Actuarial Status of the Social Security and Medicare Programs

The Boards of Trustees for the two Social Security and the two Medicare Trust Funds recently released their annual reports to Congress detailing the operations of the trust funds during 1991 and their projected financial status for future years. Based on the Trustees' best estimates, the reports show:

- The Federal Old-Age and Survivors Insurance (OASI) Trust Fund will be able to pay benefits for about 50 years. Congress will eventually need to take action to assure the long-range financing of the program.
- The Federal Disability Insurance (DI) Trust Fund will be able to pay benefits for only about 5 years and is not adequately financed. As a result, the Board is required to make a separate report to the Congress on the unfavorable financial condition of this trust fund. The Board urges that prompt legislative action be taken to improve the financial integrity of the trust fund, after a review of the disability program.
- The Federal Hospital Insurance (HI) Trust Fund will be able to pay benefits for only about 10 years and is severely out of financial balance in the long-range. The Trustees urge the Congress to take additional actions designed to control HI program costs either through specific program legislation or as a part of enacting comprehensive health care reform.
- The Federal Supplementary Medical Insurance (SMI) Trust Fund is financed on a year-by-year basis and, on this limited basis, is adequately financed. The Trustees urge the Congress to take additional actions designed to control SMI costs either through specific program legislation or as part of enacting more comprehensive health care reform.

In past years, the Social Security Bulletin has published separate summaries of the Trustees Reports for the Social Security and the Medicare Trust Funds. This year, however, the Boards of Trustees of the four trust funds issued a joint summary of their 1992 annual reports to Congress. This article is adapted from the joint summary and from the more detailed annual reports.¹ It is organized into three sections: first, general information on the trust funds (how they are financed, administrative expenses, their status in 1991, and their short-range and long-range outlooks); next, the conclusions of the Trustees (including the conclusions from the more detailed annual reports); and then, a message from the Public Trustees.

The Annual Reports of the Boards of Trustees detail the operations of the two Social Security Trust Funds and the two Medicare Trust Funds. The Social Security Trust Funds are the Federal Old-Age and Survivors Insurance (OASI) Trust Fund, which pays retirement and survivors benefits, and the Federal Disability Insurance (DI) Trust Fund, which pays benefits after a worker becomes disabled. The Medicare Trust Funds are the Federal Hospital Insurance (HI) Trust Fund, which pays for hospital and related care ("Part A") for persons aged 65 or older and workers who are disabled, and the Federal Supplementary Medical Insurance (SMI) Trust Fund, which pays for physician and outpatient services ("Part B") for persons aged 65 or older and workers who are disabled. When both OASI and DI are considered together, they are called the OASDI program. Because OASI and DI are both financed by payroll taxes and taxes on benefits, the OASI and DI trust funds are often combined for the purpose of evaluating the overall actuarial status of the OASDI program. The Medicare Trust Funds are not usually considered together because they are funded differently.

Financing

Most OASDI and HI revenue consists of taxes on earnings that are paid by employees, their employers, and the self-employed. The tax rates are set by law and apply to earnings that do not exceed the earnings base (which is also set by law and increases as average wages increase). In 1992, the earnings base for OASDI is \$55,500 and for HI it is \$130,200. The rates employees and employers each are scheduled to pay under current law are:

Program	1990-99	2000 and later	
Total	7.65	7.65	
OASDI	6.20	6.20	
OASI	5.60	5.49	
DI	.60	.71	
HI	1.45	1.45	

Persons who are self-employed are charged the equivalent of the combined employer and employee shares, but only on 92.35 percent of their net earnings. In addition, self-employed persons may deduct one-half of the combined tax from their income that is subject to Federal income tax.

All the trust funds receive income from interest earnings on trust fund assets and from miscellaneous sources. The OASI and DI Trust Funds also receive revenue from the partial taxation of Social Security benefits.

The SMI (or Part B) program is financed similarly to yearly renewable, term insurance. Participants pay premiums each year that cover about one-fourth of the cost; the rest is paid for by the Federal Government from general revenues. The 1992 monthly premium is \$31.80.

In all trust funds, assets that are not needed to pay current benefits or administrative expenses (the only purposes for which trust funds may be used) are invested in special issue U.S. Government securities guaranteed as to both principal and interest and backed by the full faith and credit of the U.S. Government.

