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Report to Congressional Requesters

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SOCIAL SECURITY

Past Projections and Future Financing Concerns

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The Honorable Charles Grassley
United States Senate

The Honorable Nancy Kassebaum
United States Senate

This report reviews past and current projections for the Social Security system and the economic and demographic assumptions, adopted by the Board of Trustees, that underlie the projections. The report responds to your request for information concerning the projections and their implications for budget planning.

The first part of the report reviews past projections and assumptions for the Old-Age and Survivors Insurance trust fund. The second part reviews recent projections since the passage of the 1983 Amendments and the current projections and assumptions contained in the 1985 Annual Report of the Board of Trustees for the Old-Age and Survivors Insurance and Disability Insurance trust funds. The budgetary and economic implications of the current projections are also discussed.

As arranged with your offices, we are sending copies of this report to the various congressional committees and subcommittees with responsibility for the Social Security program as well as to the Department of Health and Human Services, the Office of Management and Budget, and other interested parties.

Richard L. Fogel
Director

Executive Summary

Throughout the mid-1970's and early 1980's, the Social Security retirement system faced continuing financial difficulties. The 1983 Amendments to the Social Security Act were intended to restore the system's financial health, both in the short run and in the long run. While the Amendments have alleviated the short-run problems, concern about the system's long-term financing is beginning to focus on the implications of current projections, which show the buildup of substantial reserves in the trust fund starting in the 1990's.

Members of the Senate Budget Committee, concerned about the quality of the nation's budget planning, have questioned whether "decisions made on the basis of inaccurate estimates may lock us into unobtainable or unaffordable plans." They asked GAO to provide:

- an independent assessment of the accuracy of past Social Security spending and revenue projections and
- a full discussion of trust fund revenue and spending projections based on provisions of the 1983 Social Security Amendments. (See pp. 44 to 72.)

Background

The 1939 Amendments to the Social Security Act created the Old-Age and Survivors Insurance (OASI) trust fund and began the evolution to what was subsequently accepted as a "pay-as-you-go" financing concept for Social Security. Under this financing concept, most annual revenues from the payroll tax are paid out concurrently to retirees as benefit payments.

The Social Security system evolved to include Disability Insurance (DI) in 1956 and a hospital insurance system (Medicare) in 1965. Each maintains a separate trust fund for managing income and disbursements. Because OASI existed for nearly 20 years before DI was established, GAO focuses primarily on the OASI trust fund in reviewing past projections. In examining the future effects of the 1983 Amendments, however, the analysis considers the combined OASI and DI (or OASDI) trust fund.

Results in Brief

Through 1982, projections of the OASI trust fund balance have been inaccurate. This is not surprising, however, as error is inherent in most economic and financial projections. Moreover, the primary cause of the inaccuracy and the predominant direction of the errors have differed at various points in the program's history. (See pp. 28 to 43.)

While the 1983 Social Security Amendments have successfully stabilized the OASDI trust fund in the short run, whether they solved the long-run problem is uncertain. A large buildup of trust fund reserves, expected to begin in the 1990's, will move the program away from pay-as-you-go financing. The buildup is considered necessary to bring the program into long-range actuarial balance.

Adverse economic conditions or congressional changes to the Social Security tax rate or benefit structure could lessen the reserve accumulation. If the buildup actually occurs, however, it is unclear what effect it will have on national savings and future economic growth. This will depend on how the reserve funds are used or "invested," which in turn will be determined largely by whether the non-Social Security portion of the budget is balanced or in deficit.

GAO's Analysis

Economic Conditions Not Foreseen

The difficulties inherent in projecting economic and demographic conditions become evident when projections made by the Social Security Administration before 1983 are reviewed. Before 1972, a conservative methodology led to consistent underestimates of future trust fund balances. After 1972, the methodology changed in a way that required the Trustees to adopt assumptions about future economic activity. The unstable economic conditions experienced by the U.S. economy in the mid and late 1970's rendered both the Trustees' assumptions and the Social Security Administration's projections highly inaccurate. More importantly, these conditions resulted in major financial problems for the OASI trust fund.

Unforeseen Long-Term Demographic Trends

The accuracy of the projections over the long term depends not only on the economic assumptions but also on assumptions about future demographic trends, such as rates of fertility and mortality. The end of the baby boom in the 1960's was not foreseen by the Trustees (and others), nor were increases in life expectancy in the 1970's fully anticipated. Subsequently, recognition increased that the system faced a serious long-term problem due to projected increases in the ratio of beneficiaries to workers beginning when the first members of the baby boom generation retire after 2010. (See pp. 35 to 41.)

Large Reserves Projected

In the short run, the provisions of the 1983 Amendments improved the financial outlook for the OASDI trust fund. In the long run, the projections show a period of accumulation of substantial reserves followed by a period of drawdown. Under one set of assumptions the trust fund balance is projected to equal $12.1 trillion by 2030. (See pp. 50 to 55.)

Reserve Buildup Could Finance Future Benefits

One rationale for departing from pay-as-you-go financing by accumulating a trust fund reserve is a possible positive effect on future national income. The reserve buildup can be justified as an attempt to increase aggregate savings to promote economic growth. If successful, this policy may reduce the tax burden future generations of workers would otherwise bear under a pay-as-you-go system in order to finance the benefits of the baby boom generation. (See pp. 65 to 68.)

Potential Congressional Action

Whether the projected accumulation actually occurs depends on both future economic conditions and congressional action. A period of declining real wages could reduce substantially the magnitude of the accumulation. If the projection proves accurate, the Congress could use the surplus to reduce payroll taxes, increase benefits, or loan funds to the Medicare program, which is projected to experience financing problems in the late 1990's. (See pp. 58 to 63.)

Trust Funds Could "Invest" In Future Deficits

Other issues are raised if a trust fund accumulation actually occurs. While the trust fund buildup can be viewed as a way to increase retirement savings, there is reason to question whether this will raise aggregate savings for the nation as a whole. If the non-Social Security part of the federal budget was in deficit, the trust fund would have to be used to finance or in effect be "invested" in the budget deficit. This occurs even though Social Security is now excluded from the unified budget. It is uncertain whether such an "investment" would contribute to future economic growth. (See pp. 66 to 68.)

Other Issues Raised by the Buildup

Other issues a proposed reserve accumulation raises concern: possible negative economic effects of increased payroll taxes in the short run; debt management and monetary policy issues in the long run; and the appropriateness of using a rate of payroll taxation that is higher than required to pay current benefits, as a vehicle to increase national saving. Because of these and other issues, some economists have proposed returning Social Security to pay-as-you-go financing with a substantial

contingency reserve. This would be achieved by modifying the currently scheduled payroll tax increases. However, action to lessen the reserve accumulation could move the system away from long-run actuarial balance and leave future financing issues unresolved. (See pp. 68 to 72.)

Recommendations

GAO is making no recommendations.

Agency Comments

GAO asked the Department of Health and Human Services to comment on a draft of this report. In general, the Department found GAO's analysis useful and valid but raised a number of technical points requiring clarification. Their comments were helpful, and changes were made where appropriate.

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Figures

Abbreviations

COLA	cost-of-living adjustments
CPI	Consumer Price Index
CPI-W	Consumer price index for wage and clerical worker families
DI	Disability Insurance
DRI	Data Resources Incorporated
GAO	General Accounting Office
GNP	Gross National Product
HHS	Department of Health and Human Services
HI	Health Insurance (Medicare)
OASI	Old Age and Survivors' Insurance
OASDI	Old Age, and Survivors' and Disability Insurance
SSA	Social Security Administration
TFR	Total Fertility Rate

Introduction

When the Congress passed the Social Security Act in 1935, the United States was in the middle of the Depression. In addition to widespread unemployment, more than a third of retirement-age persons were living in poverty. About 1 million people 65 years or older depended on public assistance for their basic needs.

With passage of the Social Security legislation, the Congress aimed to provide a permanent response to the economic problems the Depression had created. By assuring a retirement income to workers covered[1] by the act, Social Security would meet the dependency needs of the growing elderly population, which a congressional report of the time projected would double to 15 million by 1970.[2] That Social Security has become a major source of income for retirees is demonstrated by the fact that today the percentage of persons 65 or older living in poverty has dropped to 12.4 percent.[3]

Over the years, the scope of Social Security has expanded considerably. To its retirement benefits, the Congress in 1939 added benefits for aged wives and widows, children, and aged dependent parents of deceased workers, and established the Old-Age and Survivors Insurance (OASI) trust fund.[4] By 1983, survivor benefits accounted for about one-fourth of OASI benefit payments.[5]

The Social Security system evolved to include in 1956 Disability Insurance (DI) for disabled workers and dependents and in 1965 hospital insurance (HI or Medicare) to finance medical services for the aged and disabled. Each of these programs derives its revenues primarily from payroll taxes, and each maintains a separate trust fund for managing income and disbursements. Because OASI existed for nearly 20 years before another Social Security trust fund was established, this report focuses primarily on the OASI trust fund to review the accuracy of past

[1]The term "covered employees" refers to employment in occupations covered by Social Security.

[2]The U.S. House of Representatives, 74th Congress, The Social Security Bill, Report No. 615 (to accompany H.R. 7260, Apr. 5, 1935, p. 4). Also note that reference to current population statistics shows that by 1970, there were nearly 20 million persons 65 years and older, and a projected population of more than 35 million older Americans by the year 2000.

[3]U.S. Department of Commerce, Money Income and Poverty Status of Families and Persons in the United States: Current Population Reports, Series p-60, No. 149, Aug. 1986, p. 26.

[4]U.S. House of Representatives, 76th Congress, Social Security Act Amendments of 1939, Report No. 728 (to accompany H.R. 6635), June 2, 1939, pp. 5-9.

[5]U.S. Department of Health and Human Services, Social Security Bulletin, Annual Statistical Supplement, 1983, p. 76.

projections. In examining the future effects of the 1983 Amendments to the Social Security Act, however, our analysis considers the combined OASI and DI (or OASDI) trust funds.[6]

Social Security and the OASI Trust Fund

The major source of income into the OASI trust fund is a payroll tax on earnings up to a statutory maximum. The total payroll tax, which is paid equally by the employee and the employer, was initially set in 1937 at 1 percent each on earnings up to $3,000. The rate has now risen to 5.2 percent each on earnings up to $42,000 in 1986.[7]

Because the payroll tax is proportional to earnings up to the taxable maximum, lower income individuals pay a larger relative share of income than do individuals who earn more than the taxable maximum. For example, an individual earning $10,000 per year will pay an OASI tax of $520 at a rate of 5.2 percent, but one earning $50,000 per year will pay $1,965.60 into the OASI system or an average rate of 3.93 percent. Generally, for all current (1986) incomes above $42,000, the effective payroll tax rate declines.

Retirement benefit payments constitute the major use of the OASI trust fund. The OASI benefit structure can be characterized as progressive, i.e., the benefit formula is weighted to replace a higher portion of lower earned income. For example, a minimum wage earner retiring at age 65 in 1984 would receive benefits that replace about 62 percent of earnings in the year before retirement. On the other hand, a maximum wage earner would receive a much higher benefit, but it would replace less than 24 percent of preretirement earnings.[8]

The 1983 Amendments added to the progressive benefit structure another element—income taxation of OASI benefits. As the threshold

[6]The distinction between OASI and OASDI is not of major significance for the issues discussed in this report. We note the following discussion in Robert J. Myers, Social Security, Richard D. Irwin, Inc., Homewood, Illinois, 1985, p. 32.

"As a result of the 1956 Act, the OASDI program has two separate funds-one for old-age and survivors benefits and the other for disability benefits. This division has no real significance in regard to the financing of the program. It was adopted as a 'guarantee and assurance' that the newly provided disability benefits would not bankrupt the trust fund (if all benefits were to be paid from a single one) in the event that the disability experience proved much less favorable than estimated."

[7]Information presented in appendix II shows that income levels subjected to the payroll tax have increased significantly since 1976 from $15,300 to the current level. Also note the different rate for self-employed persons.

[8]Myers, Social Security, 1985, pp. 104-105.

income from all sources is set at relatively high levels ($32,000 for a married couple; $25,000 for individuals in all other filing categories), individuals with lower income pay no income tax on their Social Security benefits.[9]

The number of beneficiaries and the amount of benefit payments have grown steadily and substantially. In 1985, the Social Security Administration (SSA), the unit of the Department of Health and Human Services (HHS) that administers OASI, will pay benefits to over 32 million beneficiaries, and disbursements from the trust fund are projected at $172 billion. In addition, all but a small percentage of wages and salaries earned in the U.S. economy are covered by OASI payroll taxes.

Concerns About Financial Viability

The Congress requires Social Security's Board of Trustees to report annually on the financial status of the system. In projecting income and disbursement levels since 1972, the Board has adopted assumptions based on the actual economic and demographic experience of the post-World War II era. But, economic conditions in the 1970's turned out much worse than historic experience would have predicted.

These economic conditions, coupled with a change in the 1972 Social Security Amendments which introduced an automatic benefit adjustment for changes in the price level, caused serious problems for the system. As a result, the trust fund contingency reserves had to be used to fund shortfalls in revenue relative to disbursements. Ultimately, the reserves fell to such low levels that the Congress had to institute measures to correct both short- and long-term financial problems through th 1977 and 1983 Amendments to the Social Security Act.

Passage of the 1983 Amendments did not, however, end public concern over Social Security financing issues. Currently the debate on Social Security is beginning to focus on the policy implications of projections based on the 1983 Amendments. These show a substantial surplus in th trust fund starting in the 1990's and continuing into the first half of th 21st century. Under one set of assumptions the trust fund balance is projected to equal $12.1 trillion by 2030.

The projected trust fund buildup and subsequent drawdown during the second quarter of the next century have important implications for future Social Security policy and the federal budget. If it occurs, a

[9]U.S. Department of Health and Human Services, Annual Statistical Supplement, p. 25.

buildup could influence the economy's future rate of capital formation and economic growth. Also, a large trust fund accumulation is likely to have some important effects on economic activity. These include: the possible negative economic effect of increased payroll taxes in the short run; debt management and monetary policy issues in the long run; and equity issues relating to use of the payroll tax as a means to increase national saving and capital formation. At the same time, the trust fund buildup may not occur or, if it does, may not contribute to future economic growth. Either case raises the question of how the system would meet future obligations to beneficiaries.

There also has been recent congressional action concerning the relationship of Social Security to the unified federal budget. From fiscal years 1969-85, Social Security's revenues and expenditures were a part of the unified budget. This meant that reducing the costs of Social Security provided a way of reducing the overall unified budget deficit. To avoid the reduction of Social Security's real benefit levels as a means of reducing the budget deficit, the Balanced Budget and Emergency Deficit Control Act of 1985 (commonly referred to as Gramm-Rudman-Hollings) advanced to fiscal year 1986 the date of removal of Social Security from the unified budget, which had been set to occur in fiscal year 1993 under the 1983 Amendments.[10]

The crises that have confronted the trust fund over the past decade and current discussions over financing of the system are of national concern. Underlying this concern are not only the implications of the projections for the future economic health of Social Security and the nation as a whole, but also for the large number of elderly who depend on this program for their financial support.[11]

Objectives, Scope, and Methodology

Senators Charles Grassley and Nancy Kassebaum, members of the Senate Budget Committee, concerned over continuing crises in Social Security, have questioned whether the future impact of today's budget

[10]We further note, however, that Social Security revenues and disbursements are still included in the calculation of deficit reduction targets under the 1985 Act.

[11]This dependency is illustrated in data found in HHS, Income of the Population 55 and Over, 1982, Mar. 1984, Washington, D.C. These data show that, in 1982, 90 percent of all units (nonmarried persons and couples) age 65 and over received Social Security benefits; 59 percent of all such units relied on Social Security for 50 percent or more of their total income. Also, 84 percent of all aged units with total money income under $5,000 relied on Social Security for 50 percent or more of total income, while 46 percent of all aged units with income between $10,000 and $20,000 relied on Social Security for 50 percent or more of total income.

and appropriation decisions are sufficiently reflected in agency planning estimates. They also indicated concern "that decisions made on the basis of inaccurate estimates may lock us into unobtainable or unaffordable plans . . ." and "that subsequent ad hoc measures may jeopardize the Nation's interests."

Consequently, they asked us to analyze the federal OASI program and determine whether "out-year forecasted costs unreasonably match reality as future years become the budget year" (see app. I).[12] They expressed interest in the economic and demographic assumptions underlying the projections and how they differed from actual experience, and requested a full discussion of the projections based on the 1983 Amendments to the Social Security Act.

Based on the request letter and subsequent staff discussion, our objectives in this report are to provide:

1. An independent assessment of the accuracy of past OASI spending and revenue projections and their underlying economic and demographic assumptions.

2. A full discussion of the revenue and spending projections for the combined OASI and DI (OASDI) trust funds, based on the 1983 Amendments.

In constructing our analysis, we examined the OASI trust fund from its inception. To assess the accuracy of trust fund projections, we compared projections contained in annual Trustees' Reports and other SSA documents with actual experience. This included both the projections for the trust fund itself and the important assumptions underlying the revenue and outlay projections that determine the trust fund balance.

In the second part of our analysis, we examined the current projected outlays and revenues for the OASDI trust fund in the context of a review of the 1983 Amendments to the Social Security Act. This examination was largely prospective, with the major focus on the planned departure from the financing concept that has characterized the Social Security program over much of its history and the projected substantial surplus in the trust fund. We assessed the actuarial and economic rationales for

[12]The Senators' letter requesting this report also included a request for a review of the cost projections in the procurement accounts of The Five Year Defense Program (FYDP). GAO's response is discussed in Underestimation of Funding Requirements in Five Year Procurement Plans (briefing paper) (GAO/NSIAD-84-88, Mar. 12, 1984).

the current projections and the implications for Social Security and federal budget policy as well as future economic policy. Also, we analyzed quantitatively the effect of higher real earnings growth on the future economic well-being of average wage earners.

In conducting this analysis, we surveyed numerous government publications and reports as well as academic studies, books, and journals relating to the Social Security system. In addition, we met with SSA officials and consulted with a number of experts in government and academic institutions concerning the economic and demographic relationships specific to Social Security. Our approach combines these sources and relies on economic analysis to examine the history of Social Security operations and projections as well as to define and identify emerging issues in Social Security policy.

The OASI Trust Fund: Measuring Its Soundness and Making Financial Projections

The 1939 Amendments to the Social Security Act created the OASI trust fund[1] and began the evolution to what was subsequently accepted as a "pay-as-you-go" financing concept for Social Security. While the system has not always operated strictly on a "pay-as-you-go" or "current-cost" basis over its history, it differs markedly from a fully funded private pension system, which must plan to have sufficient assets on hand to pay future benefit claims.

In this chapter, we describe trust fund operations and commonly used measures of the Social Security system's soundness. We also discuss how Social Security makes the projections of future revenues and outlays upon which its assessments of the system's financial status depend. Finally, we briefly examine ways of ascertaining the accuracy of trust fund projections.

The Trust Fund as a Contingency Reserve

The role of the Social Security trust fund as a contingency reserve was clearly established in the letter of transmittal of the first annual report to the Congress by the Board of Trustees of the OASI trust fund in 1941:

"The old-age and survivors' insurance trust fund provides a financial margin of safety for the system against the first impacts of unforeseen changes in the upward trend of disbursements as well as against these short-term fluctuations and contingencies."[2]

Underlying the role of the trust fund as a contingency reserve is the concept of "pay-as-you-go" or "current-cost" financing. Under this concept, the system's "total income in each year is intended to be approximately equal to total outgo plus an additional amount needed to maintain the trust funds at appropriate contingency-reserve levels."[3]

[1]"First, the old-age reserve account is changed to a Federal old-age and survivors insurance trust fund with the Secretary of Treasury, the Secretary of Labor and the Chairman of the Social Security Board, all ex officio, acting as a board of trustees. The board of trustees will supervise the fund and will report to Congress annually and whenever the trust fund becomes unduly small or exceeds three times the higher annual expenditure anticipated in the ensuing 5-fiscal year period." U.S. Department of Health and Human Services, Social Security Act Amendments of 1939, Report No. 728, pp. 14-15.

[2]The First Report of the Board of Trustees of the Federal Old-Age and Survivors Trust Fund, Jan. 3, 1941, p. 4.

