985.....	3.0	10.3	9.8	17.8	6.8	1.7
1995.....	2.3	8.3	7.0	14.3	6.0	1.5
2005 and later.....	2.1	7.25	6.0	412.9	6.0	1.5

<sup>1</sup> The percentage increase in real GNP is projected to change after the year 2005. Increases based on the optimistic, intermediate, and pessimistic assumptions for the year 2055 are 3.4, 2.3, and 0.9, respectively.

<sup>2</sup> Includes hospital costs for all patients, not just those covered under HI.

<sup>3</sup> Number of children (averaged to the nearest tenth) projected to be born to a woman who lives through entire child-bearing period.

<sup>4</sup> Data for the year 2000.

between 95 percent and 105 percent of the estimated average expenditures as a percentage of taxable payroll.

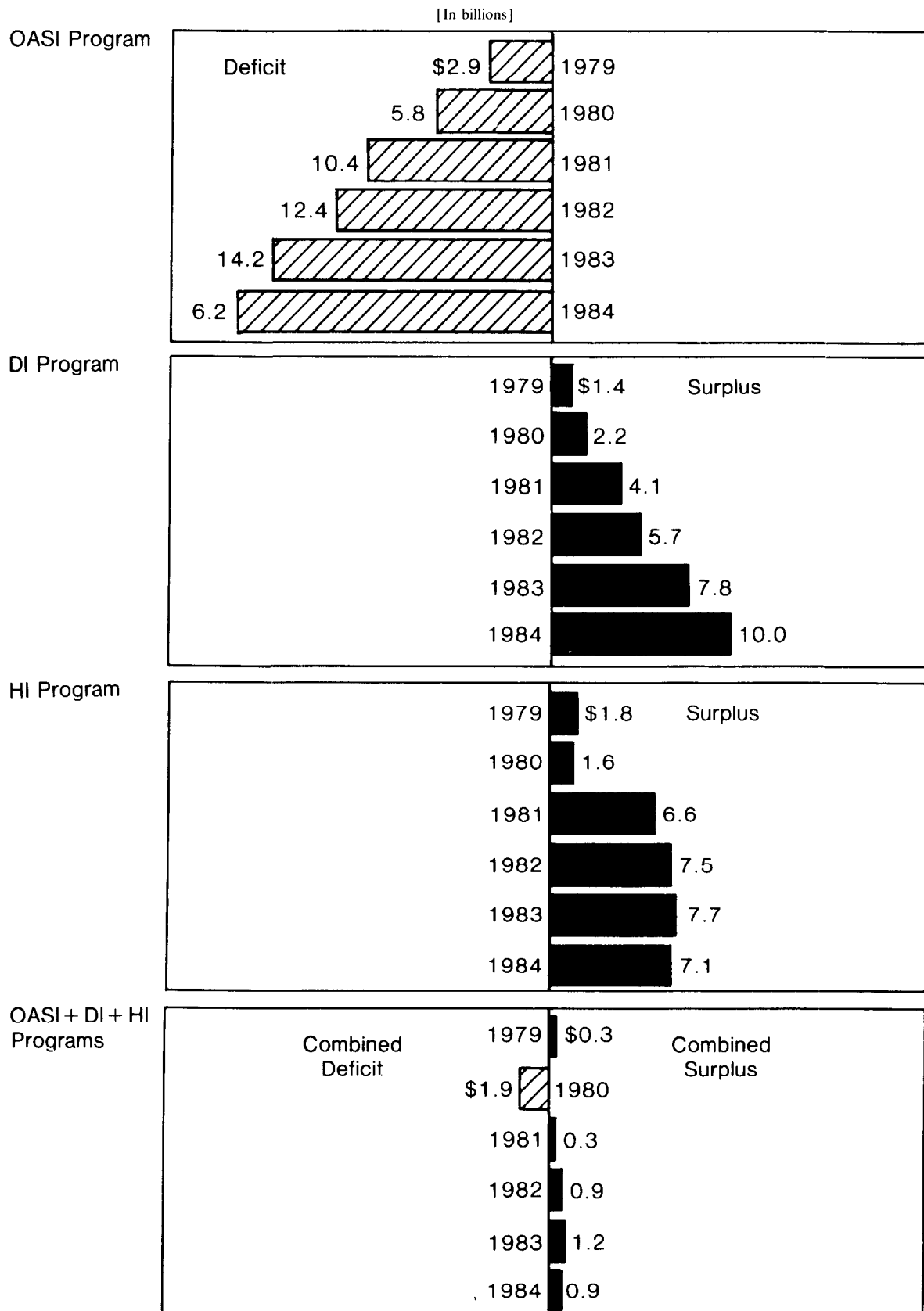
### Short-Range Financing (1980-84)

Projections over the next 5 years allow Congress and the Administration to monitor and adjust income to the programs, taking into account the effect on the Federal budget and other economic impacts. In this short-range picture, the number of persons receiving social security benefits can be forecast closely. Changes in the national economy, however, can have major effects on social security outgo and income, and are hard to predict.

Chart 1 depicts the projected annual surplus or deficit (the difference between cash income and outgo in the year) during 1979-84 for the OASI, DI, and HI funds separately—and for the three programs combined—based on the intermediate assumptions. For the OASI program, the outgo in each of these years is expected to exceed income, with the amount of this deficit increasing steadily. For the DI and HI programs, however, income is projected to exceed outgo substantially during these years.