Administrative Expenses in 1991

The fiscal year 1991 cost of administrative expenses as a percentage of benefit payments was:

Program	Percent	
OASDI	1.0	
OASI	.7	
DI	2.9	
HI	1.4	
SMI	3.3	

Operations of the Trust Funds in 1991

All four trust funds showed an increase in assets during calendar year 1991. At the end of the year, 40.6 million persons were receiving OASDI benefits and about 34 million persons were covered under Medicare. Trust fund operations are shown in table 1.

The annual reports of the Boards of Trustees make both short-range (10-year) and long-range (75-year) estimates. Short-range estimates are reported for all funds, and long-range estimates are made for the OASI, DI, and HI Trust Funds. Because the future cannot be predicted with certainty, three alternative sets of economic and demographic assumptions are used to show a range of possibilities. Assumptions are made about economic growth, inflation, unemployment. fertility, immigration, and mortality, as well as specific factors relating to disability, hospital, and medical services costs.

Alternative II, the intermediate assumptions, reflects the Trustees' best estimate of what the future experience will be. Alternative I is more optimistic and shows how the trust funds would operate if economic and demographic conditions are better than anticipated; alternative III is more pessimistic and shows how the trust funds would operate if these conditions are worse than anticipated.

Several tests, based on the intermediate assumptions, are used to review the financial status of the trust funds. For the OASI, DI, and HI Trust Funds, the short-range test is met if, throughout the next 10 years, the trust fund ratio (the amount in the trust fund at the beginning of a year divided by the projected outgo for the year) is at least 100 percent. The short-range test is also met if the trust fund ratio is initially less than 100 percent, but reaches 100 percent within the first 5 years and stays at or above 100 percent, and there is enough income to pay benefits on time every month during the 10 years.

The long-range test is met for these trust funds if a fund has an actuarial deficit of no more than 5 percent of the cost rate over the 75 years, and the actuarial deficit for any period of the first 10 years or longer is less than a graduated amount of 5 percent. If the long-range test is met, the trust fund is said to be in "close actuarial balance."

The SMI Trust Fund is actuarially sound for any period in which the trust fund assets and projected income are enough to cover the projected outgo and there are enough assets to cover costs incurred but not yet paid. The adequacy of the fund is measured only for years for which both the beneficiary premiums and the general revenue contributions have been set.

Short-Range Outlook (1992-2001)

The charts in this section and the next illustrate the status of the OASI, DI, and HI Trust Funds together because they are financed the same way. The SMI Trust Fund is financed

Table 1.—Operations of the combined OASI and DI Trust Funds, and the HI and SMI Trust Funds, 1991

	(In billions)		
Item	OASDI	ні	SMI
Assets (end of 1990)	\$225.3	\$98.9	\$15.5
Income during 1991	329.7	88.8	51.2
Outgo during 1991	274.2	72.6	48.8
Net increase	55.5	16.3	2.5
Assets (end of 1991)	280.7	115.2	17.9

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differently and so its status is described separately.

Chart 1 shows the projected shortrange trust fund ratio under alternative II assumptions for OASI, DI, and HI separately. It also shows what the trust fund ratio is for the combined OASDI program.

The OASI Trust Fund ratio line is over the 100 percent level at the beginning of the 10-year period and stays over that level through the year 2001. Therefore, the OASI Trust Fund meets the short-range test of financial adequacy.

However, the trust fund ratio line for DI starts at just over 40 percent and does not reach the 100 percent level for the trust fund ratio at any time in this period; it does not meet the short-range test. Moreover, the DI Trust Fund is expected to be exhausted in 1997 under the intermediate, alternative II assumptions. But, if economic and other conditions in the future turn out to be more pessimistic, as under alternative III, the year of exhaustion for the DI Trust Fund could be as soon as 1995.

The trust fund ratio line for OASDI does reach the 100 percent level in the first 5 years and stays over that level through the year 2001; thus, the combined OASDI program meets the short-range test of financial adequacy.

Although the trust fund ratio line for HI is over the 100 percent level at the beginning of the 10-year period, it falls below that level by 1999. As a result, it does not meet the short-range test. Under alternative II assumptions, the projected year of exhaustion for the HI Trust Fund is 2002; under more adverse conditions, as in alternative III, it could be as soon as 2000.