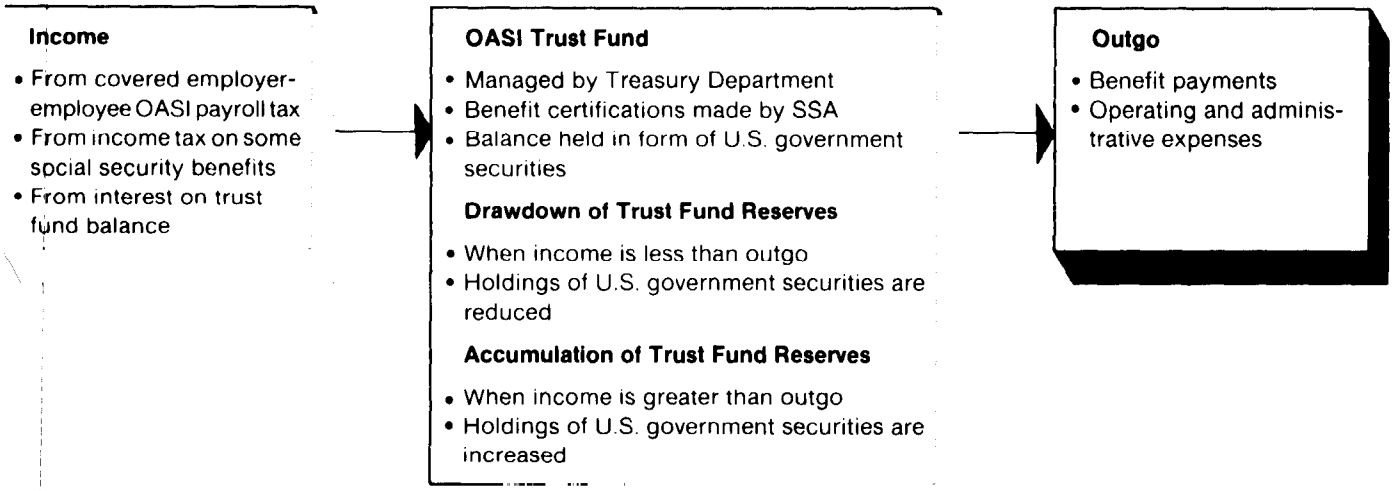
[3]The 1984 Annual Report of the Board of Trustees, OASDI, p. 31. Hereafter referred to as Trustees' Report. While the contingency reserve role of the trust fund and the pay-as-you-go concept have characterized discussions of the trust fund since its early days, the system has not always operated, nor has it always been "projected" to operate, on a pay-as-you-go basis over its history. For example, in the 1940's and 1950's the system's revenues were much higher than disbursements and large reserves accumulated in the trust fund. Also, past projections for the system have sometimes shown future reserves at levels higher than necessary to finance annual benefits.

This means that the system uses payroll taxes collected from current covered workers and their employers to make benefit payments to current beneficiaries. Imbalances between annual revenues and outlays result in adjustments in the trust fund reserve balance, and as such, the trust fund operates as a contingency reserve.

Operations of the Trust Fund

The OASI system operates under the direction of a Board of Trustees composed of the Secretaries of Labor, Health and Human Services, and the Treasury. The 1983 Amendments added two public members (from different political parties) to the Board. The Secretary of the Treasury acts as the managing trustee, responsible for operation of the trust fund and manages its financial operations and collects taxes for the system. SSA, however, maintains earnings records and makes and reviews benefit determinations (see fig. 2.1).

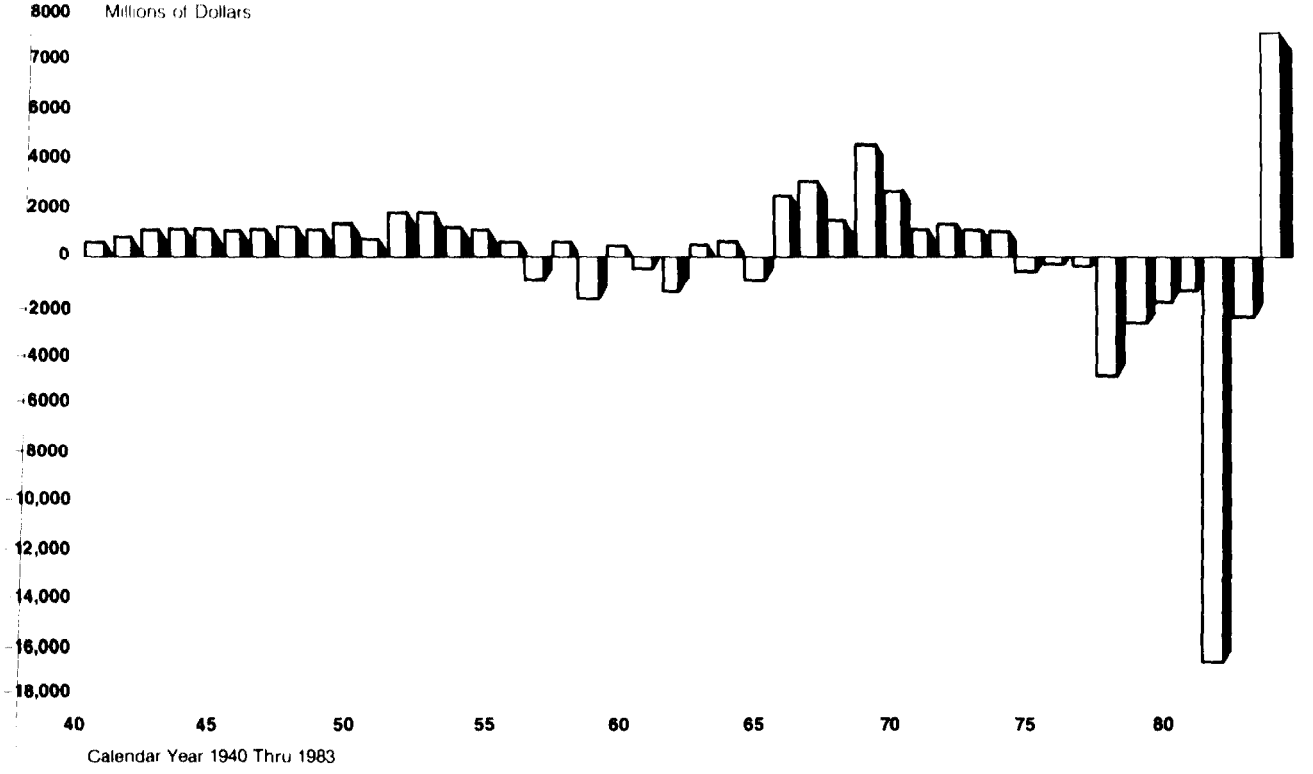
Figure 2.1: OASI Trust Fund Operations



All OASI payroll taxes and, starting in 1984, income taxes paid on Social Security benefits are collected by the Treasury. The Treasury transfers these tax collections to the trust fund, which uses the revenues to pay beneficiaries, meet operating expenses, and purchase U.S. government securities with any excess.

When the trust fund uses its revenues to pay current benefits, the revenues simply pass through the fund. If revenues are greater than current needs, the excess is held in the trust fund as reserves. When OASI reserves increase, the trust fund lends revenues not required for current needs to the Treasury by purchasing securities issued by the Treasury. Such a reserve buildup last occurred between 1966 and 1974, as shown in figure 2.2. When revenues are insufficient to meet current needs, as has been the case for much of the decade prior to 1984, the trust fund "draws down" its reserves by selling securities back to the Treasury.

Figure 2.2: Change in OASI Trust Fund Reserves (1940-84)



Trust Fund reserves are defined here as total assets on hand at year end.

Amounts in nominal dollars

Almost all trust fund assets are held in the form of special issues of the Treasury. These issues earn interest at a rate based on the current yield

on Treasury securities of 4 or more years' duration when issued. Thus, interest payments are additional income to the trust fund.[4]

Until now, the accumulation and drawdown of trust fund reserves and related sales and purchases of U.S. government securities have represented small changes relative to overall Treasury financing operations and national economic activity. For example, table 2.1 shows that trust fund assets increased by $3.6 billion in 1967 and by $4.4 billion in 1969. Both these additions to trust fund reserves represented about 0.5 percent of the nominal Gross National Product (GNP)[5] in 1967 and 1969. OASI trust fund assets were drawn down by nearly $3 billion in 1977 and by $5 billion in 1978, declines that represented less than 0.3 percent of nominal GNP in 1977 and 1978. Total trust fund assets as a percentage of nominal GNP increased from 2.0 percent in 1940 to a maximum of 5.6 percent in 1954 and have been less than 1 percent of GNP since 1980.

[4]For further and more detailed discussion of the trust fund, see Robert J. Myers, Social Security, Richard D. Irwin, Inc., Homewood, Illinois, 1985, and "Investment Policies and Procedures of the Social Security Trust Funds," Social Security Bulletin, Vol. 45, No. 1, Jan. 1982.

[5]The market value of goods and services produced, in current dollars (unadjusted for price changes).

Table 2.1: OASI Trust Fund, 1940-84

Dollars in billions

Calendar year	Total income	Total disbursement	Total assets, year end[a]	Nominal GNP[b]	Percent of total assets to nominal GNP
1940	$ 0.4	$ 0.1	$ 2.0	$ 100.0	2.0
1941	0.9	0.1	2.8	125.0	2.2
1942	1.1	0.2	3.7	158.5	2.3
1943	1.3	0.2	4.8	192.1	2.5
1944	1.4	0.2	6.0	210.6	2.8
1945	1.4	0.3	7.1	212.4	3.3
1946	1.5	0.4	8.2	209.8	3.9
1947	1.7	0.5	9.4	233.1	4.0
1948	2.0	0.6	10.8	259.5	4.2
1949	1.8	0.7	11.8	258.3	4.6
1950	2.9	1.0	13.7	286.5	4.8
1951	3.8	2.0	15.5	330.8	4.7
1952	4.2	2.3	17.4	348.0	5.0
1953	4.4	3.1	18.7	366.8	5.1
1954	5.6	3.7	20.6	366.8	5.6
1955	6.2	5.1	21.7	400.0	5.4
1956	6.7	5.8	22.5	421.7	5.3
1957	7.4	7.5	22.4	444.0	5.1
1958	8.1	8.7	21.8	449.7	4.8
1959	8.6	10.3	20.1	487.9	4.1
1960	11.4	11.2	20.3	506.5	4.0
1961	11.8	12.4	19.7	524.6	3.8
1962	12.6	14.0	18.3	565.0	3.2
1963	15.1	14.9	18.5	596.7	3.1
1964	16.3	15.6	19.1	637.7	3.0
1965	16.6	17.5	18.2	691.1	2.6
1966	21.3	19.0	20.6	756.0	2.7
1967	24.0	20.4	24.2	799.6	3.0
1968	25.0	23.6	25.7	873.4	2.9
1969	29.6	25.2	30.1	944.0	3.2
1970	32.2	29.8	32.5	992.7	3.3
1971	35.9	34.5	33.8	1,077.6	3.1
1972	40.1	38.5	35.3	1,185.9	3.0
1973	48.3	47.2	36.5	1,326.4	2.8
1974	54.7	53.4	37.8	1,434.2	2.6
1975	59.6	60.4	37.0	1,549.2	2.4

Calendar year	Total income	Total disbursement	Total assets, year end[a]	Nominal GNP[b]	Percent of total assets to nominal GNP
1976	66.3	67.9	35.4	1,718.0	1.8
1977	72.4	75.3	32.5	1,918.3	1.5
1978	78.1	83.0	27.5	2,163.9	1.6
1979	90.3	93.1	24.7	2,417.8	1.0
1980	105.8	107.7	22.8	2,631.7	0.9
1981	125.4	126.7	21.5	2,957.8	0.7
1982	125.2	142.1	22.1[c]	3,069.3	0.7
1983	150.6	153.0	19.7[c]	3,304.8	0.6
1984	169.3	161.9	27.1[c]	3,662.8	0.7

[a]Social Security Bulletin, Annual Statistical Supplement, 1983, p. 72, and 1985 Trustees' Report, p. 50.

[b]Economic Report of the President, Feb. 1985, p. 232.

[c]Includes $17.5 billion borrowed from the DI and HI trust funds. See 1985 Trustees' Report, p. 50.

Note: Nominal GNP is not adjusted for inflation.

Measuring the Financial Soundness of the Trust Fund

To monitor the financial soundness of the trust fund, the Board of Trustees reports to the Congress annually. For this report, SSA compiles for the Board projections and other analyses used to determine the fund's actuarial status. Estimates of actuarial balance are made for three time periods: short term (5 years), intermediate (25 years), and long term (75 years). These estimates also are prepared under different sets of assumptions regarding economic, demographic, and programmatic factors that affect the trust fund.

The Trustees employ two concepts to measure the financial soundness of the trust fund—actuarial balance and the reserve ratio. Actuarial balance is one concept used to assess the long-term financial soundness of the trust fund. It is defined as the difference over a given period between projected total tax income and projected average expenditures[6] expressed as a percentage of taxable payroll. A positive difference implies that the trust fund is in actuarial surplus; a negative difference suggests an actuarial deficit. The actuarial balance can vary over a given period, but "close actuarial balance" over a long period is defined as a situation in which the estimated average income rate is between 95 and 105 percent of the estimated average cost rate.

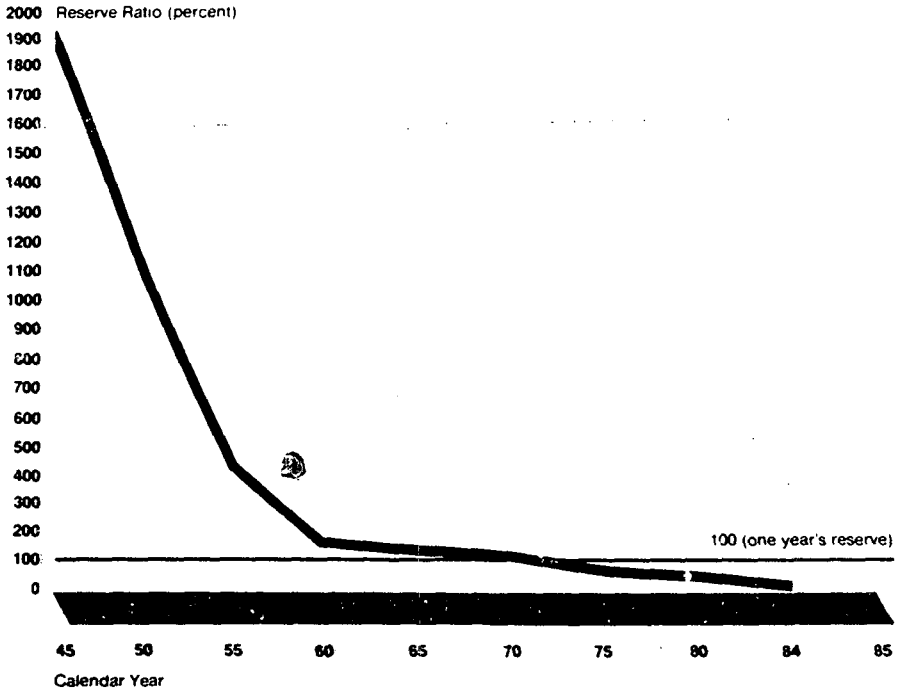
[6]That is, total tax income represents the sum of the average combined employer-employee tax rate specified in the law and the expected revenues from including a portion of Social Security benefits in the personal income tax base.

Another measure of financial soundness is the trust fund reserve ratio. This measure is defined as the ratio of assets in the trust fund at the beginning of a year to the expected disbursements for the year. While it measures the actual or projected status of the trust fund, it is most useful as a short-term measure of the soundness of the system. The assets of the system are generally considered a contingency reserve that varies with both the tax and interest income coming into the fund. Thus, if the reserve ratio equals 1 (or 100 percent), sufficient assets are on hand at the beginning of the year to cover expected disbursements for that year.[7]

Over the years 1945-84, the historical reserve ratios for the trust fund (see fig. 2.3) have substantially varied. But significantly, there is no generally accepted definition of an adequate or "optimal" reserve ratio. A ratio of 100 percent generally has been considered adequate for the short run, but it has been suggested that a somewhat lower ratio might be adequate in some circumstances. A ratio much higher than 100 percent can be considered to move the system away from current-cost or pay-as-you-go financing, where annual income into the fund roughly balances annual disbursements.

[7] 1984 Trustees' Report, pp. 30-31.

Figure 2.3: HIstorical OASI Trust Fund Reserve Ratios



The reserve ratio is defined as the assets in the Trust Fund at the beginning of the year as a percentage of actual expenditures during the year.

A reserve ratio equal to 100 percent means that one years' reserves are on hand in the Trust Fund.

Calculated by GAO

Developing Trust Fund Projections

Whichever measure of financial soundness is employed, the monitoring of the system's health and the making of policy for Social Security depends on the accuracy of the future projections of trust fund income and disbursements. Development of these projections by the SSA staff is a highly detailed process involving many elements including: actuarial calculation and projection of certain population groups, assumptions about the future behavior of the economy and labor force trends, and considerable judgment about these trends. In concept, however, the process is simply a calculation of expected income and disbursements, given present legislation, over various time periods and under a range of assumptions.

In general, the first step in deriving the long-range actuarial estimates for OASI involves projections of the total population for the U.S. and relevant territories. These projections are prepared for single year age intervals and are subdivided by sex and marital status. They are further broken down into various subpopulation groups by applying projected percentage factors derived from analysis of past data and trends.

One important subpopulation group is the "covered population," which is an estimate of those persons having some OASI covered employment during the year. Another subgroup is the "insured population," which represents those persons who are fully or currently insured or both, in the middle of a given year. SSA also estimates the male population aged 62 and over and the female population aged 60 and over and further subdivides groups by marital status. Other estimates are made for the populations of beneficiaries by retired, disabled, dependent, and survivor status.

Given the population estimates, taxable payrolls, tax receipts, and benefit payments are projected using the subpopulation group estimates and average earnings and benefit patterns. This process provides the basis for projections of disbursements, and when the legislated payroll tax schedule is applied to projected taxable payrolls, the projected tax revenues for the trust fund are obtained. Factoring in administrative expenses, the proceeds derived from including part of Social Security benefits in the personal income tax base, and interest receipts, provides a basis for determining the projected trust fund balances. For any year the difference between projected revenues and projected disbursements represents the change in the trust fund reserves. The income and disbursement projections also provide the basis for calculating indicators of financial soundness, such as the actuarial balance and the trust fund reserve ratio.

To obtain the projections identified above, actuaries apply a large number of assumptions about economic and demographic behavior over the projection period. These assumptions are critical because projections of these variables essentially "drive" the overall income and disbursement projections. As such, the assumptions provide the major source of variability in the overall projections. The most important assumptions are:

- consumer price index,
- average annual wages in covered employment,
- gross national product,

- labor force participation rates,
- fertility rates,
- net immigration,
- mortality rates,
- marital status,
- coverage rates, and
- retirement rates.

Our review focused on a subset of these assumptions.

Tracking the Accuracy of Trust Fund Projections

The most common approach to evaluating the technical accuracy of the trust fund projections over time is to focus on the underlying economic and demographic assumptions used by SSA in making the projections, and comparing projected values with actual values. Other elements of assessing the projections' accuracy have also been studied, however. These concern (1) the actuarial methods and data used to make the projections and (2) the independence of actuaries in making projections in what is essentially a political process. These aspects were addressed by GAO in an earlier report, which included a survey of a group of actuaries for their professional opinions on the methods used by SSA. Generally, these methods were found to be appropriate. In addition, while many actuaries felt that SSA's Chief Actuary could be more insulated from the influence of the Board of Trustees, their general conclusion was that the SSA actuaries' independence had not been seriously compromised.[8]

In any assessment of the technical accuracy of the trust fund projections, some inaccuracy is inevitable and inherent in the process. This was recognized by (among others) Robert Myers, Chief Actuary of SSA from 1947 to 1970, who concluded that:

"Long range actuarial cost estimates and valuations, regardless of type, cannot be precise, no matter how accurately and meticulously prepared. Considerable differences will inevitably arise between actual experience over the long range future and the estimates."[9]

Because of these inherent problems in developing accurate projection SSA adopts a pessimistic and an optimistic set of assumptions which

[8]Social Security Actuarial Projections (GAO/HRD-83-92, Sept. 30, 1983). For another view see Paul C. Light, "Social Security and the Politics of Assumptions," Public Administration Review, May/June 1985, pp. 363-371.

[9]Myers, Social Security, 1985, p. 380.

bracket an "intermediate" set. The latter can be considered a "best" estimate of the expected levels of revenue and disbursement over the period of the projections.