Table 4 indicates year-by-year projections of trust

**Chart 1.**—Year-by-year projections of annual surplus or deficit for OASI, DI, and HI trust funds, by intermediate assumptions, 1979–84



Source: June 1980 OASDI and HI Trustees' Report projections for charts 1–5.

**Table 4.**—Projected trust fund ratios, by set of assumptions, 1979-84

Assumptions and trust funds	Amount in trust fund on January 1 as a percent of outgo during year					
	1979	1980	1981	1982	1983	1984
<b>Optimistic assumptions</b>						
OASI.....	30	23	15	18	2	-4
OASI and DI combined.....	30	24	19	15	12	11
OASI, DI, and HI combined.....	34	29	24	24	24	26
<b>Intermediate assumptions</b>						
OASI.....	30	23	15	6	-2	-10
OASI and DI combined.....	30	24	18	12	18	4
OASI, DI, and HI combined.....	34	29	24	21	19	18
<b>Pessimistic assumptions</b>						
OASI.....	30	23	14	3	-9	-21
OASI and DI combined.....	30	24	18	19	0	-8
OASI, DI, and HI combined.....	34	29	23	18	11	5

<sup>1</sup> Trust fund unable to pay benefits during this year; ratios for later years are theoretical.

fund ratios through 1984 under all three sets of assumptions. The OASI trust fund would become unable to pay benefits by late 1981 or early 1982 even under the most optimistic assumptions used. Also, the combined OASI and DI funds would not be adequate to pay all OASDI benefits during these next 5 years except under the optimistic assumptions. Together, the OASI, DI, and HI funds, nonetheless, are projected to be adequate to meet their combined needs during 1980-84 except under the pessimistic assumptions.

On the basis of projections made when the 1977 Amendments to the Social Security Act were adopted, it was widely believed that the financial health of the social security program had been restored for a period extending well beyond the turn of the century for the OASDI program and into the last decade of this century for the HI program. Since 1977, however, the economy has behaved in ways that few anticipated. Also, at the time of the 1977 amendments, the margin of safety was known to be thin during the early 1980's for the OASI fund. As a result, the OASI trust fund is doing less well than was expected and additional income will be needed for the OASI program within about 1½ years. In contrast, the DI and HI trust funds are building larger reserves than were expected after the law was amended in 1977.

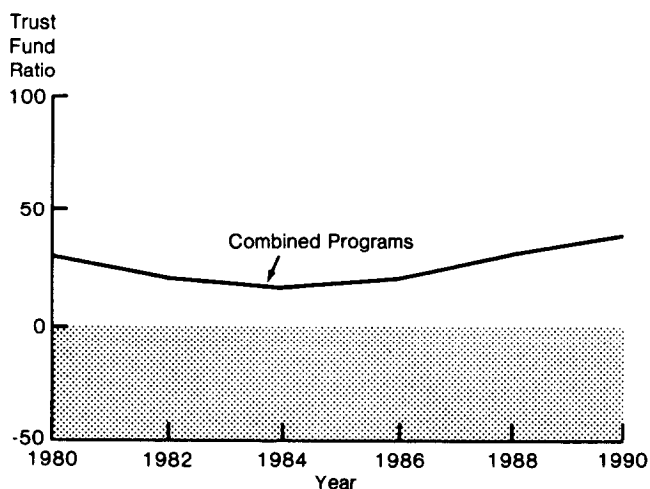
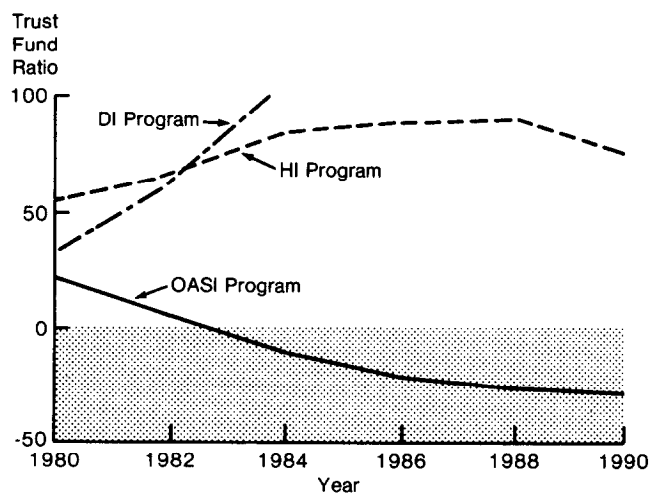
Recent experience, therefore, indicates that the tax rates now in the law are not allocated in the best possible way to provide the income needed by each program. Under present law the OASI, DI, and HI funds are kept separate from one another. Funds intended for one program cannot be used for another without an act of Congress.

It should be emphasized that the pending exhaustion of the OASI trust fund is the overriding immediate problem. As a possible solution, the trustees recommended that temporary authority be granted to allow interfund loans on the condition that such loans not

jeopardize the cash position of any individual fund. The OASI trust fund would need to borrow heavily from the DI and HI funds initially but would later repay, with interest, the amount borrowed. Such borrowing would eliminate the need to go outside the social security trust funds for financing if the assumptions of the intermediate or optimistic projections materialize. The trustees also recommended that the OASDI tax rates be reallocated to provide more income to the OASI program and correspondingly less to the DI program.

Chart 2 shows projections of the trust funds ratios through 1990 for the OASI, DI, and HI, funds separately, and for these three programs combined. Based on the intermediate assumptions, the DI and HI funds would be sufficient to meet all the obligations under these programs during the remainder of this decade while providing the financial support needed for the OASI program. Under the intermediate assumptions, the OASI program would again become fully self-supporting during the 1990's.