The financing for the SMI Trust Fund has been set through 1992, and the projected operations of the trust fund meet the test of SMI actuarial soundness.

Long-Range Outlook (1992-2066)

Chart 2 shows the actuarial balance, as a percentage of the cost rate (the outgo from the trust fund expressed as









2011 2016 2021 2026 2031 2036 2041 2046

a percentage of taxable payroll) for OASI, DI, and HI separately under the alternative II assumptions. It also shows the actuarial balance for the combined OASDI program.

-20%

-30%

-40%

-50%

-60%

2001 2006

For a trust fund to meet the longrange test of close actuarial balance, the actuarial balance line for that trust fund must stay above the shaded area throughout the long-range period. The triangle above the shaded area but below the 0 percent level shows the range of allowable deficits a fund can have and still be in close actuarial balance.

None of the three trust funds is in close actuarial balance over the next 75

years. However, the chart shows that the actuarial balance line for OASI, as well as for the combined OASDI program, stays above the shaded area for many years to come.

2051 2056 2061

DI

2066

The actuarial balance line for DI starts well into the shaded area and begins to decline steadily in 2006.

The actuarial balance line for HI also starts well into the shaded area and declines sharply.

The year of exhaustion for the OASI Trust Fund under intermediate assumptions does not occur until 2042—50 years from now. For the combined OASDI program, the year of exhaustion would be 2036—in 44 years.

Conclusions

The status of the Social Security and Medicare programs can be summarized by looking at table 2, which shows the results of the tests used to evaluate the financial status of the trust funds and the number of years before each trust fund is expected to be exhausted under the intermediate assumptions.

Based on the Trustees' best estimates (alternative II assumptions):

- The OASI Trust Fund is expected to be able to pay benefits for about the next 50 years. Because the fund is not in close actuarial balance for the 75-year long-range period, the Board recommends continued study of possible ways of addressing the deficits for those future years.
- The DI Trust Fund is not adequately financed, but it will be able to continue paying benefits for about 5 years. The Board is making a separate report to Congress to recommend prompt legislative action to improve the financial integrity of this trust fund, after a review of the disability program.
- The OASI and DI Trust Funds combined are estimated to continue growing for more than 20 years and would not be exhausted until 2036. Although the need is not immediate, the Board recommends that action be taken in due course to strengthen the long-range financing of the OASDI program.
- The HI Trust Fund will be able to pay benefits for only about 10 years and is severely out of actuarial balance over the next 75 years. Because of the magnitude of the projected actuarial deficit in the HI program and the high probability that the HI Trust Fund will be exhausted shortly after the turn of the century, the Trustees urge the Congress to take additional actions to control HI program costs either

through specific program legislation or as a part of enacting more comprehensive health care reform.

• The SMI program, although actuarially sound, has experienced rapid growth: program outlays have increased 80 percent in the past 5 years and grew 36 percent faster than the economy as a whole. Because this growth shows little sign of abating, the Trustees urge the Congress to take additional actions to control SMI costs either through specific program legislation or as part of enacting more comprehensive health care reform.

OASI and DI Trustees' Report²

When each trust fund is examined separately, the OASI Trust Fund is well financed over the next 10 years and passes the short-range test of financial adequacy by a wide margin. However, the DI Trust Fund does not meet the short-range test of financial adequacy. Moreover, based on the intermediate assumptions, the DI Trust Fund will be exhausted in 1997, unless corrective legislation is enacted.

The OASI and DI Trust Funds, if combined, would be adequately financed over the next 10 years, and for many years thereafter. The assets of the combined funds are continuing to grow rapidly, as shown by the estimates of financial operations presented in the 1992 Annual Report. The combined assets of the trust funds would reach a level of at least one year's expenditures by the beginning of 1993 under any of the three sets of economic and demographic assumptions. The combined funds are projected to continue to grow during the next 10 years, and for many years thereafter, under each of the three sets of assumptions. However, while the assets of the combined funds, in nominal dollars, continue to grow under alternative III for the next two decades, 1992 through 2011, the trust fund ratio of assets to annual expenditures begins to decline in the second decade.