Because the trust fund projections depend heavily on economic and demographic assumptions, their accuracy depends on how well the variables used in the assumptions, specifically those considered most important, can be forecast. In assessing this accuracy, some reviews examine the financial soundness of the system in terms of a short-run dimension (which focuses on economic assumptions) and a longer-run dimension (which focuses on demographic assumptions).[10]

In summary, the Board of Trustees has responsibility for maintaining the financial health of Social Security. In carrying out this responsibility, the Board, together with SSA, makes projections of future trust fund income and disbursements and calculates measures of financial soundness, such as actuarial balance and the reserve ratio. Significantly, there is no generally accepted definition of an optimal or adequate reserve ratio. Historically, while a reserve ratio of 100 percent has been considered adequate for the short run, a ratio much higher than 100 percent has been viewed as moving the system away from current-cost or pay-as-you-go financing.

The Trustees' projections involve a highly detailed process and depend importantly on their assumptions concerning future economic and demographic trends. Uncertainties involved in economic and demographic forecasting make the projections inherently subject to error. Because of the difficulty in predicting these trends, the trust fund projections are compiled under different sets of assumptions reflecting the likely range of variation in economic and demographic conditions.

[10]For further discussion see Lawrence Thompson, "The Social Security Reform Debate," Journal of Economic Literature, Vol. XXI, No. 4, Dec. 1983, pp. 1430-33.

The Economic and Demographic Assumptions Underlying the OASI Trust Fund Projections Have Not Been Accurate in the Past

The inherent difficulties in projecting economic and demographic conditions are evident in a review of the assumptions adopted and projections made by SSA before 1983. An examination of the methods used in making these past projections, and a comparison of the economic and demographic assumptions employed by SSA to estimate income and disbursements for the OASI trust fund to actual experience, demonstrate the inaccuracies of past projections. However, the direction and reasons for the errors in the projections have changed over time.

Before 1972, a conservative methodology led to underestimates of future trust fund balances. After 1972, the methodology changed in a way that required the Trustees to adopt assumptions about future economic activity. The accuracy of projections became highly dependent on assumptions underlying the real wage differential—the difference between the rate of change in nominal earnings and the price level. The unstable economic conditions experienced by the U.S. economy in the mid and late 1970's rendered both the Trustees' assumptions and SSA's projections highly inaccurate and, more importantly, threatened the financial soundness of Social Security.

Level Earnings Assumptions: Pre-1972

While SSA currently employs assumptions for a number of economic and demographic variables in constructing the long-term trust fund projections, before 1972 specific estimates for key economic variables were not made and the trust fund projections were based on assumptions of level earnings. Here, it was assumed that, for future years, average annual earnings would approximate values most recently experienced. The following statement from the Trustees concerning operations for 1960 demonstrates this concept.

"Level average earnings at about the 1959 level were assumed . . . . In the past, average earnings have increased greatly, partly because of inflation, partly because of increased productivity, and partly because of the changed occupational composition of the labor force and related factors . . . . It is likely, however, that if average earnings increase, the benefit formula will be modified accordingly."[1]

Historical data on average annual earnings from 1951 to 1975 and their rate of change appear in table 3.1. For example, if average earnings

[1] 1960 Trustees' Report, OASDI, p. 38. The level earnings assumption was not changed until the 1963 Trustees' Report. Thereafter, there is about a 2-year lag between the annual report year and the year assumed. For example, the 1968 Trustees' Report assumed level earnings at the 1966 level. We can further add that the level earnings assumption applied to the long-range projections. Before 1972, short- and medium-range projections incorporated assumptions that considered changes in average earnings levels and economic activity.

were assumed to be at the 1959 level of $3,856 throughout the projection period, then in 1960, when average earnings had risen to $4,007 (as shown in the table), revenues into the trust fund would be greater than planned, in this case by about 4 percent. The level earnings assumption did not, however, imply that covered payrolls or revenues into the trust funds would remain the same every year. Growth in the working-age population might raise covered payrolls, which would in turn increase projected (and actual) revenues.

Table 3.1: Average Annual Taxable Earnings: Historical Values

Year	Average annual taxable earnings[a]	Percent increase in average annual taxable earnings
1951	$2,799	6.2
1952	2,973	5.6
1953	3,139	0.5
1954	3,156	4.6
1955	3,301	4.6
1956	3,532	7.0
1957	3,642	3.1
1958	3,674	0.9
1959	3,856	5.0
1960	4,007	3.9
1961	4,087	2.0
1962	4,291	5.0
1963	4,397	2.5
1964	4,576	4.1
1965	4,659	1.8
1966	4,938	6.0
1967	5,213	5.6
1968	5,572	6.9
1969	5,894	5.8
1970	6,186	5.0
1971	6,497	5.0
1972	7,134	9.8
1973	7,580	6.3
1974	8,031	5.9
1975	8,631	7.5

[a]Social Security Bulletin, Annual Statistical Supplement, 1983, p. 28.

Note: Average annual earnings shown are used to determine indexed earnings.

Since there were no automatic benefit adjustment procedures in effect, projected benefit levels were assumed to be based on the benefit formula in existing legislation. If average earnings increased, as could be expected, the effect of the "errors" would be to underestimate revenues and, given disbursements, also understate the trust fund balance. The actual increase in revenue could be considered a "cost saving" in that the actual benefit or cost rate would be lower as a percentage of taxable payroll than projected. Unanticipated interest payments on the larger-than-expected trust fund balance would produce additional revenue for the fund.

In this way, the level earnings assumption was a type of safety factor that tended to offset adverse experience with regard to other actuarial factors. The use of such conservative assumptions, implicitly endorsed by policymakers during this period, actually built in errors. The result, however, was that the higher than expected revenues gave the Congress more flexibility in providing higher benefit levels. As table 3.2 shows, there were six statutory benefit increases during the period 1965-74. These ad hoc benefit increases, which were partly adjustment of real benefit levels and partly compensation for price inflation, helped to align disbursements more closely with revenues. As a result, trust fund ratios during this period were relatively stable, and the system was maintained on a current-cost basis.

Table 3.2: Benefit Adjustments, 1965-84

Effective month	Percent increase
Statutory	
1/1965	7
2/1968	13
1/1970	15
1/1971	10
9/1972	20
6/1974	11
Automatic	
6/1975	8.0
6/1976	6.4
6/1977	5.9
6/1978	6.5
6/1979	9.9
6/1980	14.3
6/1981	11.2
6/1982	7.4
12/1983	3.5
12/1984	3.5

Source: Social Security Bulletin, Annual Statistical Supplement, 1983, p. 29, and 1985 Trustees' Report, OASDI, p. 4.

Transition From Level Earnings to Dynamic Assumptions

The 1972 Amendments to the Social Security Act introduced an automatic benefit adjustment procedure (indexing), under which benefits were increased each year to reflect changes in the general price level (inflation) in order to maintain the purchasing power of benefits.[2] The 1972 changes also required that whenever an automatic benefit increase occurred, an adjustment also was to occur in the maximum amount of earnings to be taxed and credited for benefit computation purposes.

Also, the 1972 changes moved the projection methods away from the level earnings concept to a projection process based on dynamic assumptions. To project the future consequences of the current law, it becomes necessary to project the rate of change in both prices and earnings for each year.

Thus, it was intended that the projections be made more realistic. At the same time, however, the stability of the trust fund reserve ratio became

[2]Automatic benefit increases do not occur if the Consumer Price Index has increased by less than 3 percent since the time that the size of the previous automatic adjustment was determined.

one step removed from congressional control, and the projections became more sensitive to errors or changes in the underlying assumptions, particularly of economic conditions.

Dynamic Assumptions: 1972-82

Under the automatic adjustments, changes in the price level affect the level of disbursements from the trust fund through their effect on benefit levels. At the same time, changes in earnings levels affect revenues through their impact on the average amount of earnings taxable as well as the level of the taxable maximum. If earnings and price increases are both underestimated by the same percentage amount and the system would otherwise have been in fairly close financial balance, the effect of the unanticipated increase in earnings provides roughly enough revenues to offset the effect of the unanticipated increase in prices. Thus, in examining the effect of unanticipated price and earnings changes on Social Security financing, the relationship between the projected and actual movements in the real earnings differential is probably more important than is the relationship between projected and actual movements in either earnings or price considered individually.

The real earnings differential is defined as the relationship between the rate of change in average annual covered earnings and the rate of change in the price level as reflected in CPI-W (the Consumer Price Index for wage and clerical worker families). When nominal wages rise at a rate greater than the rate of inflation, the real wage differential becomes more positive. Other factors held constant, income will grow relative to disbursements, and the trust fund balance will be higher.

Another important factor affecting trust fund revenues and taxable payrolls is changes in the labor force which can, in part, be measured by the unemployment rate.[3] When the unemployment rate rises during periods of declining economic activity, income to the trust fund falls.

In our analysis we focused on three key economic assumptions: the CPI-W, average annual wages, and the unemployment rate. These factors are the basis for much of the variation in trust fund projections as identified in a recent study by Bartlett and Applebaum, two former Social

[3]Another factor in measuring changes in the labor force is the change in labor force participation. Labor force participation is generally stable for males (and is quite high). During the 1970's, rates for women rose substantially. This implies that the effect was, on balance, to increase revenues into the system.

Security actuaries.[4] We selected two time periods, the first between the 1972 and 1977 Amendments and the second between the 1977 and 1983 Amendments. In 1972 and in 1977, important legislation was enacted, and these dates serve as benchmarks from which to assess the economic assumptions and projections of trust fund balances.

Our review of the Trustees' economic assumptions during 1972-82 shows the following:

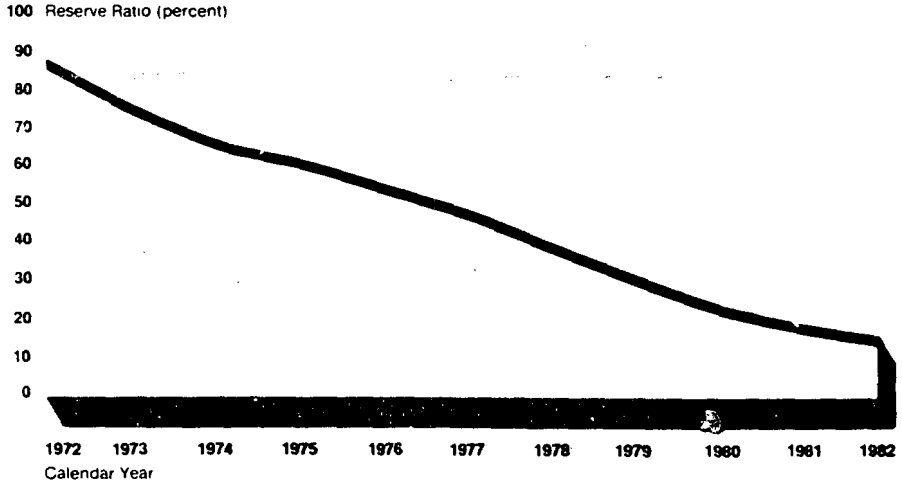
- In 1972, the Trustees assumed growth in real earnings averaging 2.84 percent per year. But the severe recession of 1974-75 coupled with high rates of price inflation resulted in actual declines in real earnings and a decline in trust fund reserves. Real earnings growth was generally overestimated during 1973-75; this resulted in projected trust fund reserves that were higher than those that actually accumulated.
- In 1977, the Trustees again assumed positive growth in real wages ranging from 2.0 to 2.7 percent annually, during 1977-82. Again, real wages experienced a decline during 1979-82, and the real wage differential was consistently overestimated.
- Underlying the overestimation of the real wage differential were the Trustees' assumptions concerning the rate of change in CPI-W and nominal earnings. The assumptions made in 1972 (for 1972-76) and in 1977 (for 1977-82) consistently underestimated the actual rate of change in CPI-W and generally underestimated the change in nominal wages. The errors in predicting price change were more significant than those for nominal wages.
- The unemployment rate was an additional factor (though less significant than the real wage differential) that contributed to overestimation of future trust fund balances during the 1970's and early 1980's. The Trustees generally underestimated the unemployment rate during this period.

These inaccuracies in economic assumptions led to overestimation of OASI trust fund balances for the periods 1973-77 and 1978-82. Because of the poor performance of the U.S. economy, specifically in the 1970's, the OASI trust fund reserve ratio experienced a 10-year decline, as figures 3.1 and 3.2 show. Consequently, the Congress had to restore the system to financial health by amending the Social Security Act in 1977 and

[4]Dwight K. Bartlett III and Joseph A. Applebaum, "Economic Forecasting Effect of Errors on OASDI Fund Ratios," Social Security Bulletin, Vol. 45, No. 1, Jan. 1982.

1983. A more detailed presentation of our analysis is contained in appendix III.[5]

Figure 3.1: OASI Trust Fund Reserve Ratios (1972-82)

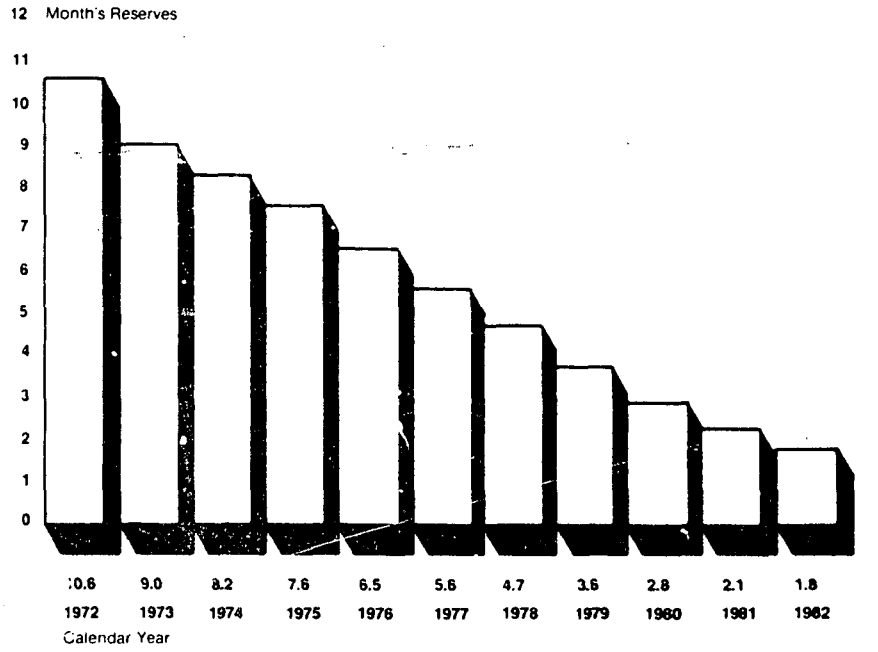


Assets at beginning of year as a percentage of actual expenditures during the year.

Calculated by GAO

[5]Bartlett and Applebaum, in their analysis of the effect of forecasting errors on the trust fund projections during this time period, derived a method for approximating trust fund reserve ratios given differences between actual and projected values for the crucial economic assumptions. An error in one assumption in a given period can "accumulate" each year, so that after several years there can be a large difference between actual and projected reserve ratios. Repeated forecasting errors can even more quickly create large errors in the reserve fund ratios. They applied the actual forecasting errors in the assumptions used in the 1970-1976 Trustees' Reports to the intermediate assumptions used in the 1981 Trustees' Report. By the beginning of the sixth year of the projections, 1986, they found that "actual" reserve ratios differed from projected reserve ratios by anywhere from 8 to 42 percentage points.

Figure 3.2: OASI Trust Fund Reserves in Months (1972-82)



Assets at beginning of year as a percentage of actual expenditures during the year.

Calculated by GAO

Demographic Assumptions

The above analysis shows that the inaccuracies in the economic assumptions used by SSA have an immediate impact on the trust fund projections. In addition, the long-run trust fund projections also depend on assumptions about population trends. SSA needs to have estimates of the population so that the number of future beneficiaries and the costs of the system can be estimated. Population estimates are also important because they serve as a basis for determining the size of the covered work force that will contribute future revenues to the trust fund.

The two most important demographic assumptions concern fertility and mortality rates. The total fertility rate (TFR) is an estimate of the average number of children born to a woman during her lifetime. One measure of mortality is life expectancy, the average number of years an individual at a given age can be expected to live.

A higher fertility rate has only a small immediate impact on current disbursements.[6] As the increased population ages, however, there will be a significant impact on revenues as more individuals reach working age and become contributors to the system. This lowers the cost of Social Security benefits as a percentage of taxable payroll. Later, however, these same workers will reach retirement age and begin to draw benefits. This raises the cost of Social Security. Thus, significant changes in the fertility rate over time can affect the system's long-run soundness through its impact on the ratio of beneficiaries to workers. From about 20 to 65 years after a change in fertility, revenues are affected, while beginning about 65 years after the change, expenditures are affected. Data on the TFR are given in table 3.3 and in figure 3.3.

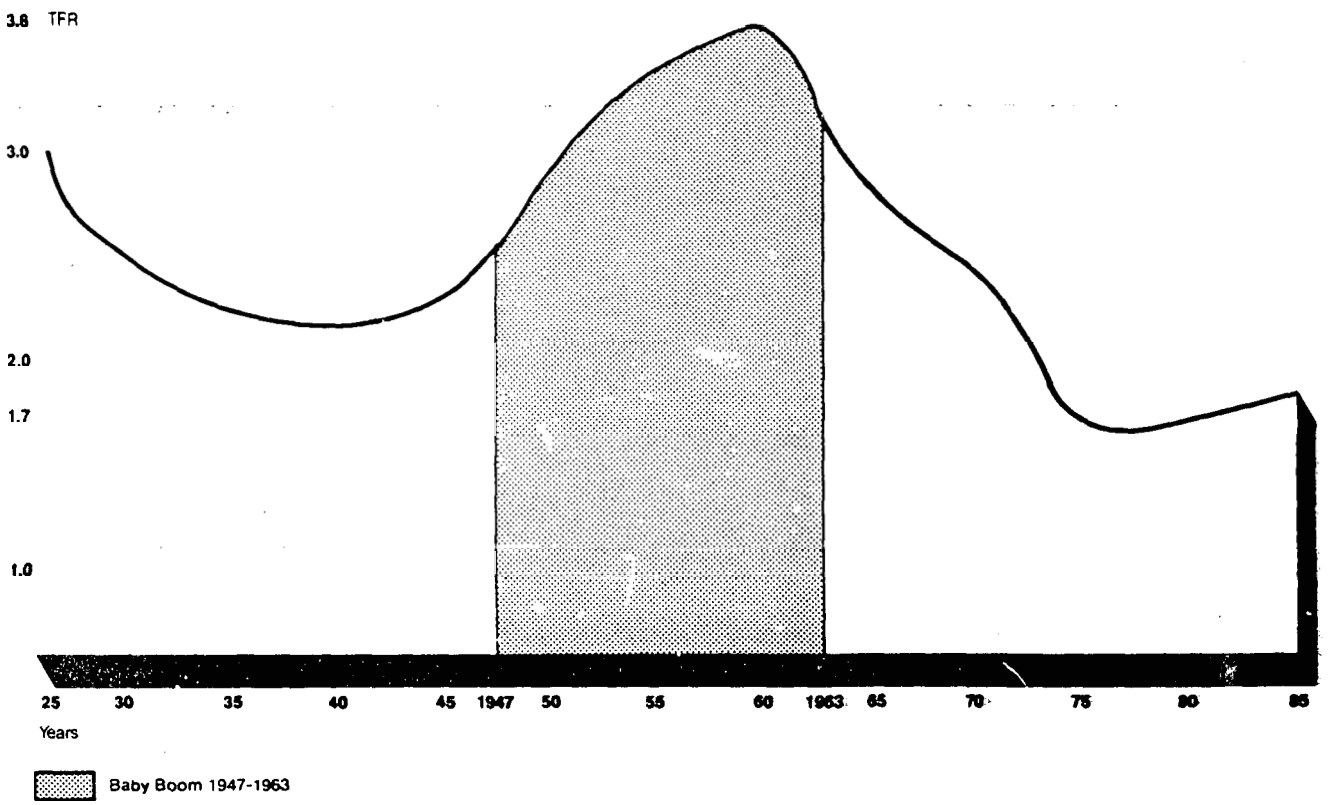
[6]This is due to higher dependents' (children's) benefits.