**Chart 2.**—Trust fund ratios projected to 1990, by intermediate assumptions



Under the intermediate assumptions, there is not a wide margin of safety during the next few years. Under the pessimistic assumptions, the three combined funds would be unable to pay benefits when due beginning in 1983. Under adverse conditions, therefore, interfund borrowing could only postpone the need for additional income.

### Medium-Range Financing (1980-2004)

Projections of social security financing during the medium-range period cover the next 25 years. As the length of the projection period increases, the level of uncertainty in the projections rises. Over the 25-year period, it is assumed that current adverse economic conditions will improve and that eventually there will be moderate rates of economic growth and inflation.

Table 5 summarizes the OASDI trust fund ratios based on the intermediate set of assumptions and projected through the year 2005. After 1981, the ratios are theoretical because it is assumed that the short-range OASI financing problems will be solved by allowing the OASI fund to borrow money to be repaid with interest. Under these conditions, a large buildup of funds would occur in the 1990's. Such a buildup is higher than is generally considered necessary for contingency reserves, especially in the DI fund.

The favorable short-range financing picture for the HI program is projected to deteriorate in the second half of the 25-year period. Because of rising health care costs, by 1990 HI disbursements are projected to exceed income. The HI trust fund would be exhausted within the 25-year period under all three sets of assumptions. Although the HI fund is not in imminent danger, the trustees recommend that Congress investigate ways of strengthening HI financing and that action be taken to hold down hospital cost increases.

The following tabulation shows the actuarial balance for the OASDI and HI trust funds over the next 25 years based on the intermediate assumptions.

Item	Percent of taxable payroll	
	OASDI	HI
Average scheduled tax, rate employer-employee combined.....	11.85	2.81
Expenditures <sup>1</sup> .....	10.66	3.80
Actuarial balance.....	1.19	-.99

<sup>1</sup> For HI, includes expenditures plus 0.20 percent of taxable payroll for building the trust fund ratio to 100 percent by the end of the 25-year period.

For the OASI and DI funds combined, the medium-range actuarial surplus is 1.19 percent of taxable payroll. For the HI funds, the actuarial deficit over the 25-

**Table 5.**—Projected OASDI trust fund ratios, 1980-2005<sup>1</sup>

Year	Amount in trust fund on January 1 as a percent of outgo during year		
	OASDI	OASI	DI
1980.....	24	23	35
1985.....	0	-17	142
1990.....	23	-28	442
1995.....	109	12	902
2000.....	204	64	1,193
2005.....	295	127	1,330

<sup>1</sup> Based on intermediate assumptions; ratios after 1981 are theoretical.

year period is 0.99 percent of payroll. Thus, over the 25-year period, the average payroll-tax rate for the three programs combined is slightly above the estimated program costs.

### Long-Range Financing (1980-2054)

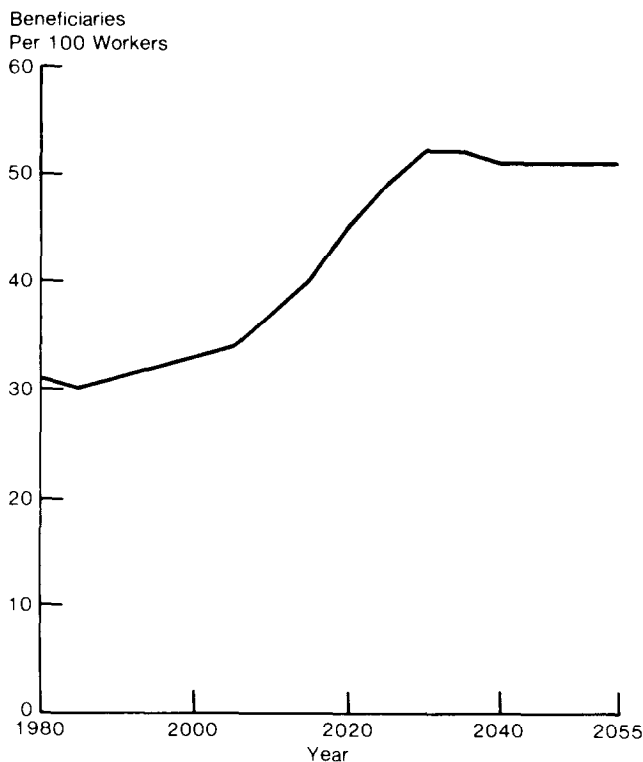
Long-range projections of OASDI financing over the next 75 years, although sensitive to variations in the assumptions, furnish insight into the consequences of the existing program and of any proposed amendments. When the projection period is so long, however, less confidence should be placed in the demographic and economic assumptions. Projections for the HI program customarily do not go beyond 25 years because of the high degree of uncertainty about future hospital costs relative to the rest of the economy.

Several important demographic trends are anticipated in the next 75 years. Shortly after the turn of the century, rapid growth is expected in the aged population because that group will begin to include the large number of persons born after World War II. Improvements in mortality rates now projected also would increase the number of aged beneficiaries. Under conditions of low fertility, the aged would make up a higher proportion of the total population.

Chart 3 shows the long-range trend in the number of OASDI beneficiaries for each 100 covered workers, based on the intermediate assumption. This number would rise from 31 at present to 40 early in the next century and would eventually level off at more than 50. Because most persons who will be beneficiaries during the next 75 years have already been born, their number is projected mainly from the present population. The number of workers involved in these projections depends, however, on future birth rates that are subject to a high degree of variability, as well as on net immigration.