Although the combined trust funds are well financed over the next 10 years and are expected to continue growing for the next three decades under the intermediate assumptions, the OASDI program is not in close actuarial balance over the next 75 years, based on these assumptions. The estimates indicate that the combined trust funds would be sufficient to enable the timely payment of benefits for about the next 45 years. Considering each fund separately, the OASI Trust Fund would have sufficient funds for the next 50 years, but, as noted above, the DI Trust Fund would be sufficient for only about the next 5 years, without corrective legislation. On the basis of the more pessimistic assumptions in alternative III, the combined funds would be sufficient to enable timely payment of benefits for about the next 25 years. The DI fund by itself, however, would be exhausted in 1995 without corrective legislation. Based on the more optimistic assumptions of alternative I, the combined funds would continue to grow throughout the next 75 years, and they would be sufficient to enable timely payment of benefits during all of

Table 2.-Financial status of the OASI, DI, HI, and SMI programs

Is the test met?		Years
Short range (10 years)	Long range (75 years)	until exhaustion
Yes	No	44
Yes	No	50
No	No	5
No	No	10
	Short range (10 years) Yes Yes No	Short range (10 years)Long range (75 years)YesNoYesNoNoNo

the long-range period. However, the DI fund would be exhausted in 2060 without corrective legislation.

Over the next 24 years, OASDI income from payroll taxes and income taxes on benefits is expected to exceed total expenditures based on the intermediate assumptions. Starting about 15-20 years from now, however, OASDI costs as a percentage of taxable payroll are projected to begin increasing rapidly as the "baby boom" generation reaches retirement age. In contrast, the program's income from payroll taxes and income taxes on benefits will represent a relatively level percentage of taxable payroll.

Therefore, under the intermediate assumptions, the OASDI cost rate is projected to exceed the income rate from 2016 through the end of the projection period, with the shortfall reaching 4.95 percent of taxable payroll by 2066, the end of the 75-year projection period. Based on the less favorable conditions assumed in alternative III, the crossover point would be reached in about 2002, and the shortfall would grow eventually to about 13.74 percent of payroll by 2066. With more favorable conditions, such as the alternative I assumptions, the cost rate would exceed the income rate only briefly (2024 through 2040); from 2041 through the end of the projection period, the income rate would exceed the cost rate, reaching a positive balance of 0.47 percent of payroll by the end of the 75-year period.

Although the OASDI annual balances become negative after the first 24 years, the availability of interest earnings, in addition to tax revenues, results in projected trust fund growth (in dollars) that would continue for another 8 years. Because expenditures are estimated to increase at a faster rate than assets, however, OASDI assets would decline relative to annual disbursements, from about 3.3 times to about 2.6 times annual expenditures, during the same period.

The actuarial balance of the OASDI program as a whole over the next 75 years is a deficit of 1.46 percent of taxable payroll, based on the intermediate assumptions. This deficit represents about 10.0 percent of the estimated cost rate over the next 75 years, and is therefore larger than the maximum 5-percent level allowed over that period by the test for close actuarial balance. Furthermore, beginning with the 1992-2037 period, and for all successively longer periods through the full 75-year period, the actuarial balances are deficits that are larger than the maximum level allowed for close actuarial balance. Thue, the OASDI program is not in close actuarial balance.

Each trust fund, separately, is also out of close actuarial balance. On the basis of the intermediate assumptions, the OASI Trust Fund has an actuarial deficit of 1.01 percent of taxable payroll, representing 7.9 percent of the OASI long-range cost rate. The DI Trust Fund's actuarial deficit of 0.46 percent of taxable payroll is much larger relative to the DI long-range cost rate, representing 24 percent of the cost rate.

In view of the worsening condition of the DI Trust Fund since the 1991 report was released, and the failure of the fund to meet either the short-range test of financial adequacy or the longrange test of close actuarial balance, the Board of Trustees is making a separate report to the Congress on the unfavorable financial status of the DI Trust Fund, as required under section 709 of the Social Security Act. Because of the inadequate DI fund levels, the Board urges that prompt legislative action be taken to improve the financial integrity of the DI Trust Fund, after a review of the DI program by the Congress and the Social Security Administration.

Because the OASDI program is not in close actuarial balance in the long range, possible ways of addressing the long-range deficits should continue to be the subject of extensive study. Although this situation is not as immediate as the need to improve the financial condition of the DI Trust Fund, action should be taken to strengthen the long-range financing of the OASDI program following the development of appropriate options.