Table 3.3: Demographic Variables: Historical Values and Intermediate Projections

		Life expectancies (in years)			
		At birth		At age 65	
Year	TFR	Male	Female	Male	Female
Actual					
1940	2.23	61.4	65.7	11.9	13.4
1945	2.42	62.9	68.4	12.6	14.4
1950	3.03	65.6	71.1	12.8	15.1
1955	3.50	66.7	72.8	13.1	15.6
1960	3.61	66.7	73.2	12.9	15.9
1965	2.88	66.8	73.8	12.9	16.3
1970	2.43	67.1	74.9	13.1	17.1
1975	1.77	68.7	76.6	13.7	18.0
1976	1.74	69.1	76.8	13.7	18.1
1977	1.80	69.4	77.2	13.9	18.3
1978	1.76	69.6	77.3	13.9	18.3
1979	1.82	70.0	77.7	14.2	18.6
1980	1.85	69.9	77.5	14.0	18.4
1981	1.82	70.4	77.9	14.2	18.6
1982	1.81	70.8	78.2	14.5	18.8
1983	1.76	71.1	78.3	14.5	18.8
Projected					
1984	1.79	71.3	78.5	14.6	19.0
1985	1.80	71.5	78.8	14.7	19.1
1990	1.85	72.6	79.8	15.1	19.8
1995	1.90	73.4	80.7	15.5	20.3
2000	1.94	73.9	81.2	15.8	20.7
2010	2.00	74.5	81.8	16.1	21.1
2020	2.00	75.0	82.3	16.5	21.6
2030	2.00	75.5	82.9	16.8	22.0
2040	2.00	76.0	83.5	17.2	22.5
2050	2.00	76.4	84.0	17.6	23.0
2060	2.00	76.9	84.6	17.9	23.4

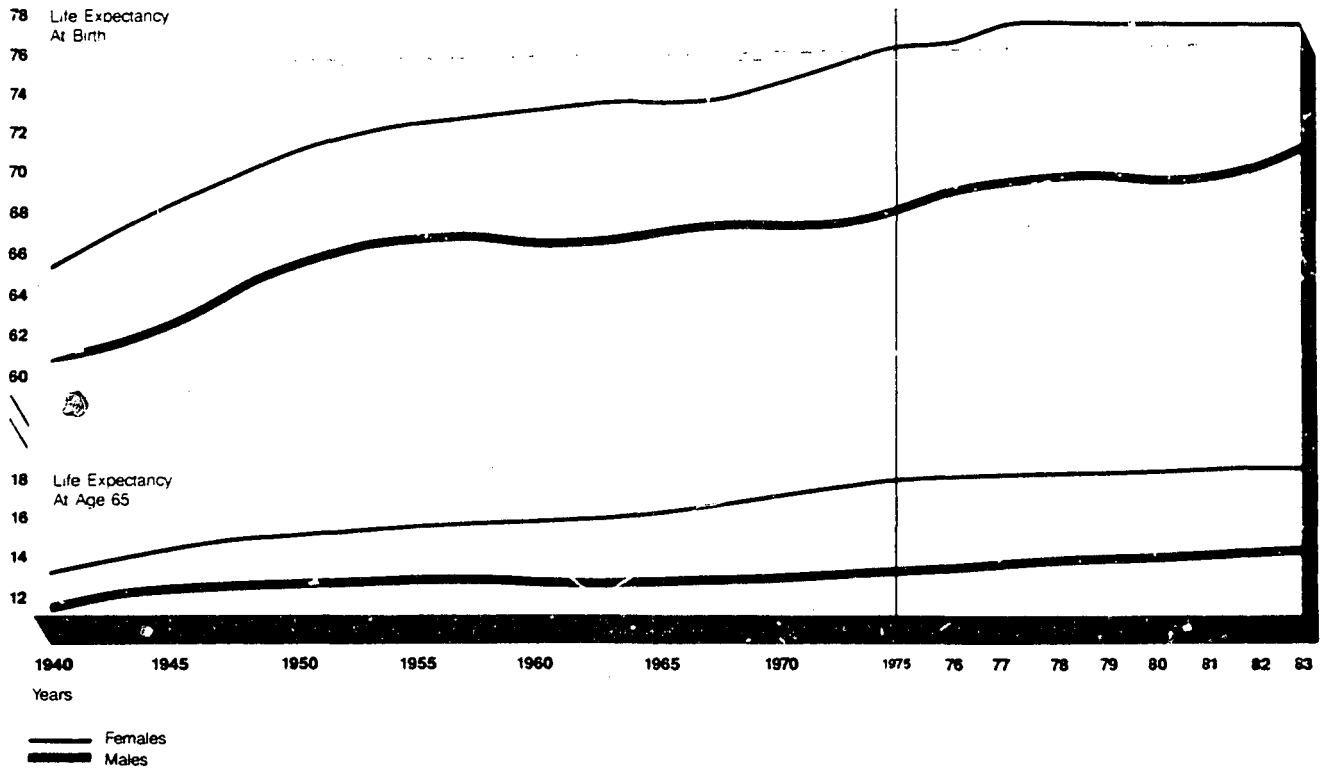
Source: 1985 Trustees' Report, OASDI, p. 30.

Figure 3.3: Total Fertility Rate, 1925-84



Increases in life expectancy affect the system in at least two ways depending on the age group in which the increase occurs. For those at retirement age or already retired, increased life expectancy means benefits will be received over a longer lifetime, and this results in increased costs to the system. Conversely, for those at the working ages, increased life expectancy is related to reduced mortality (rates) and may mean that a greater number of individuals are contributing revenues, and this may also lead to lower survivor benefit costs. Because changes in life expectancy affect the system in a complicated way, it is useful to review life expectancies both at birth and at age 65. This is shown in figure 3.4, along with summary data in table 3.3 for both males and females.

Figure 3.4: Life Expectancy at Birth and Age 65 (In Years)



Demographic Assumptions: Pre-1972

Before 1972, SSA made two types of estimates for the Social Security system—high cost (low fertility, low mortality) and low cost (high fertility, high mortality). For example, the demographic assumptions associated with each estimate in the 1960 Trustees' Report were:

"In the high-cost estimate, mortality rates for the year 2000 are in the neighborhood of 50 percent of the 1953 level up to age 70, with less decrease at older ages. . . . The high-cost fertility rates begin decreasing at once and reach about the level required to maintain a stationary population in 2005-10.

"The low-cost [mortality] estimate assumes less improvement . . . [than the high cost]. . . . In the low-cost estimate, fertility rates are assumed to remain at about the

level of recent years until 1975 and then decrease slowly until in 2045-50 they reach about the level required to maintain a stationary population."[7]

Increases in estimated life expectancy tended to slow in the late 1950's and early 1960's, particularly for males at older ages. The rather slight increase in life expectancy for working-age males relative to level or even declining life expectancies for retiring males meant that, on balance, the trend in this factor was generally more consistent with the lower cost assumptions, which assumed less improvement in life expectancy (e.g., higher mortality).

In 1960, when the projections above were made, the TFR was near a peak. Then, in the 1960's the TFR fell dramatically as the postwar "baby boom" came to an end. The fall, which was not foreseen, was even more dramatic than in the Trustees' high-cost assumption, which assumed that the stationary population level (about 2.1 TFR) would be reached after the year 2000. In fact, the TFR reached this level in the early 1970's (see fig. 3.3).

Demographic Assumptions: 1972-83

The 1971 Advisory Council on Social Security[8] recommended that SSA move to one set of demographic assumptions representing a single best estimate. This was the procedure that was followed in principle until 1976. The 1975 assumptions predicted that through 2050 mortality trends would continue the general trends established over the period 1950-70. The TFR was assumed to decrease from the current level to a level of 1.7 children per woman in fiscal year 1977 and then to slowly increase to an ultimate level of 2.1 from 2005 to 2050.[9] The single estimate procedure proved inadequate and for the 1976 Trustees' Report, SSA adopted three alternative assumptions for the fertility rate because of the difficulty in predicting the rate with any confidence based on historical trends. A range of 1.7 to 2.3 children per woman was chosen.

As the data in table 3.3 and figure 3.4 suggest, the trend toward increased life expectancy (particularly for males) during the 1970's and early 1980's was more dramatic than the trend of 1950-70 as assumed in

[7] 1960 Trustees' Report, OASDI, p. 37.

[8] "Pursuant to section 706 of the Social Security Act, an Advisory Council on Social Security was appointed in May 1969 and submitted its report on April 5, 1971. The Council made certain recommendations which directly affect the financing methods, the actuarial methodology and the adequacy of the trust funds." 1973 Trustees' Report, OASDI, p. 27.

[9] 1975 Trustees' Report, OASDI, p. 47.

SSA's 1975 projections. Conversely, the data also show a TFR gradually increasing from its low point in 1976. Thus, actual experience was not inconsistent with the Trustees' assumptions.

Overall, in assessing the accuracy of the demographic assumptions, the end of the baby boom in the 1960's was not foreseen, nor were the increases in life expectancy fully anticipated. During the 1970's and 1980's, there was increasing recognition that Social Security faced a serious long-term problem because of the wide divergence in birth rates between the baby boom years and the years after 1963, coupled with increases in life expectancy.

Forecasting Accuracy and the Use of Projections

As the above analysis shows, the projections of the trust fund and their underlying assumptions have been subject to considerable error. This is particularly significant for the economic assumptions because variations in economic conditions have a more immediate effect on the financial status of the trust fund than does demographic experience.

In evaluating the economic assumptions adopted by the Board of Trustees and SSA, a comparison can be made to projections made by other organizations. Some of the differences between the Social Security assumptions and the economic forecasts of others made during the 1970's can be examined by reviewing forecasts of the Consumer Price Index (CPI).

In 1972, the Trustees assumed that the annual rate of change in the CPI from 1972 to 1976 would average 2.84 percent per year. In fact, the actual rise in the CPI averaged 7.1 percent annually during that period. A study of the effect of economic conditions on the short-run behavior of the Social Security trust fund by Thompson and Van de Water gives the economic forecast of Data Resources Inc. (DRI) for several economic variables made in June 1972. The forecasts for the CPI are shown in table 3.4.[10]

[10]Lawrence H. Thompson and Paul N. Van de Water, "The Short-Run Behavior of the Social Security Trust Funds," Public Finance Quarterly, July 1977, 5(3), pp. 351-372.

Table 3.4: Comparison of CPI Projections, 1972-76

	Annual rate of change		
	Projected		
For year	DRI (as of June 1972)	SSA[a] (1972)	Actual[a]
1972	3.7	3.1	3.3
1973	3.9	2.9	6.2
1974	3.1	2.8	11.0
1975	2.7	2.7	9.1
1976	2.5	2.7	5.7
5-year average	**3.18**	**2.84**	**7.06**

[a]Source: Joseph Applebaum, "Comparison of Actual Economic Experience and Assumptions in Trustees' Reports," Social Security Administration, Actuarial Note No. 106.

While the DRI forecast was, on average, "better" than the Trustees' assumptions, both estimates were so incorrect as to render any relative comparison almost meaningless. In addition, the Trustees' assumptions were based on different methods than those of DRI, whose forecast was the result of a sophisticated econometric model to which DRI applied some judgmental factors.

The performance of macroeconomic forecasting models (and forecasters) is the subject of ongoing study. One such study by McNees and Ries[11] points out that the largest errors in economic forecasting occurred near the 1973-75 and 1981-82 recessions. In judging macroeconomic forecasts, the inability to forecast long-term economic behavior is readily acknowledged, and the focus is usually placed on the accuracy of forecasts no greater than 8 quarters (2 years) into the future. McNees' and Ries' data show that, among the forecasters they studied for the period 1976-83, errors in forecasting the CPI 4 quarters in the future ranged from an average of 1.7 to 2.4 percentage points. Errors 8 quarters out ranged from an average of 2.4 to 3.2 percentage points.

While it is difficult to compare the Trustees' estimates to figures such as those provided by McNees and Ries, the information we reviewed suggests that the Trustees' assumptions were within a reasonable range of other forecasters in terms of accuracy.

Efforts are continuing to improve economic forecasts and the way they are incorporated into the projections. SSA and others have done considerable research into economic models that depict the interplay between

[11]Stephen K. McNees and John Ries, "The Track Record of Macroeconomic Forecasts," New England Economic Review, Nov./Dec. 1983, pp. 5-18.

the economy and the Social Security program.[12] The importance of this research, despite its inherent difficulties, is beginning to be recognized. For instance, a 1984 actuarial study by SSA notes the need for additional analysis:

"The development and analysis required for the adoption of economic assumptions used in pension valuations has been one of the most neglected areas in the actuarial field. This may be due in part to the lack of training among actuaries in the needed basic concepts of economics, or perhaps to the low level of importance that actuaries generally assign to this area. We believe, however, that this area cannot be neglected any longer. As actuaries become more aware of how closely the various instruments for income maintenance (especially Social Security and private pensions) are intertwined with the national economy, the need for actuarial projections and analyses in the economic field becomes more evident."[13]

In summary, projections of future economic and demographic conditions are inherently subject to error, and the difficulties experienced by the Trustees and SSA characterize forecasts made by others in the 1970's.

As a result of inaccurate economic assumptions, the OASI trust fund balance was overestimated for the period between 1973-77 and 1978-82. When actual economic conditions turned out to be less favorable than had been assumed in the forecasts, the trust fund reserve ratio experienced a 10-year decline. It became necessary for the Congress to restore the system's financial health by amending the Social Security Act in 1977 and in 1983.

[12]A comprehensive summary of this type of research is found in John C. Hambor, "Economic Models and the Study of the Economic Effects of Social Security," Social Security Bulletin, Vol. 47, No. 10, Oct. 1984, pp. 3-8.

[13]SSA, Office of the Actuary, "Economic Projections for OASDI Cost Estimates, 1983," Actuarial Study No. 90, Feb. 1984.

Chapter 4

Large Reserve Accumulation Projected as Result of 1983 Amendments

In response to the deteriorating financial condition of the OASDI trust fund into the early 1980's, the National Commission on Social Security Reform was appointed jointly by the President and the Congress in December 1981. The Commission's recommendations formed the basis of the congressional debate that resulted in enactment of the 1983 Amendments to the Social Security Act.

The projections, based on the 1983 Amendments, show that the financial condition of the OASDI trust fund is improved both in the short run and long run.[1] A significant feature of the projections however, is a large future trust fund reserve accumulation beginning in the 1990's and continuing until about the year 2020, to be followed by a period of drawdown to finance benefits after 2020. Underlying these projections is a movement away from the current-cost, pay-as-you-go financing concept for Social Security.

The trust fund buildup occurs because taxes on the current covered working population are higher than needed to meet current benefit requirements in order to produce a surplus. When the baby boom generation enters retirement age (starting sometime after 2010), the covered working population would be undertaxed relative to benefit payment requirements. The trust fund would use the accumulated balances to cover the differential between income and disbursements.

Key Provisions of the 1983 Amendments

The National Commission on Social Security Reform identified additional financial resources in the range of $150 to $200 billion needed to maintain the trust fund's short-term solvency during the 1980's. In addition, the Commission sought to eliminate a projected long-range actuarial deficit of 1.80 percent of taxable payroll. The recommendations of the National Commission (which outlined how these resources could be raised) became the basis for the Amendments the Congress enacted in April 1983. Among its key provisions, intended to solve both short- and long-run problems, the 1983 Amendments:

- Increased the payroll tax in 1984 and 1988 and reallocated between OASI and DI the previously legislated increase for 1990.[2]

[1]We include the OASDI and DI trust funds in the analysis of short- and long-term trust fund projections by SSA in this chapter and use the term "OASDI trust fund" and "trust fund" to refer to the combined OASI and DI trust funds. We discuss the distinction between OASI and OASDI more fully on page 11.

[2]In 1986, the OASI payroll tax rate is 5.7 percent (5.2 percent for OASI plus 0.5 percent for DI). In 1988, the total rate for OASDI will increase to 6.06 percent (5.53 percent for OASI plus 0.53 percent

- Expanded covered employment to include newly hired (after 1983) federal employees and all employees of nonprofit organizations, and prohibited future termination of coverage of state and local government employees.
- Lengthened the normal age for retirement, from 65 to 67 years old, starting in 2003 with the 67 retirement age in place in 2027.
- Reduced benefits for retirement at the earliest possible age (i.e., 62 years when the normal retirement age increases beyond 65) and increased incentives to remain working between 65 (now) or 67 (later) and age 70.
- Initiated Federal income taxation of up to 50 percent of Social Security benefits, if adjusted gross income from all sources, including one-half of social security benefits, is at least $32,000 for married couples and $25,000 for single individuals.

ASDI Trust Fund Stabilizer

The 1983 Amendments also introduced a provision to limit annual "cost of living adjustments" (COLAs) for beneficiaries in the event the trust fund was in danger of depletion. The provision is designed to deal with a situation such as occurred in the 1970's when rapid inflation outstripped nominal wage growth, resulting in falling real wages, which in turn drove up oulays relative to revenues.

The provision states that if the relevant trust fund reserve ratio is less than 15 percent, annual COLAs will be determined by comparing a measure of the annual change in nominal wages with the annual change in CPI-W. The value of the COLA becomes the lesser of the two measures.[3,4] The provision "stabilizes" the fund by slowing benefit growth when the

for DI). In 1990, the OASDI rate will become 6.2 percent (5.60 percent for OASI, 0.60 percent for DI). (See app. II.)

[3]The provision is as follows:

"If the combined assets of the OASI and DI Trust Funds, as a percentage of estimated annual expenditures, fall below a specified level, automatic benefit increases will be limited to the lower of the increases in wages or prices. This specified level is 15 percent for benefit increases in 1984 through 1988, and 20 percent for benefit increases in 1989 and later. If assets, excluding amounts borrowed from the HI Trust Fund, fall below that level, the automatic benefit increase will be the smaller of (1) the increase in prices as measured by the CPI (the same benefit increase that would apply if the level of trust fund assets were not below the specified levels of 15 percent, or 20 percent) or (2) the increase in average wages in the previous year as compared with the second preceding year—which is used for purposes of adjustments in the contribution and benefit base and in other wage-indexed program amounts." 1983 Trustees' Report, OASDI, p. 10.

[4]For the purpose of the stabilizer provision, SSA is required to use a trust fund ratio that is different from the usual "contingency fund" ratio. The alternative ratio includes as assets those on hand at the beginning of the year and advance tax transfers but excludes amounts owed to the HI trust fund. See 1984 Trustees Report, OASDI, pp. 37, 49-50.

real wage differential is negative and, relative to projected outlays, the trust fund balance is very low. It will not necessarily prevent insolvency of the fund however, particularly if a period of prolonged economic decline and high unemployment occurs or other factors affect the program.

Economic and Demographic Assumptions

In the 1985 Trustees' Report, Social Security projections are based on four sets of assumptions ranging from optimistic to pessimistic (see tables 4.1 and 4.2). Alternative I is based on the most optimistic set of economic and demographic assumptions, while Alternatives II-A and II-B represent "intermediate" sets of assumptions. They share identical demographic assumptions, but II-A is based on more optimistic economic assumptions, (higher real wage growth, higher employment, and lower inflation) than are included in II-B. (Alternative II-B is widely regarded as the Trustees' central set of assumptions.) Alternative III is based on the most pessimistic set of assumptions.

The economic assumptions adopted by the Board of Trustees and employed by SSA in making short-run projections are based on recent experience. Longer-term assumptions are based on historical averages for such key variables as the CPI-W, nominal wages, and unemployment. The different alternatives provide a range of variation for the assumptions, but even so, none of the alternatives provide for fluctuations in the business cycle over the long term.

The assumptions for the key economic variables reach ultimate values in 2010. Under Alternative II-B, the unemployment rate is assumed to stabilize at 6.0 percent, increases in real wages at 1.5 percent, and increases in CPI-W at 4.0 percent. These assumptions are used for the remainder of the projection period, until 2060.

SSA explains its demographic assumptions for the TFR (see table 4.2) in its latest study on population projections as follows:

"We believe that the total fertility rate will eventually increase above the present low level, but that it will not return to the high levels observed during the late 1940's, 1950's and early 1960's. We believe that the total fertility rate will ultimately exceed the present low level because such a total fertility rate has never been experienced in the United States over a long period of time and because such a

level is below that needed to maintain the size of the population in the absence of increased net immigration."[5]

Table 4.1: Economic Assumptions Under Alternative II-B (Calendar Years 1984-2060)

Calendar year	Real GNP[a]	Average earnings in covered employment[a]	Consumer price index[a]	Real earnings differential[a]	Average annual interest rate (percent)	Average annual unemployment rate (percent)
1984	6.8	5.3	3.4	1.9	12.4	7.5
1985	3.2	3.8	3.9	.0	10.9	6.9
1986	2.7	5.6	4.7	.8	10.8	6.8
1987	3.0	6.4	5.3	1.1	10.7	6.6
1988	3.0	6.1	5.0	1.1	10.4	6.4
1989	2.9	6.2	4.6	1.6	9.6	6.1
1990	2.5	5.2	4.2	1.0	8.5	6.0
1991	2.5	5.4	4.0	1.4	7.5	6.0
1992	2.5	5.6	4.0	1.6	6.9	5.9
1993	2.5	5.6	4.0	1.6	6.6	5.9
1994	2.5	5.6	4.0	1.6	6.3	5.9
1995	2.6	5.6	4.0	1.6	6.0	6.0
2000	2.6	5.6	4.0	1.6	6.3	6.0
2010 & later	2.0[b]	5.5	4.0	1.5	6.0	6.0

[a]Annual rate of change.