Chart 4 indicates the trend in the estimated annual OASDI outgo as a percentage of taxable payroll under each of the three sets of assumptions during the next 75

**Chart 3.—Number of beneficiaries supported by each 100 workers, by intermediate assumptions**



years. For comparative purposes, the scheduled OASDI tax rates during this period are also shown. In chart 4 the outgo based on the intermediate assumptions rises in almost the same proportions as the relative number of beneficiaries in chart 3. This relationship illustrates how closely the long-range cost depends on demographic trends.

Under each set of assumptions the estimated outgo as a percentage of taxable payroll increases rapidly after the turn of the century (chart 4). In proportion to taxable payroll, the outgo peaks between the years 2030 and 2035 under the intermediate and optimistic assumptions, and it is still increasing somewhat at the end of the projection period under the pessimistic assumptions. Without changes in the program, these projections indicate that severe financial difficulties are likely to arise in the next century. Concern about the short-range problems should not be allowed to obscure that likelihood.

Chart 5 shows the long-range projections of the OASDI trust funds under the three sets of assumptions. Under the intermediate assumptions, action would be needed to solve the OASI financing problems during the 1980's, after which the OASDI trust fund ratio would rise above 100 percent by the year 2000. Early in the next century, this ratio would rise to a peak above 300 percent and then decline to zero around the year 2030 when the funds would be exhausted. Under the

optimistic assumptions, the OASDI trust fund ratio would remain at a high level from the turn of the century to the end of the projection period. Under the pessimistic assumptions, the ratio would not regain satisfactory levels for any extended period.

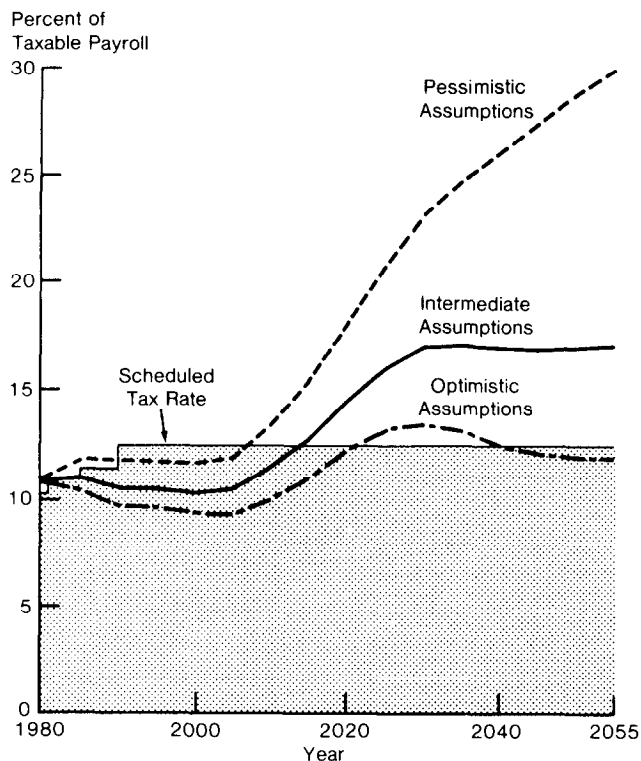
Table 6 indicates that the long-range OASDI actuarial balance varies from a surplus of 0.89 percent under the optimistic assumptions to a deficit of 6.17 percent under the pessimistic assumptions. Under the intermediate assumptions, the long-range deficit is 1.52 percent.

### Comparison of 1978 and 1980 OASDI Projections

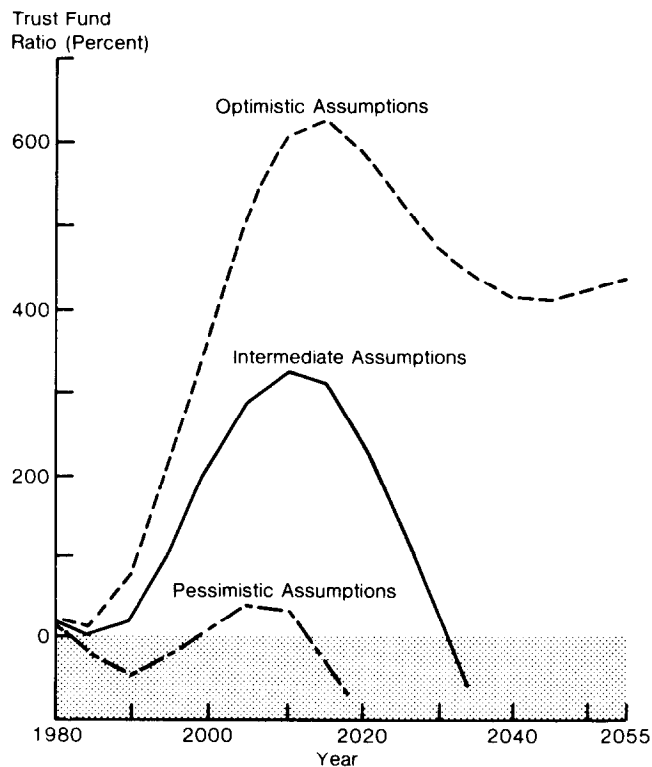
When the 1977 amendments were adopted, it was generally believed that financial soundness had been restored to the title II (OASDI) portion of the social security program for some decades to come. This objective was thought to have been achieved by (1) removing from the benefit formula a technical flaw that caused replacement ratios<sup>1</sup> for newly entitled beneficiaries to increase significantly with time under inflationary conditions, (2) increasing both payroll-tax rates and maximum taxable covered wages, and (3) reallocating tax income between the OASI and DI trust

<sup>2</sup> The ratio of initial benefits to preentitlement earnings.