HI Trustees' Report ³

The balance in the Federal Hospital Insurance Trust Fund at the beginning of 1992 was 136 percent of estimated outgo for calendar year 1992, above the minimum 100 percent level recommended by the Board of Trustees. The tax rates specified in the law are sufficient, along with interest earnings and assets in the fund, to support program expenditures only over the next 10 years, under the Trustees' intermediate assumptions. However, the trust fund does not meet the short-range test of financial adequacy. Any significant adverse deviation from these projections could result in the inability of the fund to meet its obligations much sooner than projected.

Over the 75-year projection period, the tax rate necessary to provide for benefits and administrative expenses far exceeds the tax rate scheduled in the law in most years. The actuarial balance (including the cost of attaining a trust fund balance at the end of the period equal to 100 percent of the following year's estimated expenditures, and including an offset to cost due to the beginning trust fund balance) is -1.35 for the first 25-year projection period, -3.10 for the first 50-year projection period, and -4.20 over the entire 75-year projection period, under the alternative II assumptions. The actuarial balances for the 25-year subperiods (including neither the trust fund balance at the beginning of the period nor the cost of attaining a non-zero trust fund balance at the end of the subperiod) are -1.30, -5.22, and -7.51 for the first, second, and third 25-year subperiods, respectively, under the alternative II assumptions. The trust fund does not meet the Trustees' long-range test of financial adequacy under any of the three assumption sets. In order to bring the HI program into actuarial balance even for the first 25-year projection period under the alternative II assumptions, either outlays will have to be reduced by 32 percent or income increased by 47 percent (or some combination thereof).

There are currently about four covered workers supporting each HI

enrollee. This ratio will begin to decline rapidly early in the next century. By the middle of that century, there will be only about two covered workers supporting each enrollee. As the post-World War II "baby boom" population becomes eligible for benefits, the annual rate of increase in program costs as a percentage of taxable payroll rises substantially, from 2.5 percent in 2010 to 3.4 percent in 2015 under alternative II. Not only are the anticipated reserves and financing of the HI program inadequate to offset this demographic change, but under all the assumptions, the HI Trust Fund is projected to become exhausted even before the major demographic shift begins to occur. Exhaustion is projected to occur shortly after the turn of the century, in 2002 under the alternative Il assumptions, and could occur as early as 2000 if the pessimistic assumptions were to happen.

The Trustees note that some steps to attempt to reduce the rate of growth in payments to hospitals have been taken. including the implementation of prospective payment and diagnosisrelated groups. Initial experience under the prospective payment system for hospitals suggests that this payment mechanism may be an effective means of constraining the growth in hospital payments and improving the efficiency of the hospital industry. Nonetheless, projected costs for the HI program far exceed projected revenues over the 75year long-range period. As a result, the HI program is severely out of financial balance.

The HI program is projected to increase from 1.3 percent of Gross Domestic Product (GDP) in calendar year 1991 to 4.7 percent of GDP in calendar year 2065. This rapid growth is attributable primarily to (1) increases in hospital admissions, and (2) increases in reported case mix. With the magnitude of the projected actuarial deficit in the HI program and the high probability that the fund will be exhausted shortly after the turn of the century, the Trustees urge the Congress to take additional actions designed to control HI program costs either through specific program

legislation or as part of enacting more comprehensive health care reform.

SMI Trustees' Report 4

The financing for the Supplementary Medical Insurance program has been established through December 1992 by the setting of the standard monthly premium rate (paid by or on behalf of each enrollee) of \$31.80 for calander year 1992 and of actuarial rates that determine the amount to be contributed from general revenue on behalf of each enrollee. General revenue contributions are expected to account for 73.0 percent of all SMI income during calendar year 1992.

Under alternative II assumptions, disbursements are estimated to exceed income during calendar year 1992 by \$4,361 million. Income is composed of premiums paid by the enrollees, general revenue contributions, and interest earned by the trust fund. As a result, the assets in the trust fund on a cash basis are estimated to decrease from \$17.9 billion at the end of calendar year 1991 to \$13.6 billion at the end of calendar year 1992.