[b]The annual growth of real GNP is assumed to be 2.0 percent for the year 2010. The annual percentage increase in real GNP is assumed to continue to change after 2010 to reflect the dependence of labor force growth on the size and age-sex distribution of the population. The percentage increase for 2060 under alternative II-B is 1.9.

Source: 1985 Trustees' Report, OASDI, p. 28.

[5]HHS, Social Security Administration, "Social Security Area Population Projections," 1985, Actuarial Study No. 95, p. 4.

Table 4.2: Demographic Assumptions Under Alternative II-B (Calendar Years 1984-2060)

		Life expectancy			
		At birth		At age 65	
Calendar year	TFR	Male	Female	Male	Female
1984	1.79	71.3	78.5	14.6	19.0
1985	1.80	71.5	78.8	14.7	19.1
1990	1.85	72.6	79.8	15.5	19.8
1995	1.90	73.4	80.7	15.5	20.3
2000	1.94	73.9	81.2	15.8	20.7
2010	2.00	74.5	81.8	16.1	21.1
2020	2.00	75.0	82.3	16.5	21.6
2030	2.00	75.5	82.9	16.8	22.0
2040	2.00	76.0	83.5	17.2	22.5
2050	2.00	76.4	84.0	17.6	23.0
2060	2.00	76.9	84.6	17.9	23.4

Source: 1985 Trustees' Report, OASDI, p. 30.

The Trustees assume that the TFR will increase from the current level of about 1.80 to an ultimate level of 2.0 in the year 2010 and remain there until 2060, the end of the projection period.

Amendments Successful in Short-Term

In the 1983 Amendments, the Congress adopted measures to increase Social Security revenues and decrease disbursements, aiming to stabilize then-declining OASDI trust fund balances. These policies have successfully stabilized the fund, but a low level of reserves is anticipated for the short term. The reserve ratio is expected to be in the 20-percent range until 1988, when it reaches 30 percent. In table 4.3, we compare short-term projections SSA prepared for the 1983 Amendments with actual experience in 1983 and 1984, along with the short-term projections from the 1984 and 1985 Trustees' Reports.

Table 4.3: OASDI Trust Fund Operations (Estimated and Actual) **Under Alternative II-B** (Calendar Years 1982-89)

(Dollars in billions)

Calendar year	Income	Disbursements	Funds at year end	Reserve ratio[a] (percent)
Actual				
1982	$147.9	$160.1	$24.8	15
1983	171.3	171.2	24.9	14
1984	186.6	180.4	31.1	21
Estimated 1983-87 in 1983 Trustees' Report[b]				
1983	172.2	169.5	27.5	15
1984	180.9	180.3	27.6	22
1985	198.7	193.8	32.5	21
1986	214.5	209.9	36.1	23
1987	231.2	225.2	39.7	23
1988	263.4	240.8	53.9	24
Estimated 1984-88 in 1984 Trustees' Report[c]				
1984	184.4	181.5	27.7	21
1985	203.2	194.1	36.8	21
1986	221.6	209.3	43.6	25
1987	241.2	226.2	51.7	27
1988	277.2	243.4	85.4	29
Estimated 1985-89 in 1985 Trustees' Report[d]				
1985	199.5	193.2	35.6	24
1986	216.4	204.5	42.5	25
1987	235.0	220.0	51.8	27
1988	270.1	237.0	84.9	30
1989	296.3	254.5	126.8	41

[a]Calculated on reserves at the beginning of the year.

[b]1983 Trustees' Report, OASDI, p. 51. Estimate for 1988 is found in "Long-Range Projections of Social Security Trust Fund Operations in Dollars," Harry C. Ballantyne, Chief Actuary, SSA, Actuarial Note 117, Oct. 1983.

[c]1984 Trustees' Report, OASDI, p. 48.

[d]1985 Trustees' Report, OASDI, p. 40.

SSA's projections for the 1983 Amendments illustrate the difficulty in producing accurate projections even in a 1-year time frame. Trust fund income for 1983 was overestimated and disbursements underestimated, as table 4.3 shows. The net effect maintained the trust fund at about the 1982 level, but $2.6 billion below the projection for 1983. For 1984, SSA underestimated revenues by $2.2 billion, while overestimating disbursements by $1.1 billion. These differences combined to underestimate the year-end fund balances by about $3.3 billion.

Also, the trust fund projections developed variations between the 1983 and 1984 Trustees' Reports. In the 1983 report, SSA projected a fund balance of $39.7 billion for the end of 1987. In the 1984 report, the projection for 1987 had increased to $51.7 billion, a 30-percent increase.

The projections for the end of 1988 show even greater deviations. In its 1983 projections, SSA estimated an OASDI trust fund balance of $53.9 billion. In the 1984 and 1985 reports, the projected 1988 trust fund balance is about $85 billion, an increase of nearly 60 percent over 1983's projection. In large part, these differences are due to the unexpectedly strong economic recovery of 1983, which was not foreseen at the depth of the recession during which the 1983 estimates were made.

Long-Term Projections Show a Substantial Trust Fund Buildup

SSA's projections for the balance in the trust fund show significant increases beginning in 1988. Part of the reason for the improved trust fund position is favorable demographic conditions. Even though life expectancy is increasing, the low fertility rates of the late 1920's and 1930's will slow the rate of increase in the population over age 65 during the 1990's and the first decade of the 21st century. At the same time, the post-World War II baby boom population, which has now entered the labor force, will experience its peak earning years during this period.

Another reason for the improved trust fund position is the timing of payroll tax increases. Some scheduled future increases were moved forward in the 1977 Amendments, with an ultimate OASDI rate of 6.2 percent for both employer and employee. The 1983 Amendments, which adhered to the recommendations of the National Commission on Social Security Reform, advanced part of the scheduled 1990 increase to 1988 and the 1985 increase to 1984. Advancement of payroll tax increases in the 1977 Amendments can be viewed as an implicit movement a way from the pay-as-you-go financing concept, and the 1983 Amendments have reinforced this change.

Projected Surplus Results From Higher Payroll Taxes Than Needed to Pay Current Benefits

One rationale for this shift away from pay-as-you-go financing stems from the projected change in the age structure of the U.S. population. In 1985, Social Security benefits could be financed fully under the current payroll tax rate of 5.7 percent each for employer and employee. But under intermediate (alternative II-B) assumptions, the OASDI tax rate necessary to finance benefits on a current-cost basis in 2030 and thereafter would be in the range of 7.9 or 8.0 percent.

As previously noted, the higher costs of Social Security beginning after the first quarter of the 21st century result from projected increases in the ratio of beneficiaries to workers beginning when the first members of the baby boom generation retire. If current demographic projections are accurate, currently scheduled benefits not altered, and Social Security financed on a current-cost basis, there would be no way to avoid these payroll tax increases.

Under the currently legislated schedule, however, future payroll tax rates diverge from the level necessary for current-cost financing. The 6.2-percent rate established for 1990 and thereafter is higher than is required for current-cost financing before about 2015, and is lower than required for current-cost financing thereafter. The current schedule appears to shift a portion of the future burden away from those who will be working in the 2015-2050 period and onto those working during the 1990-2015 period.

Thus, the current tax schedule levies higher taxes on the current covered working population than are needed to meet current benefit requirements, thereby building a substantial surplus in the trust fund. When the baby boom generation enters retirement age (starting sometime after 2010), the projections would imply undertaxing the covered working population relative to benefit payment requirements. The trust fund would then use the accumulated balances to cover the differential between income and disbursements.

Reserves Could Build Rapidly

A rapid buildup of trust fund reserves, indicated by increased reserve ratios projected under alternative II-B, is shown in table 4.4. By the year 2000, the level of reserves is projected to reach $1.2 trillion, a ratio of 254 percent. This means there would be 2.5 years of disbursements in the trust fund without considering any future income. The accumulation continues until about the year 2015, when the reserve ratio is 495 percent or almost a 5-year reserve. This is also borne out in the estimates of actuarial balance, shown in table 4.5.

ble 4.4: Long-Term OASDI Trust Fund ojections Under Alternative II-B (1985-60)

Dollars in billions

Calender year	Projected disbursements	Projected reserve balances	Reserve ratio[a]	Percent of GNP
1985	$ 193.2	$ 46.4	24	1
1986	204.5	50.5	25	1
1987	220.0	58.5	27	1
1988	237.0	70.2	30	1
1989	254.5	105.1	41	2
1990	273.1	148.8	54	3
1995	368.1	512.6	139	7
2000	473.2	1,202.0	254	11
2005	640.2	2,409.9	376	16
2010	904.3	4,236.6	468	21
2015	1,324.1	6,557.5	495	25
2020	1,954.1	9,012.7	463	26
2025	2,790.2	11,053.1	396	24
2030	3,840.7	12,114.7	315	20
2035	5,098.7	11,931.7	234	15
2040	6,611.8	10,326.9	156	10
2045	8,605.6	6,947.5	81	5
2050	11,290.2	483.9	4	0.3
2055	14,817.8	−10,896.6	−74	−4
2060	19,457.0	−29,594.9	−152	−9

[a]Calculated by GAO.

Source: "Long-Range Projections of Social Security Trust Fund Operations in Dollars," Harry C. Ballantyne, Chief Actuary, SSA, Actuarial Note 125, Apr. 1985.

Table 4.5: Comparison of Estimated OASDI Cost Rates and Income Rates Under Alternative II-B (Calendar Years 1985-2060)

As a percent of taxable payroll

	Cost rate			Income rate			
Calendar year	OASI	DI	Total	Payroll tax	Taxation of benefits	Total	Balance
Alternative II-B:							
1985	10.10	1.19	**11.29**	11.40	0.21	**11.61**	**0.32**
1990	10.03	1.04	**11.07**	12.40	.31	**12.71**	**1.64**
1995	9.81	1.05	**10.86**	12.40	.40	**12.80**	**1.94**
2000	9.04	1.12	**10.17**	12.40	.39	**12.79**	**2.62**
2005	8.83	1.29	**10.12**	12.40	.40	**12.80**	**2.67**
2010	9.26	1.48	**10.74**	12.40	.44	**12.84**	**2.10**
2015	10.38	1.60	**11.98**	12.40	.51	**12.91**	**.93**
2020	11.85	1.66	**13.51**	12.40	.59	**12.99**	**−.52**
2025	13.17	1.74	**14.90**	12.40	.67	**13.07**	**−1.83**
2030	14.01	1.69	**15.70**	12.40	.73	**13.13**	**−2.57**
2035	14.25	1.64	**15.89**	12.40	.76	**13.16**	**−2.73**
2040	14.06	1.65	**15.71**	12.40	.77	**13.17**	**−2.54**
2045	13.90	1.70	**15.59**	12.40	.78	**13.18**	**−2.41**
2050	13.88	1.70	**15.58**	12.40	.78	**13.18**	**−2.40**
2055	13.86	1.69	**15.55**	12.40	.78	**13.18**	**−2.37**
2060	13.83	1.69	**15.51**	12.40	.78	**13.18**	**−2.33**
25-year averages:							
1985-2009	9.46	1.15	**10.62**	12.26	.36	**12.62**	**2.00**
2010-2034	12.14	1.65	**13.79**	12.40	.61	**13.01**	**−.78**
2035-2059	13.96	1.68	**15.64**	12.40	.78	**13.18**	**−2.46**
75-year averrage:							
1985-2059	11.85	1.49	**13.35**	12.35	.58	**12.94**	**−.41**

Source: 1985 Trustees' Report, OASDI, p. 64.

Over the 25-year period 1985-2009, the income rate exceeds the cost rate by an average of +2.00 percent of taxable payroll, under alternative II-B. An actuarial surplus of 2 percent of taxable payroll implies that, other things being equal, the current tax rates could be lowered by 2 percent (1 percent each for employer and employee) for each year in the period and the system would still be able to maintain actuarial balance over the 25-year period.[6]

[6]The discussion here is intended to illustrate the concept of actuarial balance and abstracts from the current level of trust fund reserves as well as the 75-year actuarial balance (under II-B assumptions). We note that if such a tax reduction were adopted as policy, the trust fund could become insolvent given its relatively low level in 1985 and close actuarial balance over the 75-year projection period would be lost.

The projections show a positive actuarial balance in each year through 2015 when the actuarial balance in that year is +.93. However, by the year 2020, the income rate is less than the cost rate by −.52 percent of payroll. Thus, the changeover from an annual actuarial surplus to an actuarial deficit implies that between 2015 and 2020 the accumulation can be considered to end. After this time, the cost rate will exceed the income rate, and the projected actuarial deficit implies a drawdown of reserves over the period 2020-2050. After 2050, the trust fund would be exhausted under the II-B assumptions, and if this situation were to occur, adjustments in tax rates or benefits would be necessary.

Another way to view the projected trust fund buildup is through the ratio of trust fund balance to nominal GNP, also shown in table 4.4. Through 1983, the maximum ratio of trust fund balances to GNP occurred in 1954 (before the establishment of DI), when it was 5.6 percent. Using the economic and demographic assumptions of alternative II-B, trust fund balances are projected to grow from their current level of about 1 percent of nominal GNP to 26 percent by 2020.

In summary, the measures adopted by the Congress in the 1983 Amendments were intended to increase Social Security revenues and decrease disbursements, so that the declining trust fund balance would stabilize and eventually increase. Data for 1983 and 1984 suggest that these policies have successfully stabilized the trust fund, but a low level of trust fund reserves is anticipated for the next few years. The Trustees find it difficult, however, to produce accurate trust fund estimates, even for a short time span. For example, trust fund projections for 1988 varied from $53.9 billion in the 1983 Trustees' Report to about $85 billion in the 1984 and 1985 reports.

Significantly, after a period of inadequate financing, a new situation may occur starting around 1988. Beginning at that time, due to favorable demographic conditions and the timing of payroll tax increases, projected trust fund balances show major increases. Over the 25-year period 1985-2009, the income rate for Social Security will exceed the cost rate by an average of 2 percent of taxable payroll.

Under the current intermediate assumptions and tax schedule, the projections imply the buildup of a substantial surplus in the trust fund until the baby boom generation enters retirement age starting sometime after 2010. This buildup is evident in that, by the year 2000, trust fund

reserves are projected to reach $1.2 trillion, a reserve ratio of 254 percent (2.5 years' disbursements). By 2015, the reserve ratio is projected to be 495 percent (almost a 5-year reserve).

The estimates further imply a significant shift away from the pay-as-you-go or current-cost concept that has characterized Social Security financing over much of its history. The implication of this reserve accumulation is the subject of continuing debate.

The Projected Social Security Trust Fund Accumulation: Will It Occur? What Are Its Implications?

The OASDI projections under the 1983 Amendments, incorporating intermediate assumptions, show the buildup of a substantial reserve in the OASDI trust fund between 1988 and 2020. Although many conditions will likely change over such a long period of time, when viewed from the present, the projected trust fund accumulation is of substantial proportions. This projection also raises many questions including: How likely is such a reserve accumulation to occur, and what would be the national implications of a large trust fund accumulation?

In the mid-1990's, when the accumulation of excess reserves is projected to begin under intermediate assumptions, the Congress might decide to use the surplus to lower Social Security payroll taxes or increase benefits. While either action would lessen the reserve accumulation, they would leave unanswered the long-run financial problems of Social Security.

A trust fund accumulation, should it actually occur, would raise many issues. One rationale for the trust fund buildup is to increase retirement savings and economic growth in order to alleviate the tax burden on future generations to finance Social Security benefits. There is reason to question whether this increase would raise aggregate savings for the nation as a whole. Even if savings were increased, their contribution to future economic growth would depend on the use of trust fund reserves; this in turn would depend on whether the federal budget was balanced or in deficit.

The Reserve Accumulation and Actuarial Balance

As discussed in the previous chapter, the key to understanding the underlying rationale for the projection of a trust fund reserve accumulation and subsequent drawdown during the second quarter of the 21st century is the concept of actuarial balance, which is achieved by equalizing cost and income rates on average over the 75-year projection period.[1] The system is projected to be in actuarial balance because

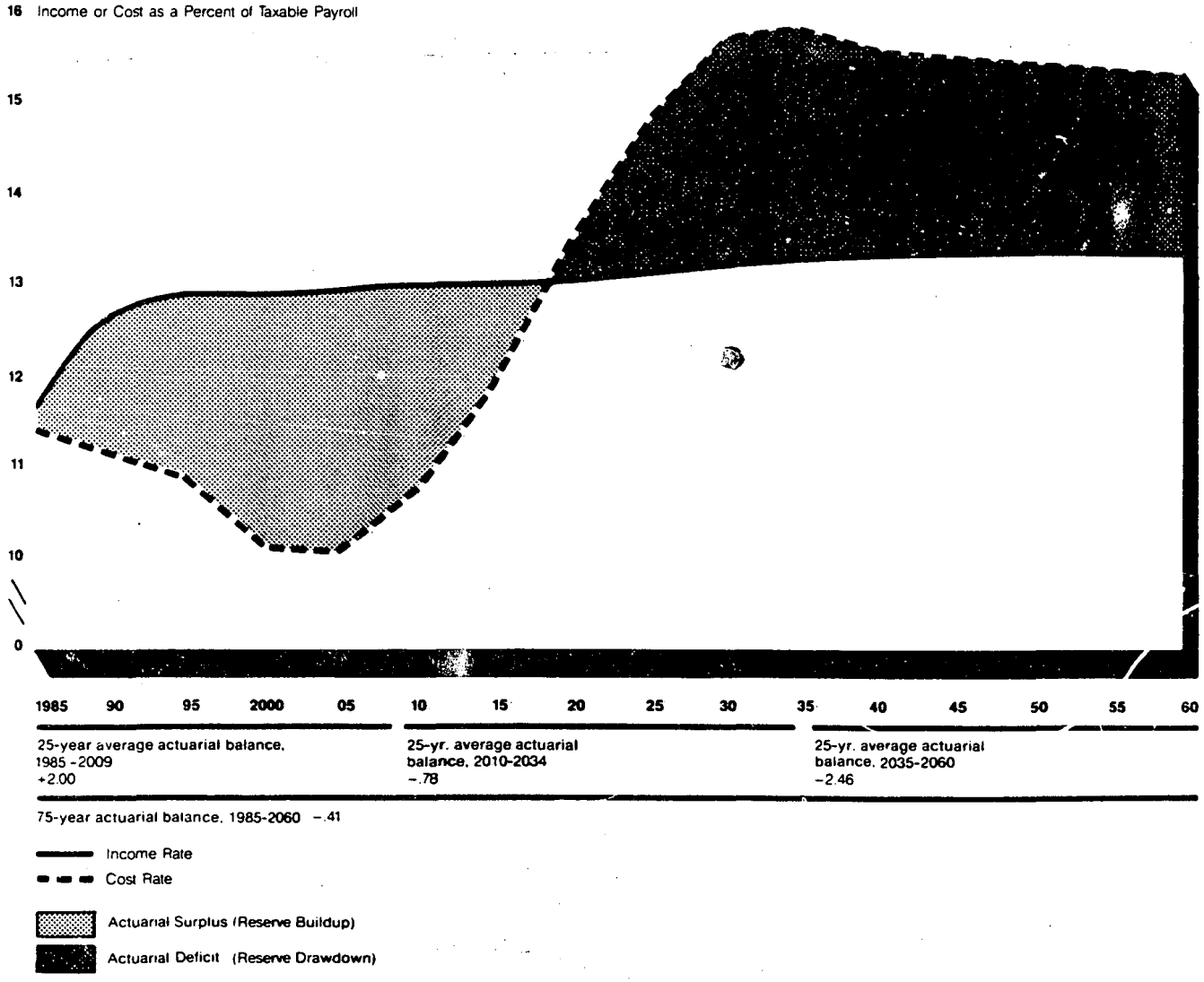
[1]The projections prepared after the 1983 Amendments show the system to be close to actuarial balance using this concept. This objective is illustrated by reference to the 1983 Report of the National Commission on Social Security. Referring to the 1982 SSA projections it states:

"The National Commission finds that, for purposes of considering the long range financial status of the OASDI Trust Funds, its actuarial imbalance for the 75-year valuation period is an average of 1.8% of taxable payroll." Report of National Commission on Social Security Reform, Jan. 1983, pp. 2-2,3.