**Chart 4.—Estimated OASDI outgo and scheduled tax rates, by set of assumptions**



**Chart 5.—OASDI Trust fund ratios projected for 75 years, by set of assumptions**



funds. As the foregoing review of the 1980 trustees' report points out, the title II program will encounter significant financing problems during the 1980's unless corrective legislation is adopted.

A comparison of the projections and assumptions contained in the trustees' reports for 1978 and 1980 makes clear the following: (1) When the 1977 amendments were adopted, it was recognized that the financing for the program would continue to be quite thin for at least another 5 years. (2) From 1978 on, the economy has been, and is likely to continue to be, far worse in most respects than anticipated. (3) The claims experience of the disability insurance program has been substantially better than anticipated and is projected to continue to be so. The balance of this section examines these three points in more detail.

### Original Projections Under 1977 Amendments

The 1978 trustees' report and the projections contained therein were prepared shortly after the adoption of the 1977 amendments. The projections therefore provide a clear indication of the degree of financial strength that the 1977 amendments were intended to impart to the system. Tables 7 and 8 show in summary form what those projections were in the 1978 trustees' report on the basis of the intermediate and pessimistic assump-

**Table 6.—Estimated average OASDI tax rates, expenditures, and actuarial balance, by set of assumptions, 1980-2054**

Item	Percent of taxable payroll			
	25-year averages			75-year average 1980-2054
	1980-2004	2005-2029	2030-2054	
Average scheduled tax rate (employer-employee combined).....	11.85	12.40	12.40	12.22
Estimated average expenditures:				
Optimistic assumptions.....	9.91	11.48	12.59	11.33
Intermediate assumptions.....	10.66	13.57	16.98	13.74
Pessimistic assumptions.....	11.73	16.84	26.60	18.39
Difference (actuarial balance):				
Optimistic assumptions.....	1.94	.92	-.19	.89
Intermediate assumptions.....	1.19	-1.17	-4.58	-1.52
Pessimistic assumptions.....	.12	-4.44	-14.20	-6.17

tions. The projections under both sets of assumptions show that the OASI and DI trust funds combined were expected to continue to diminish in absolute terms through 1980 and then begin to grow when higher scheduled tax rates and maximum covered wages took effect in 1981. Under the pessimistic assumptions, however, the OASI trust fund was projected to continue to diminish through 1982. Table 8 shows that the trust fund ratios under the intermediate assumptions were scheduled to decrease through 1980 to a low of 21 percent at the beginning of 1981 for both the OASI fund and the OASI and DI funds combined, and then to begin to increase. Under the pessimistic assumptions, the OASI fund and the combined OASI and DI funds were projected to show decreasing trust fund ratios through the mid-1980's.

As noted earlier, the program is financed essentially on a pay-as-you-go basis with the trust funds designed primarily to fill a contingency reserve function. The reserves allow the system to withstand temporary economic dislocations until corrective legislative changes can be discussed and implemented. How large the trust fund should be in order to fill this contingency-reserve function has long been discussed. It has frequently been suggested that 75-100 percent is the proper level.<sup>2</sup> Congress, in adopting the 1977 amendments, apparently did not consider it feasible to institute increased payroll-tax rates immediately to begin rebuilding the trust fund to the desired level. Rather, it adopted a tax schedule designed to phase into the ultimate rates only in 1990. Presumably Congress understood that the likely consequence was that the trust funds, already at an undesirably low level, would continue to shrink at least into the early 1980's.

<sup>2</sup> See, for example, *Social Security Financing and Benefits: Reports of the 1979 Advisory Council on Social Security*, Department of Health, Education, and Welfare, December 7, 1979, page 48.



**Table 7.**—Comparison of OASDI trust fund income and expenditures projections from 1978 and 1980 trustees' reports, by set of assumptions, 1978-82

Trustees' report	Calendar year				
	1978	1979	1980	1981	1982
Intermediate assumptions					
1978:					
OASDI:					
Income.....	\$91.8	\$105.8	\$118.6	\$138.5	\$154.5
Expenditures.....	97.1	107.8	119.3	131.1	143.6
Net.....	-5.2	-2.0	-7	7.4	10.9
OASI:					
Income.....	78.1	90.1	101.0	117.1	130.7
Expenditures.....	83.7	92.6	102.2	112.1	122.6
Net.....	-5.7	-2.5	-1.2	5.0	8.1
DI:					
Income.....	13.8	15.7	17.6	21.4	23.8
Expenditures.....	13.3	15.2	17.1	19.0	21.0
Net.....	.5	.5	.5	2.4	2.8
Pessimistic assumptions					
OASDI:					
Income.....	\$91.8	\$105.9	\$116.2	\$134.5	\$150.2
Expenditures.....	97.1	108.0	120.7	134.4	149.3
Net.....	-5.2	-2.1	-4.5	.1	1.0
OASI:					
Income.....	78.1	90.2	99.0	113.7	127.0
Expenditures.....	83.7	92.7	103.4	114.8	127.3
Net.....	-5.7	-2.6	-4.4	-1.1	-3
DI:					
Income.....	13.8	15.7	17.2	20.8	23.2
Expenditures.....	13.3	15.2	17.4	19.6	21.9
Net.....	.5	.4	-1	1.2	1.3
Intermediate assumptions					
1980:					
OASDI:					
Income.....	\$91.9	\$105.9	\$120.9	\$138.4	\$157.3
Expenditures.....	96.0	107.3	124.4	144.7	163.9
Net.....	-4.1	-1.5	-3.5	-6.3	-6.6
OASI:					
Income.....	78.1	90.3	102.8	116.5	132.0
Expenditures.....	83.1	93.1	105.6	126.9	144.4
Net.....	-5.0	-2.9	-5.8	-10.4	-12.4
DI:					
Income.....	13.8	15.6	18.1	21.9	25.3
Expenditures.....	13.0	14.2	15.9	17.8	19.5
Net.....	.9	1.4	2.3	4.1	5.7

<sup>1</sup> Actual amount.