The main reason for the decrease in assets during calendar year 1992 is that the financing for calendar year 1992 was established specifically to reduce assets. As a result, the excess of assets over liabilities is expected to decrease from \$11,738 million at the end of December 1991 to \$6,384 million by the end of December 1992. representing 9.9 percent of the following year's projected incurred expenditures. Under more pessimistic assumptions as to cost increases, assets based on financing already established will still be sufficient to cover outstanding liabilities. Hence, the financing established through December 1992 is sufficient to cover projected benefit and administrative costs incurred through that period, and to maintain a level of trust fund assets adequate to cover the impact of a reasonable degree of variation between actual and projected costs.

Even though the projections under alternative II show that the financing is adequate through 1992, the lack of experience under the newly implemented physician fee schedule contributes to greater uncertainty of the projections. If volume and intensity of services increase by more than expected, then SMI assets could be reduced more than projected, possibly to an unacceptably low level.

Although the SMI program is currently actuarially sound, the Trustees note with concern the past and projected rapid growth in the cost of the program. Growth rates have been so rapid that outlays of the program have increased 80 percent in aggregate and 66 percent per enrollee in the past 5 years. For the same time period, the program grew 36 percent faster than the economy despite recent efforts to control the cost of the program. As a result, the program is projected to increase from 0.88 percent of the GDP in calendar year 1991 to 4.75 percent in calendar year 2065. This rapid growth is attributable primarily to the inability to control the rapid growth in (1) the volume of services billed per beneficiary, and (2) the reported case mix intensity (the reporting of services that receive higher reimbursement). Given the past and projected cost of the program, the Trustees urge the Congress to take additional actions designed to control SMI costs either through specific program legislation or as part of enacting more comprehensive health care reform.

Message from the Public Trustees

Five persons serve on the Social Security and Medicare Boards of Trustees. Three members are from the Federal Government (the Secretary of the Treasury, the Secretary of Labor, and the Secretary of Health and Human Services), and two members are appointed by the President and confirmed by the Senate to represent the public. For the 1992 annual reports, the Public Trustees were Stanford G. Ross and David M. Walker. In the 1992 summary, the Public Trustees included the following message. Based on the best estimates of the Trustees (intermediate assumptions), the short-range projections show that:

- The Federal OASI Trust Fund is well financed over the next 10 years and meets the Trustees' test of short-range financial adequacy. The Federal SMI Trust Fund is financed on a year-byyear-basis and is currently actuarially sound.
- The Federal DI Trust Fund does not meet the short-range test of financial adequacy and is projected to be exhausted in 1997. As a result, the Trustees are required to issue a special report to Congress on the financing of this fund. This report calls for a review of the program with a view of taking prompt action to strengthen the financial stability of the trust fund.
- The Federal HI Trust Fund does not meet the short-range test of financial adequacy and is projected to be exhausted in 2002.

In addition, the long-range projections show that:

- None of the trust funds that are measured over a 75-year period— OASI, DI, or HI—meets the Trustees' long-range test of close actuarial balance, and the Congress is likely to have to take action in due course to improve the long-range financial integrity of these programs.
- Importantly, while the OASI Trust Fund is projected to have adequate funds to meet benefit payments for the next 50 years, it is not adequately financed over the entire 75-year projection period. Thus, the long-range financing of this program should be considered when legislative changes are made.

The Public Trustees made the following points about the Medicare program:

• The HI and SMI programs have both experienced rapid growth in costs. These growth rates are not projected to decline significantly in the near future. As a result, these programs are projected to represent an increasing percentage of the Federal budget and the overall economy.

• Given these alarming trends, the Trustees urge the Congress to take appropriate action to control costs either through specific program legislation or as part of enacting more comprehensive health care reform.

Notes

¹ Material for this article is based on Status of the Social Security and Medicare Programs: A Summary of the 1992 Annual Reports, April 1992, and the Annual Reports of the Social Security (OASI and DI) and Medicare (HI and SMI) Boards of Trustees, April 3, 1992. Single copies of the Summary and the full reports are available from the Social Security Administration, Office of Public Inquiries, Room 4100 Annex Building, 6401 Security Boulevard, Baltimore, MD 21235.

² 1992 Annual Report of the Boards of Trustees of the Federal OASI and DI Trust Funds, pp. 31-33.

³ 1992 Annual Report of the Board of Trustees of the Federal Hospital Insurance Trust Fund, pp. 26-28.

⁴ 1992 Annual Report of the Board of Trustees of the Federal Supplementary Medical Insurance Trust Fund, pp. 23-25.