The goal of restoring the system to solvency was stated clearly in the Commission's "consensus" package of recommendations, "They further agreed that the long range deficit should be reduced to approximately zero." Report of the National Commission on Social Security Reform, pp. 2-3.

projected income rates are set higher than projected cost rates in the years before 2020, thereby showing a substantial buildup. This is followed by a substantial decline in trust fund reserves, as illustrated in figure 5.1.

Figure 5.1: income and Cost Rate for OASDI Under Alternative II-B (1985-2060)



The concept of actuarial balance, however, does not necessitate the pattern of reserve buildup and drawdown projected. As actuarial balance represents simply an average of annual differences between income and cost rates over 75 years, virtually any pattern is possible in the abstract. For instance, years in which there might be large actuarial deficits could be followed by years of a large actuarial surplus. The system could be shown to be in 75-year actuarial balance, even though, from a practical viewpoint such a pattern might imply insolvency of the trust fund in the early years.

The Commission and the Congress could have decided not to fully close the long-run financing gap and could have adopted alternative tax paths. Instead of the approach actually chosen, the Congress might have focused on only a short-run solution to Social Security financial problems, which would have made the adoption of some provisions (such as a part of the 1988 or 1990 payroll tax increase) unnecessary. This would have lessened any projected reserve accumulation and maintained a pay-as-you-go, current-cost financing structure. However, actions such as this would also have the effect of leaving to a future generation the problem of raising tax rates or making other adjustments to finance retirement benefits.

Poor Economic Conditions or Potential Policy Changes Could Affect the Trust Fund Accumulation

In analyzing the implications of the projected accumulation (given the current trust fund projections and currently legislated tax rates), one of the first issues is whether the reserve accumulation will occur. One dimension of this issue involves the technical accuracy of whether the economic and demographic values adopted as the basis of the trust fund projections will match their actual future values.

Another aspect concerns the range of possible federal actions that can affect both the likelihood that a trust fund buildup will occur and its impact.

The Trust Fund Ratio May Exceed "Adequate" Contingency Levels by 1996

One response to the almost inevitable inaccuracy in any economic and demographic projection is to provide a range of estimates under different assumptions. Related to this is what is generally termed a sensitivity analysis, in the sense that, given a model or quantitative description of the program, the sensitivity of an estimate will depend on how that estimate responds to changes in the underlying variables that determine it. The Bartlett-Applebaum analysis (see pp. 33-34) provides

a basis for analyzing the sensitivity of short-run changes in the trust fund ratio to changes in underlying economic conditions.

One could specify an almost infinite number of scenarios in conducting a sensitivity analysis. SSA provides estimates under the set of four alternatives which represent a reasonable judgment of the likely range of variation in the underlying economic and demographic assumptions. The actuarial balance estimates and the projected trust fund ratios are presented in table 5.1 and 5.2.

Table 5.1: Comparison of Estimated Average Cost Rates with Total Income Rates for OASDI, by Alternative (As a Percentage of Taxable Payroll)

	Total OASDI		
Alternative by calendar years	**Average cost rate**	**Average total income rate**	**Balance**
I (Optimistic):			
1985-2009	9.44	12.58	**+3.14**
2010-2034	10.62	12.87	**+2.25**
2035-2059	10.67	12.93	**+2.26**
1985-2059	10.24	12.79	**+2.55**
II-A (Intermediate):			
1985-2009	10.18	12.60	**+2.42**
2010-2034	12.88	12.97	**+.09**
2035-2059	14.50	13.12	**−1.38**
1985-2059	12.52	12.90	**+.38**
II-B (Intermediate):			
1985-2009	10.62	12.62	**+2.00**
2010-2034	13.79	13.01	**−.78**
2035-2059	15.64	13.18	**−2.46**
1985-2059	13.35	12.94	**−.41**
III (Pessimistic):			
1985-2009	11.85	12.66	**+.82**
2010-2034	17.49	13.18	**−4.31**
2035-2059	24.18	13.60	**−10.58**
1985-2059	17.84	13.15	**−4.69**

Source: 1985 Trustees' Report, OASDI, p. 69.

Over the 75-year period 1985-2059, the system is in close actuarial balance under the intermediate assumptions in alternatives II-A and II-B. The estimates under alternative I (optimistic) assumptions show the trust fund having an actuarial surplus equivalent to +2.55 percent of taxable payroll; under alternative III (pessimistic) assumptions, there is an actuarial deficit of −4.69 percent.

How do these actuarial balance calculations translate into trust fund reserve ratios? The projections for 1985-2060 are shown in table 5.2. Aside from the general notion that the reserve ratio should be maintained at around 100 percent (1 year's reserve), there is neither a formal definition of "adequate" reserve levels nor a similar definition for "excess" trust fund reserves.[2]

Table 5.2: Estimated OASDI Trust Fund Reserve Ratios by Alternative (Calendar Years 1985-2060)

	Total OASDI			
Calendar year	I (Optimistic)	II-A (Intermediate)	II-B (Intermediate)	III (Pessimistic)
1985	24	24	24	24
1986	27	25	25	22
1987	31	28	27	20
1988	39	34	30	19
1989	56	48	41	21
1990	76	64	54	21
1991	103	84	71	26
1992	127	104	87	32
1993	156	124	104	39
1994	181	145	121	45
1995	216	167	139	53
1996	248	192	159	61
1997	286	220	181	69
1998	330	250	205	79
1999	375	282	230	89
2000	420	313	254	99
2001	468	345	279	110
2002	517	378	304	119
2003	568	411	328	129
2004	618	444	353	138
2005	668	475	376	146
2006	717	506	399	153
2007	764	535	420	159
2009	847	583	455	166
2010	882	602	468	166
2015	1,001	654	495	135

[2]Note that the Trustees suggest that "the level of each fund should be large enough to allow time for legislative action to prevent its exhaustion during periods of continued annual deficits." 1984 Trustees' Report, OASDI, p. 31.

	Total OASDI			
Calendar year	I (Optimistic)	II-A (Intermediate)	II-B (Intermediate)	III (Pessimistic)
2020	1,046	639	463	53
2025	1,062	590	396	[a]
2030	1,095	533	315	[a]
2035	1,187	484	234	[a]
2040	1,284	446	156	[a]
2045	1,418	410	81	[a]
2050	1,551	372	[a]	[a]
2055	1,686	333	[a]	[a]
2060	1,822	294	[a]	[a]
Trust fund estimated to be exhausted in:	[b]	[b]	**2049**	**2021**

[a]Fund estimated to be exhausted.

[b]Fund not estimated to be exhausted within the projection period.

Source: 1985 Trustees' Report, OASDI, p. 70.

An attempt to estimate the appropriate or "optimal" level of the trust fund reserve ratio that, under deteriorating economic conditions, would provide the system with adequate contingency reserves, can be found in a recent study by Munnell and Blais.[3] They find that a reserve ratio somewhere between 85 and 145 percent is sufficient to weather a period of poor economic conditions similar to those of 1973-80. Any future accumulated reserves above such a "target ratio," they suggest, are surplus funds available for long-term investment.

Under alternative II-B, using the range developed by Munnell and Blais, the OASDI trust fund exceeds "adequate" contingency reserves and begins accumulating a surplus in 1996 (see table 5.2). This is the year the trust fund ratio exceeds about 145 percent. Under the optimistic assumptions, the trust fund begins accumulating excess reserves by 1993. But given pessimistic economic and demographic conditions (alternative III), "surplus" reserves do not begin to accumulate until 2003.

Under the pessimistic assumptions, the trust fund at its peak in 2010 could have reserves equal to only about 2 years' disbursements and be exhausted by 2021. The pessimistic scenario assumes that the real wage differential falls to about 1 percent over the long run. While low, this differential is still positive. In contrast, from 1974 to 1982, the actual real wage differential was generally negative. Underlying the projection

[3]Alicia Munnell and Lynn Blais, "Do We Want Large Social Security Surpluses?" New England Economic Review, Sept./Oct. 1984, pp. 5-21.

is an average 5-percent inflation rate over the long run. Thus, a major danger for the projections and the status of Social Security is the reappearance of high inflation and falling real wages over a sustained period. Such an occurrence would largely negate the projected trust fund buildup.

Congressional Actions Could Reduce Projected Buildup

If current projections under intermediate assumptions prove technically accurate, the status of Social Security will appear positive into the mid-1990's, when the accumulation of excess reserves is projected to begin. Given the perception of a substantial excess reserve accumulation, the Congress might decide to lower payroll tax rates and maintain the system on more of a pay-as-you-go basis.[4]

The Congress could also increase benefits, which, absent offsetting payroll tax increases, would also negate the projected reserve accumulation. One way this could occur is if the Congress considered the accumulation as an overestimate of required trust fund balances and responded by raising the level of OASI or OASDI benefits. A likely rationale for a benefit increase might occur when the Congress considers the role of women in Social Security, a problem which was acknowledged in the 1977 and 1983 Amendments to the Social Security Act. Existing inequities might be resolved by increasing benefits, which could have the result of increasing outlays relative to income.

Another congressional option arises because of the recent precedent set by interfund borrowing. This occurred when funds from the DI and HI trust funds were borrowed by the OASI trust fund. Current projections show the HI trust fund declining to the point that Medicare benefits could no longer be fully financed sometime in the mid to late 1990's, thereby requiring congressional action, such as reducing Medicare benefits or increasing the Medicare tax rate.[5] Alternatively, the Congress could consider borrowing from OASDI or altering tax rates among HI and OASDI while maintaining their overall level. Either action would have the effect of deferring or lessening the reserve accumulation in so far as reserve funds would not be available to pay OASDI benefits.

[4]Again, such actions could affect the system's long-run actuarial balance. It has also been suggested that Social Security tax rates could be adjusted administratively based on the level of the trust fund ratio. However, this could present difficulties in terms of the timing of tax changes with the business cycle.

[5]Constraining National Health Care Expenditures, (GAO/HRD-85-105, Sept. 30, 1985), p. 12.

All of the above responses—reducing the payroll tax rate, increasing benefits, or altering tax rates among OASDI and HI— would lessen the reserve accumulation. In addition to these Social Security policy responses, other implications may arise if the trust fund accumulation occurs as projected. To understand these implications, it is necessary to consider the interaction between Social Security finance and the federal budget.

Social Security Finance and the Budget

The pay-as-you-go nature of Social Security implies that the annual revenues from payroll taxes are approximately equal to annual disbursements to beneficiaries. At the same time, Social Security, until very recently, was included as a part of the unified federal budget. This implied that imbalances between Social Security revenues and outlays affected the federal budget. When the system operates closely on a pay-as-you-go basis, imbalances are met from trust fund reserve accumulation or drawdown. If revenues were less than disbursements in a given year, Social Security added to the deficit. Conversely, revenue greater than disbursements acted to offset a deficit in the remainder of the budget or, in a balanced budget context, led to a surplus in the unified budget.

Thus, under the previous budgetary treatment of Social Security, moving the system away from a pay-as-you-go concept had the effect of improving the overall position of the unified budget. Social Security surpluses offset deficits elsewhere in the budget. It had been suggested, for instance, that the Congress might anticipate annual Social Security surpluses and consequently adjust other non-Social Security revenue and spending.[6]

In effect, the Congress anticipated the budgetary effect of the projected reserve accumulation by acting to move Social Security out of the unified budget starting in fiscal year 1993, that is, at approximately the time the trust fund buildup is projected to become significant.[7] Most recently, the Balanced Budget and Emergency Deficit Control Act of 1985 (commonly referred to as Gramm-Rudman-Hollings) advanced the

[6]For instance see, David Koitz, "Social Security and the Federal Budget," Congressional Research Service Review, 99th Congress, February 1985, pp. 10-11. This point implies that the Congress might have anticipated the revenue/outlay balance for Social Security and considered it before making other budget decisions. Since this is a matter of conjecture, we adopt an "ex-post" viewpoint in the discussion that follows later in this chapter.

[7]See Public Law 98-21, 98th Congress, Social Security Amendments of 1983, Apr. 20, 1983 (97 stat. 139, section 710(a)).

date of removal to fiscal year 1986. While these actions have the effect of making the non-Social Security budget position more evident, they do not alter the basic financial transactions that take place between the Social Security trust fund and the Treasury.

As discussed, the balance in the trust fund is invested in Treasury securities. Likewise, any drawdown requires that the trust fund sell some of its holdings back to the Treasury. With a projected trust fund accumulation, a large amount of funds will be invested in government securities. In essence, the funds made available to the trust fund through excess payroll tax revenues are turned over to the Treasury in exchange for securities. The Treasury then has more funds available in exchange for its promise to redeem the securities held by the trust fund at some future time. When the trust fund redeems its securities to pay current benefits, the Treasury will have to sell new government securities in the financial markets to raise the funds.

It should also be noted that insofar as the Treasury issues debt to the trust fund, the national debt still rises. However, the accumulation of a surplus in the trust fund means that the portion of the debt called "debt held by government accounts and trust funds" rises relative to the "debt held by private investors," which may actually decline in this case.[8]

What the Treasury does with these surplus funds will still depend on the position of the budget. If the non-Social Security portion of the budget is in deficit, the funds will essentially be employed to finance some or all of the deficit. Here the trust fund resources substitute for borrowing from the financial markets. In effect, the non-Social Security budget deficit is financed not by borrowing from the public but rather by levying a higher payroll tax than is needed to cover current Social Security benefits.

But if the non-Social Security budget is balanced (or in surplus), the Treasury can use the excess Social Security revenues to retire outstanding public debt. It may retire outstanding government debt as it matures or it may buy back government securities directly from private investors. Thus, the government essentially generates surplus funds through the payroll tax, which it then turns over to those who previously invested in government securities.

[8]See Treasury Bulletin, table FD-1, any issue.

Economic Aspects of the Trust Fund Accumulation

As a result of the effect of the shift in demographic conditions on Social Security financing the possibility occurs that, without a reserve buildup such as that adopted in the 1983 Amendments, a future generation of workers will bear the burden of high tax rates to pay the benefits of the relatively large cohort of retirees. This raises the question of not only whether Social Security will be adequately financed, but whether it will be financed equitably across generations. This issue of intergenerational equity is complex, involving theoretical aspects of economics and political choice.

The Reserve Accumulation Could Increase National Savings, Capital Investment, and Economic Growth

The projected trust fund accumulation may be viewed as an attempt to avoid an excessive tax burden on future generations after the first quarter of the 21st century. The buildup creates a large pool of (forced) saving through slightly higher payroll tax rates. This pool of (government) saving could presumably provide the basis for increased capital investment and economic growth and thus expand the base upon which future taxes to finance Social Security are levied. This can have the effect of helping insure the system's solvency.

Basically, the issue of whether the financing of Social Security confers a burden on future generations concerns whether their standard of living or their level of after-tax real income is equal to, lower than, or higher than that of some previous generation. If the growth of real income (i.e., economic growth) has been "sufficient," the younger generation should be able to pay retirement benefits on the basis of a higher living standard or real income level. This raises questions concerning what rate of economic growth is "sufficient" and what factors are likely to bring about higher growth.

The rate of economic growth is linked to many factors, but in general, it depends upon the growth of resources (or inputs) and increases in productivity (or output per unit of input). One important input is population, which determines the growth of the future labor force. Economic growth must be sufficient to absorb the increase in the labor force if living standards are to be maintained. Increases in productivity arise from many sources, such as increases in knowledge and better methods of production and management of resources. However, it is commonly believed that increases in capital (physical assets) are a key to greater economic growth in making labor more productive in producing goods and services. Thus, greater economic growth is associated with increased capital formation and investment.

The formation of capital for investment purposes requires that society defer some of its consumption of goods and services from the current period to future periods. If this deferred consumption is put to "productive" uses, the "saving" promises a return and greater consumption possibilities in the future. In essence, society's ability to finance retirement benefits equitably across generations depends on the rate of economic growth, which is related to the current rate of capital formation or saving in earlier time periods. The reserve buildup can be seen as an attempt to raise the rate of saving and economic growth so that a future generation will not be worse off even if it is required to pay a higher proportion of its income to finance the benefits of retirees.[9]

It Is Unknown Whether the Trust Fund Buildup Will Subsequently Result in Increased Economic Growth

Many unresolved issues remain concerning saving and its role in promoting economic growth. Although the goal of the trust fund buildup is to increase retirement savings, there is reason to question whether this will raise aggregate savings for the nation as a whole. For instance, it is unclear whether workers who are contributing excess payroll taxes will actually consider this additional saving for retirement or whether they will reduce other forms of saving to maintain their previous level of consumption.

Additional complications arise because Social Security itself may have an effect on society's rate of saving. There are a number of divergent views on Social Security's effect, however. One view holds that the existence of Social Security causes individuals to be more conscientious about providing for their retirement and hence encourages additional saving. An alternative view that spurred a considerable controversy throughout the 1970's held that Social Security's promise to pay future benefits creates a form of perceived wealth which actually leads individuals to reduce saving during their lifetime. This tends to increase current consumption at the expense of saving, and hence the future capital stock may be reduced. This view leads toward a conclusion that Social Security should be at least partially funded and is broadly consistent with the rationale discussed previously for the current projected reserve

[9]We analyzed whether a relatively small increase in the rate of productivity growth could offset the effect a higher future Social Security tax would otherwise have on the after-tax earnings of future workers. The objective of the analysis was not to endorse the trust fund accumulation as necessarily constituting the best way of accommodating the projected demographic change, nor was it intended to be a prediction of the actual effect of such an accumulation. Instead, it was to identify the possible positive effect that an accumulation could have, provided that the trust fund accumulation is actually translated into enhanced capital formation. We found, as shown in appendix IV, that, all other things being equal, it takes only a relatively small increase in the rate of growth of productivity to offset the impact of the demographic shift on future workers' after-tax earnings.

accumulation. Another view holds that the promissory benefits of Social Security are completely perceived as future tax liabilities. This leads individuals to voluntarily increase their current saving to offset the expected future liabilities. Further complications arise when there are transfers among generations, that is, gifts and bequests.

In the aggregate, it is difficult to predict whether the trust fund buildup will lead to a higher rate of aggregate saving. If aggregate saving does increase, however, it is also unclear whether these savings will result in a larger capital stock and increased economic growth. This will depend to a great extent on whether the funds are put to "productive" uses. In this sense, the government is called upon to act as a trustee, a role analogous to that of a private trustee who has responsibility for investing funds productively.

In the case of a trust fund accumulation when the non-Social Security portion of the budget is in deficit, the funds must be, in effect, invested in the budget deficit. Whether this is a productive investment is less certain. One view is that if the budget deficit is incurred because of excessive spending on "consumption items," then in effect the trust fund reserves are accumulated but are spent in a way that brings no future return in the form of higher economic growth. If, on the other hand, the non-Social Security budget deficit is incurred because of spending on public capital (e.g., roads, bridges, and other physical assets) or on human capital (e.g., education and training), this may constitute a productive use. It is not easy, however, to determine whether a given budget outlay is consumption or public investment.

For a trust fund accumulation that occurs together with a budget surplus, the use of funds to generate saving and capital formation is generally thought to be more likely. The government cannot employ the funds directly in the private economy through the purchase of, say, equities and corporate bonds. This would imply government ownership of private capital. However, retiring outstanding public debt held by private investors returns the funds to the private sector, where they are more likely to be reinvested in private capital. This is thought to be more likely to generate economic growth and the resulting wealthier society will have a sufficient base on which to finance future retirement benefits. In this sense, an excessive burden on future generations will be avoided and the objective of the trust fund buildup achieved.

Additional Economic Policy Issues Concerning the Reserve Accumulation

As Social Security can affect economic activity, the trust fund reserve accumulation quite likely will have some important effects on both short- and long-run economic activity. These include negative economic effects of increased payroll taxes in the short run, debt management and monetary policy issues in the long run, and equity issues relating to the use of the payroll tax as a means to increase national saving and capital formation.