## The Economy, 1978-82

Although it was clear when the 1977 amendments were adopted that the financing of the title II benefits was going to be weak through the early 1980's, the projections contained in the 1980 trustees' report show a much gloomier picture. Under the intermediate assumptions in the report, it is now projected that the trust fund ratios at the beginning of 1983 will be lower for the OASI trust fund and the combined OASI and DI trust funds than the projected trust fund ratios under the pessimistic assumptions in the 1978 trustees' report.

In the short range, the factor that most affects the financing of the system is the gain in real wages—that is, the difference between the gain in nominal wages

**Table 8.**—Comparison of OASDI trust fund ratio projections from 1978 and 1980 trustees' reports, by set of assumptions, 1978-83

Trustees' report	Amount in trust fund on January 1 as a percent of outgo during year					
	1978	1979	1980	1981	1982	1983
1978:						
Intermediate assumptions:						
OASDI.....	37	28	24	21	25	30
OASI.....	39	29	24	21	23	27
DI.....	25	25	25	25	34	43
Pessimistic assumptions:						
OASDI.....	37	28	24	18	16	15
OASI.....	39	29	23	17	15	13
DI.....	25	25	25	21	24	27
1980:						
Intermediate assumptions:						
OASDI.....	37	30	24	18	12	8
OASI.....	39	30	23	15	6	-2
DI.....	26	30	35	44	61	84

<sup>1</sup> Actual percent.

and the increase in the consumer price index (CPI). Another important economic parameter for social security financing is the unemployment rate. Table 9 shows these factors along with the automatic benefit increases as assumed in the 1978 and 1980 trustees' reports. (The automatic benefit increase is the percentage increase given to current beneficiaries at midyear resulting from the percentage rise in the average monthly CPI from the first quarter of the previous year to the first quarter of the current year.) An increase in nominal wages, of course, tends to bring more payroll-tax income into the trust funds. An increase in the CPI causes disbursements from the trust funds to go up because of the automatic benefit increase. The unemployment rate also affects payroll-tax income because it reduces aggregate taxable wages. A crude method for computing the differential effect on trust fund ratios of varying economic scenarios is set forth in the technical note at the end of this article. The following tabulation summarizes the reductions in the OASDI trust fund ratios estimated to have resulted from changes in the trustees' report's economic assumptions from 1978 to 1980.

Change from—	Reduction in OASDI trust fund ratios (percent)				
	1979	1980	1981	1982	1983
Intermediate assumptions in 1978 to intermediate assumptions in 1980.....	1.3	0.8	-6.5	-20.3	-35.1
Pessimistic assumptions in 1978 to intermediate assumptions in 1980.....	1.3	.8	-3.3	-12.5	-22.2

In the 1978 report, the OASDI trust fund ratios as of January 1983 were projected to be 30 percent using the intermediate assumptions and 15 percent using the

**Table 9.**—Comparison of selected economic assumptions from 1978 and 1980 trustees' reports, by set of assumptions, 1978-82

Trustees' report	1978	1979	1980	1981	1982
	Intermediate assumptions				
1978:					
Average annual percentage increase from previous year:					
Wages .....	7.2	7.9	7.9	7.4	7.4
Consumer Price Index .....	6.1	6.1	5.7	5.2	5.0
Real wages .....	1.1	1.8	2.2	2.2	2.4
Automatic benefit increase (percent) .....	6.5	6.1	5.9	5.4	5.0
Unemployment rate (percent) ...	6.3	5.9	5.4	5.0	4.8
	Pessimistic assumptions				
Average percentage annual increase from previous year:					
Wages .....	7.2	8.2	7.4	8.0	8.3
Consumer Price Index .....	6.1	6.8	7.1	7.0	6.5
Real wages .....	1.1	1.4	.3	1.0	1.8
Automatic benefit increase (percent) .....	6.5	6.4	7.3	6.8	6.8
Unemployment rate (percent) ...	6.3	6.0	7.0	7.0	6.6
	Intermediate assumptions				
1980:					
Average annual percentage increase from previous year:					
Wages .....	18.1	18.3	9.6	9.5	10.9
Consumer Price Index .....	17.6	11.5	14.2	9.7	9.0
Real wages .....	1.5	13.1	-4.6	-2	1.9
Automatic benefit increase (percent) .....	16.5	19.9	114.3	11.3	9.0
Unemployment rate (percent) ...	16.0	15.8	7.2	7.9	7.3

<sup>1</sup> Actual percent.

pessimistic assumptions. The tabulation reveals that the effects of the past 2 years' economic experience—and of changes in the present short-range economic outlook—have more than offset the margin of safety represented by these trust fund levels. These results clearly show that the economic assumptions contained in the intermediate set in the 1980 trustees' report—including 2 years of actual experience in 1978 and 1979—are, in fact, significantly more pessimistic than the set of pessimistic assumptions contained in the 1978 trustees' report.

This comparison begs the question of whether the assumptions contained in the 1978 trustees' report were unduly optimistic. Obviously, the passage of 2 years makes more certain current projections of the financial soundness of the system through 1982. It is worth noting that private sector economists by and large did not foresee the extent of the deterioration in the economy that has occurred and is expected to occur through 1982. In its December 1977 **Trendlong** projection, for example, Data Resources, Inc., projected increases in the CPI of 6.2 percent, 5.6 percent, 5.4 percent, 5.4 percent, and 5.3 percent, respectively, for the years

1978-82, while for the same years, Chase Econometrics, in its November 1977 long-term forecast, projected rises of 6.3 percent, 6.0 percent, 6.3 percent, 6.0 percent, and 6.0 percent. These estimates do not compare unfavorably with the assumptions contained in the 1978 trustees' report and, in fact, are substantially below those contained in the 1980 trustees' report, which includes 2 years of actual experience in 1978 and 1979. One might conclude, therefore, that the set of intermediate economic assumptions used in the 1978 trustees' report was reasonable, given widely held opinions at the time about the likely course of the economy. Another easily drawn conclusion is that the set of pessimistic assumptions was not enough of a warning to policymakers about the real problems implicit in the known weak financing of title II benefits through the early 1980's.

In earlier years, the setting of short-range economic assumptions for the projections clearly was of less importance than at present since there was no danger of exhausting the trust funds in the short range. This situation is no longer the case. The need for additional research into the setting of pessimistic assumptions is therefore clearly indicated.

## Disability Claims Experience

In general, demographic assumptions have less consequence for short-range trust fund projections than the economic factors described above. Mortality rates tend to be highly stable over short periods of time. Fertility rates not only tend to be stable over short periods of time but also have little effect on the number of beneficiaries or taxpayers in the short range. The one exception to the foregoing is the disability claims experience.

The disability incidence rate is a measure of the number of disabled workers entering the beneficiary rolls and therefore directly affects projected disability-benefit disbursements in the short range. The disability incidence rate increased gradually from the time the disability insurance program came into being in the mid-1950's through 1977. The increasing rate of disability insurance claims was very evident to Congress when it was considering the 1977 amendments, which substantially increased the portion of the payroll tax credited to the DI trust fund. For reasons not entirely understood, the disability incidence rate has shown a dramatic reversal since 1977, dropping to levels not experienced since the early 1960's. Much of this change has been attributed to a tightening of the administrative process for determining disability. Also, since 1977 the learning curve that followed inauguration of the SSI program has leveled off. That is, applicants who visited social security offices after SSI began in the mid-1970's

were made aware that Federal disability insurance benefits existed. Besides producing higher levels of DI incidence rates due to persons newly disabled, this apparently resulted in temporary increases above such levels while persons who were previously disabled applied for DI benefits.

The termination rates of those on the disability insurance rolls have been, and are projected to continue to be, more favorable than the rates projected in the 1978 trustees' report. The combined result of these two factors is to reduce substantially the number of disabled workers with benefits in current payment-status—both now and as projected through 1982 in the 1980 trustees' report—from the number projected in the 1978 trustees' report. Accordingly, the 1980 trustees' report projects a more rapid growth rate for the DI trust fund than did the 1978 trustees' report despite the economic problems described above that also affect the DI trust fund. Since the DI program is relatively small compared with the OASI program, however, its more favorable experience cannot make more than a small contribution toward alleviating the potential problems for the combined OASI and DI trust funds that are projected on the basis of the more adverse economic assumptions in the 1980 trustees' report. The following tabulation compares the number of disabled workers at midyear as projected in the 1978 and 1980 trustees' reports.

Trustees' report	Projected number of disabled-worker beneficiaries with benefits in current-payment status (in thousands)				
	1978	1979	1980	1981	1982
1978:					
Intermediate assumptions .....	2,899	3,077	3,249	3,417	3,581
Pessimistic assumptions .....	2,899	3,108	3,273	3,452	3,617
1980:					
Intermediate assumptions .....	2,858	2,877	2,866	2,864	2,875

## Conclusion

The most pressing need is to deal with the OASI trust fund's short-range financing problems, which are of a severity that was not, and perhaps could not have been, anticipated when the 1977 Amendments to the Social Security Act were adopted. The problems have influenced those concerned with financing the program to pay more attention to the consequences of adverse economic conditions on the trust funds. The short-range problems, however, should not obscure the longer-range problems associated with continued high rates of inflation in hospital expenses and with major demographic shifts leading to rapid growth in the beneficiary rolls beginning in the second decade of the next century.

## Technical Note

### Supplementary Medical Insurance Financing

Supplementary medical insurance (SMI) is largely financed out of the general fund of the Treasury, although part of the costs are met by the monthly premiums paid by SMI participants. SMI cash income of \$9.8 billion during 1979 included \$6.6 billion from the general fund and \$2.7 billion from participants. Expenditures of \$9.3 billion included \$8.7 billion for benefit payments. During 1979, the SMI trust fund increased from \$4.4 billion to \$4.9 billion.

In 1979, the monthly premium rate for SMI increased from \$8.20 to \$8.70, and in 1980 it rose to \$9.60. The premiums paid by SMI participants are increasing each year at the same percentage by which OASDI benefit payments went up the year before. The payments to the SMI trust fund from the general fund are set at levels considered adequate to provide for the portion of program costs not payable by participants.