In a short-run context, as the trust fund accumulation becomes significant, the excess payroll taxes could negatively affect disposable income, consumption, and output (GNP), resulting in slower economic growth. This could also slow nominal wage growth and raise unemployment, two factors that could lower taxable payrolls and income to the trust fund. This lack of accounting for "feedback" effects, where Social Security policy affects the economy, and in turn affects the trust fund, represents an implied criticism of the projection process. As discussed earlier, SSA is aware of this aspect.[10] More important, however, are the short run policy responses, such as changes in monetary policy which can help maintain growth in output, employment, and real wages. Thus, it is not at all certain that higher payroll taxes would generate negative economic effects in the aggregate. However, this aspect will require further study and continued monitoring by the Congress.

The longer-run implications of the trust fund reserve accumulation for economic policy are also potentially significant. The projected accumulation is so large that it is not inconceivable that reserves could come to constitute a significant portion of, if not actually exceed, the national debt. More specifically, the national debt would come to be held by the Social Security trust fund rather than by private investors.

One implication concerns debt management policy. As reserves become large and if the federal budget is balanced, the Treasury would have to begin retiring the outstanding public debt held by private investors. This could generate effects on financial markets and economic activity depending on the timing, amount, and maturity of the debt that is retired. This "problem" may be one which is manageable because there is a previous history of Treasury debt retirement particularly after

[10]John C. Hambor, "Economic Models and the Study of the Economic Effects of Social Security," Social Security Bulletin, Vol. 47, No. 10, Oct. 1984, pp. 3-8.

periods of war.[11] However, the potential size of the debt retirement is substantial and is significant in light of current problems of financing budget deficits. Also, after the mid-2020's, when the drawdown phase begins, the Treasury again might have to alter its focus toward borrowing rather than debt retirement.

A related implication concerns the conduct of monetary policy. The major tool that the Federal Reserve uses to control the money stock is open market operations. These represent transactions in government securities between the Federal Reserve and the public for the purpose of controlling the level of bank reserves. If the outstanding federal debt held by the public was completely or substantially retired, the Federal Reserve might be hampered in conducting open market operations. It would, however, have other tools, such as the discount rate and changes in reserve requirements or conducting open market operations with other assets, but it is not clear at present whether this aspect represents a serious potential problem.

Another problem raised by the projected trust fund accumulation concerns the use of the payroll tax as a means of generating increased national saving and capital formation. The issues this raises are, in large part, ones of equity. The payroll tax is generally thought to be regressive in that it constitutes a higher proportion of the income of those at the lower end of the income distribution. The broader issue concerns whether the payroll tax is the best vehicle to increase savings and investment. Henry Aaron, an economist at the Brookings Institution, discussed these concerns in light of the uncertain effect of Social Security on saving.

"If our objective is to increase the rate of capital accumulation, we should ask which instruments are best for achieving that end. Prominent on the list should be direct assaults on the federal deficits, incentives to business investment, and the withdrawal of incentives that promote inefficient investments."[12]

The accumulation of a Social Security surplus, through higher payroll taxes or reduced benefits, can lead to higher national saving, Aaron notes. He questions, however, whether this is most conducive to economic efficiency and fairness, stating:

[11]The federal government retired substantial amounts of debt, accumulated to finance wartime expenditures, following the Civil War, as well as World Wars I and II. See Tilford Gaines, Techniques of Treasury Debt Management, The Macmillan Company, 1962.

[12]Henry J. Aaron, Economic Effects of Social Security, The Brookings Institution, Washington, D.C., 1982, pp. 51-52.

"Why should benefit reductions or payroll tax increases, rather than increases in other taxes or reduction in other government spending be used as the instrument to raise total saving?

". . . If we wish to increase capital formation, the proper objective is the total saving rate, and that raising social security payroll taxes or cutting social security benefits is a poor device for achieving that objective unless we favor them on other grounds. We should make social security policy on the basis of considerations other than its supposed effects on saving."[13]

Thus, Aaron raises the question of whether society should use the payroll tax, whose burden is generally thought to fall on relatively lower income groups, to generate higher savings and investment.

Other economists have concluded that a large reserve accumulation is undesirable. Munnell and Blais state that:

"In view of the improbability that social security surpluses will increase national saving and the possibility that, if increased saving did materialize, it would have adverse fiscal implications or disrupt financial markets, . . . it would be preferable to return the social security system to pay-as-you-go financing with a substantial contingency reserve."[14]

They foresee, however, that no action is needed for a few years until a decision is required on the size of the 1988 Social Security tax increase and on whether the scheduled 1990 increase should go into effect. They also conclude that

"Eliminating the accumulation of reserves during the 1990-2020 period will require somewhat higher OASDI taxes later, but these increases should be fairly modest—roughly the equivalent of 1 percent each for the employee and employer."[15]

In summary, the projected buildup of a large reserve fund raises several questions. The first is whether this reserve accumulation will actually occur. Under pessimistic assumptions, the reappearance of high inflation and falling real wages over a sustained period would largely negate the projected buildup. If the projections prove technically accurate, the Congress may decide, at the time the accumulation of excess reserves is projected to begin, to use this surplus to reduce payroll taxes, increase benefits, or loan funds to the Medicare fund.

[13]Aaron, Economic Effects of Social Security, p. 52.

[14]Munnell and Blais, New England Economic Review, Sept./Oct. 1984, p. 6.

[15]Munnell and Blais, New England Economic Review, Sept./Oct. 1984, p. 6.

One rationale for the reserve buildup concerns the effect of the shift in demographic conditions on Social Security financing. Without the reserve accumulation, it is theorized, a future generation of workers will bear the burden of higher tax rates to pay the benefits of the relatively large cohorts of retirees. The buildup is intended to create a large pool of forced saving through slightly higher payroll tax rates; this saving presumably will provide the basis for increased capital investment and economic growth and thus expand the base upon which to levy future taxes to finance Social Security.

There are many unresolved issues, however, concerning saving and its role in promoting economic growth. While the goal of the trust fund buildup is to increase retirement savings, there is reason to question whether this will raise aggregate savings for the nation as a whole. In addition, if the non-Social Security part of the budget is in deficit, the trust fund accumulation would have to be, in effect, invested in the budget deficit (regardless of whether Social Security is part of the unified budget). Whether this would be a productive investment is uncertain.

Finally, some economists conclude that a large reserve accumulation is undesirable. They consider it improbable that a Social Security surplus would increase national saving, and if it did materialize, it would have adverse fiscal implications or disrupt financial markets. They would instead return Social Security to pay-as-you-go financing with a substantial contingency reserve. However, this action, or any other that would lessen the reserve accumulation, would leave unresolved the future financing of Social Security.

Chapter 6

Concluding Observations

The crises that have confronted the financial viability of the Social Security trust fund over the past decade and the current discussions over its future financing are of national concern. One reason is the sheer size of Social Security and its impact on the economy; another is the large number of elderly dependent on this program for their financial support.

Past Trust Fund Projections Have Been Inaccurate

Before 1983, there was a pattern of inaccuracy in the financial projections for Social Security. However, error is inherent in the projection process, and the direction and reasons for the projection errors have changed over time. Before 1972, the projections were generally conservative in that they were based on level earnings assumptions. The resultant underestimation of trust fund reserves gave the Congress flexibility to enact several ad hoc increases during the mid-1960's and early 1970's. This process was institutionalized with the 1972 Amendments, which indexed benefits to the rate of inflation and effectively established the pay-as-you-go concept.

After 1972, the projections became tied more directly to assumptions of economic conditions. During the 1970's when the U.S. economy experienced unprecedented economic difficulties, the inability of SSA (and others) to accurately foresee economic events led to overestimation of trust fund reserves. The trust fund reserve ratio experienced a 10-year decline, and the Congress had to restore the system's financial health through amendments to the Social Security Act in 1977 and 1983.

In evaluating the economic assumptions adopted by the Board of Trustees and SSA, there is little basis to question SSA's methods or procedures in making these projections. Other forecasters have encountered the same problems experienced by SSA. In fact, the inability to forecast long-term economic behavior is recognized; the focus, therefore, is usually placed on the accuracy of forecasts no greater than 2 years into the future.

While the 1983 Amendments Solved Short-Run Problems, Long-Term Financing Issues Remain

The measures adopted by the Congress in the 1983 Amendments were intended to increase revenues and decrease disbursements, so that the declining OASDI trust fund balance would stabilize and eventually increase. The data for 1983 and 1984 indicate that these policies have been successful; however, it is clear that a low level of trust fund reserves is anticipated for the next several years.

In reviewing the 1983 Amendments, one notable feature is the projection of a significant level of reserves in the trust fund. This large reserve accumulation is necessary to show an actuarial balance for the system over the 75-year projection period. Showing the trust fund solvent over the intermediate term, and the wide divergence in population growth rates between the baby boom and succeeding generation, makes it necessary to project a buildup through the first quarter of the 21st century with a subsequent drawdown of the trust fund during the second quarter.

The reserve accumulation could (temporarily) help alleviate increases in tax rates on the future working population during the middle of the 21st century. An additional rationale for the accumulation is to increase the rate of saving of the current generation to partially fund their retirement benefits. The increased saving may result in increased capital investment which could place the economy on a higher growth path and thus maintain or increase future living standards and the taxable base upon which the system's financing depends.

Whether the trust fund accumulation occurs and whether its objectives are achieved depends on several factors:

1. Economic conditions. The financial status of Social Security depends on economic conditions, specifically positive growth in real wages. In particular, a sustained period of unanticipated inflation leading to a decline in real earnings would severely affect the accuracy of the projections and the health of the system.

2. Changes in Social Security policy. If the Congress adjusts Social Security taxes and benefits in the presence of increasing trust fund reserves, the objective of accumulating a reserve may not be achieved. In particular, the use of OASDI trust fund reserves to support the anticipated Medicare trust fund shortfall or discretionary payroll tax reduction would negate current projections. The Congress may alter current objectives, however, and maintain more of a pay-as-you-go financing structure.

3. Issues Concerning the Trust Fund Buildup. If it occurs, the projected trust fund accumulation raises several issues. If the funds are invested in productive uses, there is the possibility that an increased capital stock could be available to future generations as well as a higher standard of living through increased economic growth. This is a complex aspect that embraces different perspectives on the economic effects of Social Security and the distributional implications of the system's financing. The investment of excess trust fund reserves will also depend on (1) the surplus or deficit in the non-Social Security portion of the federal budget and (2) the relative importance of public investment and current consumption in federal non-Social Security expenditures.

If the non-Social Security portion of the budget is in balance, the excess reserve accumulation will be available to retire outstanding federal debt held by private investors. This will have the effect of returning funds to private investors where they are likely to be reinvested in private capital.

But, if the non-Social Security portion of the budget is in deficit, at least some portion of excess trust fund reserves will, in effect, be invested in the budget choices underlying the deficit. Whether this "investment" is productive depends in part on the portion of the budget that represents public investment as opposed to current consumption. This is because public investment, like private capital investment, is generally considered to lead to increases in the economy's ability to produce goods and services (i.e., economic growth). Even so, defining activities that constitute public investment is acknowledged to be difficult.

Questions also arise concerning other aspects of the proposed reserve accumulation: possible negative effects of increased payroll taxes in the short run, debt management and monetary policy issues in the long run, and equity issues relating to use of the payroll tax as a means to increase national saving and capital formation. Because of uncertainties as to whether the buildup will occur and, if it does, whether it will achieve its objective without negative effects, some economists have proposed that Social Security should be returned to pay-as-you-go financing.

While the short-run status of Social Security is improving, its long-run financing still faces many uncertainties, even if favorable economic conditions are sustained. Returning the system to pay-as-you-go would leave important financing decisions to future generations. But maintaining the plan implied by current projections will be difficult and

involve complicated decisions regarding the allocation of trust fund reserves. What is certain is that Social Security financing issues will continue to be the focus of ongoing and future congressional concern and monitoring.

HHS Comments and Our Evaluation

In commenting on our report (see app. V), HHS stated that many of the points raised in our report were valid and may prove helpful to individuals seeking recent information concerning the Social Security trust funds. HHS agreed particularly with our discussion of the uncertainties involved in all trust fund projections and the related assumptions that must be made in making these projections. HHS was concerned, however, with certain matters discussed in the report that related to (1) the accuracy of SSA actuarial estimates, (2) the influence of assumptions made on trust fund reserves, (3) the intent of the Social Security Amendments of 1983, and (4) the difference between short- and long-range assumptions.

The first relates to the need for more balance in our report concerning the accuracy of actuarial forecasting. HHS believes that our discussion of pre-1972 actuarial estimates implies that SSA actuaries were at fault because they used conservative wage and benefit assumptions in making forecasts. As HHS pointed out, the policymakers at that time endorsed this approach. In our opinion, the report's text does not attribute the inaccuracy in the forecasts to SSA actuaries or their methods. We agree, however, that this point should be added to the executive summary and have made this change.

The second point concerns an implied causal link between economic assumptions and changes in actual trust fund reserves. HHS stated that the economic assumptions developed by SSA and adopted by the Trustees have little, if any, influence on the actual near-term operations of the economy. In their view, the assumptions were unlikely to have caused poor economic experience and declining trust fund reserves. Such a causal link was not intended; we have made HHS' suggested changes in phrasing in the report.

The third point concerns the implication that by enacting the Social Security Amendments of 1983, the Congress specifically intended to accumulate excess reserves to promote savings and economic growth. HHS believed that the legislative history of the 1983 Amendments shows that the lack of public confidence in Social Security was the primary reason for enacting a financing schedule that would put the program in a long-range actuarial balance position. We agree that the projected

accumulation of excess reserves is the result of the objective of achieving long run actuarial balance. The savings and growth implications are a possible "effect" of a reserve accumulation and can be viewed as an economic rationale for such an accumulation. The implied congressional intent was not intended, and we have revised the language in the report.

The fourth point concerned which economic assumptions to use for the period 1972-76. In our draft report, we used published HHS data which indicated that a constant annual percentage change was used for the economic assumptions for each year from 1972 through 1976. In commenting on our report, HHS indicated that specific year-by-year assumptions for 1972 through 1976 were available in Actuarial Note Number 106. We agree that the specific annual data pointed out by HHS should be used and have incorporated these data in our final report.

Finally, we have revised the text where appropriate for other technical points.

Request Letter

United States Senate

WASHINGTON, D.C. 20510

March 7, 1984

The Honorable Charles A. Bowsher
Comptroller General of the United States
General Accounting Office
441 G Street, Northwest
Washington, D. C. 20548

Dear Mr. Bowsher:

As members of the Senate Budget Committee, we have become concerned with the quality of this Nation's budget planning. We are worried that the future impact of today's budget and appropriation decisions are not sufficiently reflected in agency program planning estimates. We fear that decisions made on the basis of inaccurate estimates may lock us into unobtainable or unaffordable plans that subsequent ad hoc measures may jeopardize the Nation's interests. The current situation is fast approaching a critical state, and measures must be taken at once to analyze and evaluate the magnitude of the current problem.

One of our major concerns is the Defense budget. We have seen several studies that indicate that estimated cost in the procurement accounts of the FY 1984 Five-Year Defense Program (FYDP) is understated. In other words, in order to procure the quantities required to fulfill the Defense program, we would have to spend much more than is currently programmed. If the procurement program costs are in fact understated to the magnitudes we have seen, there are significant implications for our budget and our military posture.

Another major concern is the Federal Old Age and Survivors Insurance Program. We would like to know if disparities similar to those described above relating to the FYDP might be found in this trust fund. That is, do outyear forecasted costs unreasonably match reality as future years become the budget year? We are interested in the economic and demographic assumptions underlying the projections and how they differed from actual experience. We would like the General Accounting Office to provide an independent assessment of agency long-term spending projections versus actual experience for this program. Your report should include a full discussion on the projected actual outlay for the trust fund.

We are aware that the General Accounting Office is in the early planning stages to undertake an independent assessment of Defense long-term spending projections versus actual experience. This work is to include an assessment of the realism of the Five-Year Defense Program estimate, DOD's forecasting procedures and the assumptions underlying these procedures. As this work progresses and prior to issuance of your final report, we look forward to your office keeping us advised of its progress through periodic briefings to the Committee staff.

Sincerely,

Roger W. Jepsen

Chuck Grassley

Mary Landrieu Kassebaum

Appendix II

Annual Maximum Taxable Earnings and Actual Contribution Rates: 1937-86 and Future

Period	Annual maximum taxable earnings	Employer and employee, each				Self-employed person			
		Total	OASI	DI	HI	Total	OASI	DI	HI
1937-49	$3,000	**1 %**	1 %	•	•	•	•	•	•
1950	3,000	**1.5**	1.5	•	•	•	•	•	•
1951-53	3,600	**1.5**	1.5	•	•	**2.25 %**	2.25 %	•	•
1954	3,600	**2**	2	•	•	**3**	3	•	•
1955-56	4,200	**2**	2	•	•	**3**	3	•	•
1957-58	4,200	**2.25**	2	0.25%	•	**3.375**	3	0.375%	•
1959	4,800	**2.25**	2.25	.25	•	**3.75**	3.375	.375	•
1960-61	4,800	**3**	2.75	.25	•	**4.5**	4.125	.375	•
1962	4,800	**3.125**	2.875	.25	•	**4.7**	4.325	.375	•
1963-65	4,800	**3.625**	3.375	.25	•	**5.4**	5.025	.375	•
1966	6,600	**4.2**	3.5	.35	0.35%	**6.15**	5.275	.525	0.35%
1967	6,600	**4.4**	3.55	.35	.5	**6.4**	5.375	.525	.5
1968	7,800	**4.4**	3.325	.475	.6	**6.4**	5.0875	.7125	.6
1969	7,800	**4.8**	3.725	.475	.6	**6.9**	5.5875	.7125	.6
1970	7,800	**4.8**	3.65	.55	.6	**6.9**	5.475	.825	.6
1971	7,800	**5.2**	4.05	.55	.6	**7.5**	6.075	.825	.6
1972	9,000	**5.2**	4.05	.55	.6	**7.5**	6.075	.825	.6
1973	10,800	**5.85**	4.3	.55	1.0	**8.0**	6.205	.795	1.0
1974	13,200	**5.85**	4.375	.575	.9	**7.9**	6.185	.815	.9
1975	14,100[a]	**5.85**	4.375	.575	.9	**7.9**	6.185	.815	.9
1976	15,300[a]	**5.85**	4.375	.575	.9	**7.9**	6.185	.815	.9
1977	16,500[a]	**5.85**	4.375	.575	.9	**7.9**	6.185	.815	.9
1978	17,700[a]	**6.05**	4.275	.775	1.00	**8.10**	6.01	1.09	1.00
1979	22,900	**6.13**	4.33	.75	1.05	**8.10**	6.01	1.04	1.05
1980	25,900	**6.13**	4.52	.56	1.05	**8.10**	6.2725	.7775	1.05
1981[b]	29,700	**6.65**	4.7	.65	1.30	**9.30**	7.025	.975	1.30
1982[b]	32,400[a]	**6.7**	4.575	.825	1.30	**9.35**	6.8125	1.2375	1.30
1983[b]	35,700[a]	**6.7**	4.775	.625	1.30	**9.35**	7.1125	.9375	1.30
1984[b]	37,800[a]	**7.0**	5.2	.50	1.30	**14.0**	10.4	1.0	2.6
1985[b]	39,600[a]	**7.05**	5.2	.50	1.35	**14.1**	10.4	1.0	2.7
1986[b]	42,000[a]	**7.15**	5.2	.50	1.45	**14.3**	10.4	1.0	2.9

Appendix II
Annual Maximum Taxable Earnings and Actual Contribution Rates: 1937-86 and Future

Period	Annual maximum taxable earnings	Employer and employee, each				Self-employed person			
		Total	OASI	DI	HI	Total	OASI	DI	HI
Future schedule:									
1979	[a]	**7.15**	5.2	50	1.45	**14.3**	10.4	1.0	2.9
1988-89	[a]	**7.51**	5.53	53	1.45	**15.02**	11.06	1.06	2.9
1990-99	[a]	**7.65**	5.6	.60	1.45	**15.3**	11.2	1.20	2.9
2000 and thereafter	[a]	**7.65**	5.49	.71	1.45	**15.3**	10.98	1.42	2.9

[a]Automatic increase.

[b]Interfund borrowing permitted among OASI, DI, and HI trust fund until December 31, 1987.

[c]Subject to automatic increase.

Source: Social Security Bulletin, Annual Statistical Supplement, 1983, p. 21, and 1985 Trustees' Report, OASDI, p. 4.