Only one principal set of cost estimates is prepared for SMI, extending 3 years into the future, although alternative high-cost and low-cost projections are also made. In testing the actuarial soundness of the SMI program, it is not considered appropriate to look beyond the period for which premium rates have been established.

The amount of the SMI trust fund may be compared with that program's liability for claims incurred but not yet paid. In recent years the amount of the SMI trust fund has exceeded this liability.

### Estimated Effects of Varying Economic Conditions

An approximation formula can be developed for differential effect on trust fund ratios of varying economic "scenarios" as follows:

$$\text{Let } B_t = \Delta W_t - \frac{1}{2}(\Delta A_{t-1} + \Delta A_t) - 1.3 \Delta U_t$$

Where  $\Delta W_t$  is the change in assumed nominal wages in percent in year  $t$ ;

$\Delta A_t$  is the assumed automatic benefit increase in percent in year  $t$ ; and

$\Delta U_t$  is the assumed change in percent of unemployment in year  $t$ .

$$\Delta F_n^{a,b} = \sum_{t=1}^n (n-t+1)(B_t^a - B_t^b)$$

Where  $n$  is the number of years in the projection;

(Continued on page 35)

**Table M-9.—OASDI cash benefits: Monthly benefits in current-payment status, by program, 1940–80**

[Data contain some duplication arising from dual entitlement; see the 1976 Annual Statistical Supplement, p. 9]

At end of selected month	Number			Amount (in thousands)		
	Total	OASI <sup>1</sup>	DI <sup>2</sup>	Total	OASI <sup>1</sup>	DI <sup>2</sup>
<b>December:</b>						
1940.....	222,488	222,488	.....	\$4,070	\$4,070	.....
1945.....	1,288,107	1,288,107	.....	23,801	23,801	.....
1950.....	3,477,243	3,477,243	.....	126,856	126,856	.....
1955.....	7,960,616	7,960,616	.....	411,613	411,613	.....
1960.....	14,844,589	14,157,138	687,451	936,321	888,320	\$48,000
1965.....	20,866,767	19,127,716	1,739,051	1,516,802	1,395,817	120,986
1970.....	26,228,629	23,563,634	2,664,995	2,628,326	2,385,926	242,400
1971.....	27,291,508	24,361,500	2,930,008	3,058,957	2,763,022	295,934
1972.....	28,476,028	25,204,542	3,271,486	3,916,203	3,514,741	401,462
1973.....	29,868,145	26,309,163	3,558,982	4,269,863	3,821,165	448,698
1974.....	30,852,817	26,941,483	3,911,334	5,001,918	4,445,170	556,748
1975.....	32,084,511	27,732,311	4,352,200	5,727,758	5,047,656	680,102
1976.....	33,023,552	28,399,725	4,623,827	6,415,103	5,624,858	790,246
1977.....	34,082,556	29,228,350	4,854,206	7,175,513	6,270,000	905,513
1978.....	34,586,771	29,718,195	4,868,576	7,930,576	6,933,292	997,284
1979.....	35,125,066	30,347,848	4,777,218	9,056,622	7,950,300	1,106,322
<b>1979</b>						
May.....	34,814,539	29,951,882	4,862,657	8,056,506	7,050,195	1,006,311
June.....	34,737,088	29,910,696	4,826,392	8,860,813	7,755,884	1,104,929
July.....	34,672,823	29,876,768	4,796,055	8,870,548	7,766,925	1,103,623
August.....	34,770,792	29,979,985	4,790,807	8,908,004	7,804,598	1,103,406
September.....	34,886,934	30,094,278	4,792,656	8,951,367	7,846,238	1,105,130
October.....	34,998,465	30,206,861	4,791,604	8,994,443	7,888,172	1,106,271
November.....	35,024,922	30,251,215	4,773,707	9,020,083	7,914,955	1,105,129
December.....	35,125,066	30,347,848	4,777,218	9,056,622	7,950,300	1,106,322
<b>1980</b>						
January.....	35,180,555	30,418,448	4,762,107	9,091,626	7,986,984	1,104,642
February.....	35,251,563	30,484,978	4,766,585	9,119,949	8,014,056	1,105,893
March.....	35,235,589	30,465,844	4,769,745	9,118,244	8,011,205	1,107,040
April.....	35,267,320	30,493,317	4,774,003	9,132,288	8,023,731	1,108,557
May.....	35,295,311	30,523,440	4,771,871	9,146,826	8,038,060	1,108,766

<sup>1</sup> Benefits paid from the OASI trust fund to retired workers and their dependents and to all survivors. Includes special benefits authorized by 1966 legislation for persons aged 72 and over not insured under the regular or

transitional provisions of the Social Security Act.

<sup>2</sup> Benefits paid from the DI trust fund to disabled workers and their dependents.

**Current Developments in Financing**  
(Continued from page 20)

t is the first, second, third, etc., year of the projection; and  
 $\Delta F_n^{a,b}$  is the difference in trust fund ratios at the beginning of year n + 1 on the basis of alternative economic assumptions a and b.

The principal assumptions of this approximation method are as follows:

- (1) Expenditures and income are in approximate balance.
- (2) There is a 30-percent excess effect on covered payroll due to changes in unemployment.
- (3) The interest rate applicable to the trust fund approximates the growth in expenditures.

The approximation method gives less reliable results for longer projection periods; however, under current conditions it should approximate differentials in trust-fund ratios within 1 percent or 2 percent for projection periods up to 5 years for the combined OASDI funds.