Detailed Analysis of the Dynamic Economic Assumptions for 1972-82

In this analysis, we focus on three key economic assumptions: the CPI-W, average annual wages, and the unemployment rate. These factors are the basis for much of the variation in trust fund projections identified in a recent study by Bartlett and Applebaum, two former Social Security actuaries.[1] Our analysis deals with two time periods. The first is between the 1972 and the 1977 Amendments and the second between the 1977 and 1983 Amendments. In 1972 and in 1977, important legislation was enacted, and these dates serve as benchmarks from which to assess the projections of economic assumptions and trust fund balances.[2]

CPI-W

Before the late 1960's, the rate of price change (inflation) in the United States had been, on average, quite low. The late 1960's saw an increase in the rate of inflation that analysts associated with increases in the rate of money growth during 1963-65, the 1964 tax cut, and the increase in government expenditure for the Vietnam War during 1965-66. From 1960 to 1964, the CPI averaged a 1.3-percent annual increase. Over the period 1965-69, however, the average annual increase in prices rose to 3.6 percent.

Such rates of inflation were high by historical standards, and the problem continued into the early seventies, with the CPI rising almost 6.0 percent in 1970 and 4.3 percent in 1971. Even so, many policymakers and analysts expected that inflation would recede or be brought under control by various economic stabilization policies. Indeed, the wage and price controls imposed in August 1971 were one attempt to do that.[3]

Within this economic environment, the Trustees assumed in 1972 that the CPI would increase at an average annual rate of 2.84 percent per year. In part because of wage and price controls, the measured rate of inflation declined to 3.3 percent in 1972, but as the controls were loosened in 1973, inflation rebounded to 6.2 percent. A host of factors, of

[1]Dwight K. Bartlett III and Joseph A. Applebaum, "Economic Forecasting: Effect of Errors on OASDI Fund Ratios," Social Security Bulletin, Vol. 45, No. 1, Jan. 1982.

[2]Although our review is concerned primarily with the long-range projections, the periods of analysis most relevant to reviewing the economic assumptions and their influence on the trust fund projections concern the short run. For the 1977 Trustees' Report, the economic assumptions used in the short- and long-range projections are identical (see 1977 Trustees' Report, pp. 23 and 46). For the 1972 and earlier reports, the economic assumptions used for the short-range projections differ from those used for long-range projections. In this analysis, for the period 1972-76, we use the short-range economic assumptions.

[3]For a summary of these events, see A Review of U.S. Macroeconomic Developments and Policies, 1946-78, (GAO/PAD-80-2, Sept. 1980).

which the OPEC oil embargo was among the more notable, resulted in an 11.0-percent increase in the price level in 1974. Coincident with the 1974-75 recession, inflation receded to 9.1 percent in 1975 and to under 6.0 percent in 1976.

As table III.1 shows, the Trustees' assumptions for the CPI do not compare favorably with actual values. The average differential from actual over the period 1972-76 was 4.22 percent.

The projections that reflected changes from the 1977 Amendments were based on assumptions also shown in table III.1. An increase in the CPI of 4.0 percent is assumed over the long run. Again, it was assumed that inflation would decelerate. Instead, the rate of price change exhibited a pattern similar to the first half of the 1970's, only more severe. As table III.1 shows, the difference between the actual and assumed CPI for 1977 was only one-half of a percentage point. By 1978, however, the differential showed the CPI underestimated by 2.2 percentage points. Most importantly, however, during the period 1979-81, the error in the CPI projection averaged 7 percentage points per year.

Nominal Wages

The change in nominal wages as measured by the change in average annual wages is also shown in table III.1, which compares the Trustees' assumptions to actual values. In 1972, the Trustees assumed average annual growth of 5.7 percent from 1972 to 1976. This underestimated actual annual growth in nominal earnings which rose, on average, 7.3 percent between 1972 and 1976.

The estimates for nominal wage growth made in 1977, while higher, still underestimated the actual growth in wages. The extent to which the Trustees underestimated nominal wage growth during the 1978-82 period, an average of 1.0 percentage point per year, was less than that during the 1972-76 period when the underestimate averaged 1.6 percentage points per year.

Overall, the change in nominal wages was underestimated by less than was the rate of price change. The change in nominal wages is affected by the actual or expected rate of inflation. However, inflation is only imperfectly incorporated in wages and often with a substantial time lag, because wage levels in many industries are determined by contract and can change only periodically. As a result, changes in nominal wages tend to vary less widely than changes in the price level.

Real Wages

The interaction between changes in wages and changes in prices, the real wage differential, is the major factor in determining changes in the trust fund over time. Underestimation of the rate of price change leads to underestimation of benefit outlays. However, if the rate of change in nominal wages is also underestimated, the system receives more revenues than expected, and this may offset the underestimation of benefit outlays. Conversely, underestimation of price change and overestimation of wage change can compound the errors in estimating the trust fund, since the program will have higher benefit payments and lower revenues than projected.

The assumptions for wage and price change during this period implied a positive real wage differential. As shown in table III.1, the Trustees assumed that nominal wages would grow faster than prices by 2.84 percentage points on average annually over the period 1972-76 and by 2.4 percentage points on average during 1977-82.

During much of the 1970's and early 1980's, however, the U.S. economy experienced an unprecedented period of inflation, slow growth in real output and real wages. In fact, real wages fell in the period 1974-75 and 1979-82. These conditions rendered SSA's projections inaccurate.

Unemployment Rate

The unemployment rate is generally held to be another important factor affecting trust fund behavior. As shown in table III.1, in 1972, the Board of Trustees' assumed an average annual unemployment rate of 4.5 percent as a basis for determining the expected number of covered employees who would pay into the trust fund. Between 1972 and 1977, however, actual rates of unemployment were consistently higher. They averaged 6.5 percent, about 2.0 percentage points higher than expected.

The assumptions for the unemployment rate in the 1977 Trustees' Report were close to or higher than the actual rate of unemployment through 1980 but not thereafter. In 1977, it was projected that the unemployment rate would remain constant at 5 percent from 1981 on. During 1981-82, the unemployment rate averaged 3.7 percentage points higher than that assumed by the Trustees.

Table III.1 Comparison of Assumptions to Actual Data

In percentages for calendar year	Actual[a]	Year made	Trustees' Report assumptions[b]	Differentials from actual
CPI-W[c]				
1972	3.3	1972	3.1	0.2
1973	6.2		2.9	3.3
1974	11.0		2.8	8.2
1975	9.1		2.7	6.4
1976	5.7		2.7	3.0
1977	6.5	1977	6.0	0.5
1978	7.6		5.4	2.2
1979	11.4		5.3	6.1
1980	13.5		4.7	8.8
1981	10.3		4.1	6.2
1982	6.0		4.0	2.0
Nominal Wages[c,d]				
1972	7.1	1972	6.0	1.1
1973	7.1		5.8	1.3
1974	7.1		6.0	1.1
1975	6.7		5.5	1.2
1976	8.4		5.1	3.3
1977	6.9	1977	8.4	−1.5
1978	9.6		8.1	1.5
1979	8.9		7.8	1.1
1980	8.1		7.1	1.0
1981	8.3		6.4	1.9
1982	5.6		6.0	0.4
Real Wage Differential[e]				
1972	3.8	1972	2.9	0.9
1973	0.9		2.9	−2.0
1974	−3.9		3.2	−7.1
1975	−2.5		2.8	−5.3
1976	2.6		2.4	+0.2
1977	0.4	1977	2.4	−2.0
1978	2.0		2.7	−0.7
1979	−2.5		2.5	−5.0
1980	−5.4		2.4	−7.8
1981	−2.0		2.3	−4.3
1982	−0.4		2.0	−2.4

In percentages for calendar year	Actual[a]	Year made	Trustees' Report assumptions[b]	Differentials from actual
Unemployment Rate				
1972	5.6	1972	5.5	0.1
1973	4.9		5.0	−0.1
1974	5.6		4.2	−2.7
1975	8.5		4.0	4.5
1976	7.7		4.0	3.7
1977	7.1	1977	7.1	0.0
1978	6.1		6.3	−0.2
1979	5.8		5.7	0.1
1980	7.1		5.2	1.9
1981	7.5		5.0	2.6
1982	9.7		5.0	4.7

[a]1985 Trustees' Report, OASDI, p. 27

[b]Trustees' assumptions for 1972-1976 are those contained in Joseph A. Applebaum, "Comparison of Actual Economic Experience and Assumptions in Trustees' Reports, 1971-80," SSA, Actuarial Note No. 106; assumptions for 1977-82 are those in the 1977 Trustees' Report, OASDI, p. 45 (intermediate assumptions).

[c]Annual rate of change.

[d]Average annual earnings in covered employment.

OASI Trust Fund Projections and Status: 1973-82

As the above analysis demonstrates, the unstable conditions of the 1970's and the inability of the Trustees and SSA (and other forecasters) to foresee such trends led to inaccuracy in the assumptions used in projections of future trust fund balances. In table III.2, we compare the estimates of the trust fund balances contained in the 1973 and 1978 Trustees' reports to actual balances.

Table III.2: OASI Trust Fund Balance Projections Compared With Actual Experience

Calendar year	OASI Trust Fund Projections in millions		
	Actual[a]	In 1973[b]	In 1978[c]
1973	$36,487	$36,598	
1974	37,777	40,365	
1975	36,387	43,395	
1976	35,386	47,044	
1977	32,491	49,756	
1978	27,520		$26,826
1979	24,660		24,321
1980	22,823		23,133
1981	21,490		29,105
1982	22,080		36,221

[a]1983 Trustees Reports (for 1975-1982 p. 60; 1978 Trustees' Reports (for 1973-1974) p. 34

[b]1973 Trustees Report p. 19

[c]1978 Trustees Report p. 34

As can be expected, during the years nearest to the year of a projection, projected trust fund balances are nearer to actual, but in succeeding years deviate by increasing margins. During the first 3 years after the 1977 Amendments, trust fund balances were either higher than projected or as in 1980 nearly equal. In 1981-82, however, projected and actual OASI fund balances differed by $6.6 billion and $14.1 billion, respectively. The deviation would have been even larger in 1980 and 1981 were it not for the reallocation of portions of the DI tax rate to the OASI trust fund for calendar years 1980-81.

The Effect of Higher Real Earnings Growth on the After-Payroll Tax Earnings of Representative Wage Earners

This appendix illustrates how a relatively small increase in the rate of productivity growth can offset the effect that the higher future Social Security tax would otherwise have on the after-tax earnings of future workers. This analysis is not intended to endorse the trust fund accumulation as necessarily constituting the best way of accommodating the projected demographic change nor is it intended to predict the actual effect of such an accumulation. However, this analysis is intended to show the possible positive effect that an accumulation can have, provided the trust fund accumulation is actually translated into enhanced capital formation.

The first step is to illustrate the effect of the higher tax rates on the projected take-home pay of future workers using the assumptions underlying the Trustees' Alternative II(B) projections. Column 2 of table IV.1 shows the assumptions for annual rates of increase in real earnings under the II(B) set. Column 3 shows how the real earnings (in 1985 prices) of a representative worker increase each year under these assumptions. (The representative worker is assumed to earn $16,000 in 1985, which is about the average for all workers under Social Security in 1985.) Note that by 2020, this worker can expect gross earnings of $26,887 in 1985 prices. Column 4 contains the currently scheduled Social Security employee tax rates, and column 5 shows earnings for each year net of the Social Security tax. The representative worker in 2020, can expect to pay $1,567 in payroll taxes and enjoy after-tax earnings of $25,321. This calculation is repeated in columns 6 and 7 to illustrate what would happen if no demographic changes occur and the 5.7 percent tax rate were sufficient to finance Social Security benefits through the 21st century. If it were possible to finance the system with the lower tax rate, the representative 2020 worker would enjoy after-tax earnings of $25,455. As shown in column 8, this amount is some $134 more than this worker will have under the actual 6.2-percent tax rate.

Table IV.1 Effect of Alternative II-B Earnings Growth on a Representative Wage Earner

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	Real earnings growth alternative II-B (percent)	Gross earnings	Currently legislated tax schedule (percent)	Earnings after payroll tax	Current OASDI tax rate (percent)	Net earnings after payroll tax at current rate	Difference: column 5 minus column 7
1985	0.0	16,000	5.7	15,088	5.7	15,088	0.00
1986	0.8	16,128	5.7	15,209	5.7	15,209	0.00
1987	1.1	16,305	5.7	15,376	5.7	15,376	0.00
1988	1.1	16,485	6.1	15,479	5.7	15,545	−65.94
1989	1.6	16,749	6.1	15,727	5.7	15,794	−66.99
1990	1.0	16,916	6.2	15,867	5.7	15,952	−84.58
1991	1.4	17,153	6.2	16,089	5.7	16,175	−85.76
1992	1.6	17,427	6.2	16,347	5.7	16,434	−87.14
1993	1.6	17,706	6.2	16,608	5.7	16,697	−88.53
1994	1.6	17,989	6.2	16,874	5.7	16,964	−89.95
1995	1.6	18,277	6.2	17,144	5.7	17,235	−91.39
1996	1.6	18,570	6.2	17,418	5.7	17,511	−92.85
1997	1.6	18,867	6.2	17,697	5.7	17,791	−94.33
1998	1.6	19,169	6.2	17,980	5.7	18,076	−95.84
1999	1.6	19,475	6.2	18,268	5.7	18,365	−97.38
2000	1.6	19,787	6.2	18,560	5.7	18,659	−98.94
2001	1.6	20,104	6.2	18,857	5.7	18,958	−100.52
2002	1.6	20,425	6.2	19,159	5.7	19,261	−102.13
2003	1.6	20,752	6.2	19,465	5.7	19,569	−103.76
2004	1.6	21,084	6.2	19,777	5.7	19,882	−105.42
2005	1.6	21,421	6.2	20,093	5.7	20,200	−107.11
2006	1.6	21,764	6.2	20,415	5.7	20,523	−108.82
2007	1.6	22,112	6.2	20,741	5.7	20,851	−110.56
2008	1.6	22,466	6.2	21,073	5.7	21,185	−112.33
2009	1.6	22,826	6.2	21,410	5.7	21,524	−114.13
2010	1.5	23,168	6.2	21,731	5.7	21,847	−115.84
2011	1.5	23,516	6.2	22,058	5.7	22,175	−117.58
2012	1.5	23,868	6.2	22,388	5.7	22,508	−119.34
2013	1.5	24,226	6.2	22,724	5.7	22,845	−121.13
2014	1.5	24,590	6.2	23,065	5.7	23,188	−122.95
2015	1.5	24,959	6.2	23,411	5.7	23,536	−124.79
2016	1.5	25,333	6.2	23,762	5.7	23,889	−126.66
2017	1.5	25,713	6.2	24,119	5.7	24,247	−128.56
2018	1.5	26,098	6.2	24,480	5.7	24,611	−130.49

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	Real earnings growth alternative II-B (percent)	Gross earnings	Currently legislated tax schedule (percent)	Earnings after payroll tax	Current OASDI tax rate (percent)	Net earnings after payroll tax at current rate	Difference: column 5 minus column 7
2019	1.5	26,490	6.2	24,848	5.7	24,980	−132.45
2020	1.5	26,887	6.2	25,220	5.7	25,355	−134.44
2021	1.5	27,291	6.2	25,599	5.7	25,735	−136.45
2022	1.5	27,700	6.2	25,983	5.7	26,121	−138.50
2023	1.5	28,115	6.2	26,372	5.7	26,513	−140.58
2024	1.5	28,537	6.2	26,768	5.7	26,911	−142.69
2025	1.5	28,965	6.2	27,170	5.7	27,314	−144.83
2026	1.5	29,400	6.2	27,577	5.7	27,724	−147.00
2027	1.5	29,841	6.2	27,991	5.7	28,140	−149.20
2028	1.5	30,288	6.2	28,410	5.7	28,562	−151.44
2029	1.5	30,743	6.2	28,837	5.7	28,990	−153.71
2030	1.5	31,204	6.2	29,269	5.7	29,425	−156.02
2035	1.5	33,616	6.2	31,531	5.7	31,699	−168.08
2040	1.5	36,213	6.2	33,968	5.7	34,149	−181.08
2045	1.5	39,012	6.2	36,593	5.7	36,788	−195.07
2050	1.5	42,027	6.2	39,422	5.7	39,632	−210.14
2055	1.5	45,275	6.2	42,468	5.7	42,695	−226.38
2060	1.5	48,774	6.2	45,750	5.7	45,994	−243.87

Before about 2015, a tax rate of about 5.7 percent would be more than enough to finance current benefits. Thus, for the years between now and about 2015, the negative numbers in column 8 can be viewed as the additional reduction in after-tax earnings of representative workers that is attributable to the policy of accumulating a large Social Security trust fund.[1] But if this policy leads to an increase in future productivity growth rates, this increase can lead in turn to higher gross earnings for future workers. The effect of making one of any number of assumptions about how much productivity will increase and when the increase will occur is illustrated in table IV.2.

[1]The figures understate the difference to the extent that a 5.7-percent rate is more than current-cost financing requires.

Table IV.2: Effect of Higher Real Earnings Growth

(1)	(2)	(3)	(4)	(5)
Year	Higher real earnings growth (percent)	Gross earnings based on column 2	Net earnings after payroll tax based on current schedule (percent)	Difference: column 4 minus column 7, table 1
1985	0.0	16,000	15,088	**0.00**
1986	0.8	16,128	15,209	**0.00**
1987	1.1	16,305	15,376	**0.00**
1988	1.1	16,485	15,479	**−65.94**
1989	1.6	16,749	15,727	**−66.99**
1990	1.0	16,916	15,867	**−84.58**
1991	1.4	17,153	16,089	**−85.76**
1992	1.6	17,427	16,347	**−87.14**
1993	1.6	17,706	16,608	**−88.53**
1994	1.6	17,989	16,874	**−89.95**
1995	1.6	18,277	17,144	**−91.39**
1996	1.6	18,570	17,418	**−92.85**
1997	1.6	18,867	17,697	**−94.33**
1998	1.6	19,169	17,980	**−95.84**
1999	1.6	19,475	18,268	**−97.38**
2000	1.6	19,737	18,560	**−98.94**
2001	1.6	20,104	18,857	**−100.52**
2002	1.6	20,425	19,159	**−102 13**
2003	1.6	20,752	19,465	**−103.76**
2004	1.6	21,084	19,777	**−105.42**
2005	1.7	21,442	20,113	**−87.33**
2006	1.7	21,807	20,455	**−68.61**
2007	1.7	22,178	20,803	**−49.26**
2008	1.7	22,555	21,156	**−29.24**
2009	1.7	22,938	21,516	**−8.55**
2010	1.6	23,305	21,860	**12.83**
2011	1.6	23,678	22,210	**34.87**
2012	1.6	24,057	22,565	**57.62**
2013	1.6	24,442	22,926	**81.05**
2014	1.6	24,833	23,293	**105.19**
2015	1.6	25,230	23,666	**130.06**
2016	1.6	25,634	24,045	**155.68**
2017	1.6	26,044	24,429	**182.06**
2018	1.6	26,461	24,820	**209.22**

(1)	(2)	(3)	(4)	(5)
Year	Higher real earnings growth (percent)	Gross earnings based on column 2	Net earnings after payroll tax based on current schedule (percent)	Difference: column 4 minus column 7, table 1
2019	1.6	26,884	25,217	**237.18**
2020	1.6	27,314	25,621	**265.95**
2021	1.6	27,751	26,031	**295.56**
2022	1.6	28,195	26,447	**326.03**
2023	1.6	28,646	26,870	**357.37**
2024	1.6	29,105	27,300	**389.60**
2025	1.6	29,571	27,737	**422.74**
2026	1.6	30,044	28,181	**456.82**
2027	1.6	30,524	28,632	**491.85**
2028	1.6	31,013	29,090	**527.86**
2029	1.6	31,509	29,555	**564.87**
2030	1.6	32,013	30,028	**602.90**
2035	1.5	34,487	32,349	**649.49**
2040	1.5	37,152	34,849	**699.69**
2045	1.5	40,024	37,542	**753.76**
2050	1.5	43,117	40,444	**812.02**
2055	1.5	46,449	43,569	**874.77**
2060	1.5	50,039	46,937	**942.38**

The data in table IV.2 compare the situation portrayed in table IV.1 with the situation that would result from an increase of just 0.1 percentage point per year in the productivity growth rate beginning in the year 2005, and continuing for a period of 25 years until 2030. The second column of table IV.2 shows the higher assumed growth rates (for example, 1.6 percent per year in the years from 2010 to 2030, instead of 1.5 percent per year under the alternative II(B) assumption set). The numbers in column 3 show gross real earnings levels for the same representative workers that were analyzed in table IV.1 under these higher productivity assumptions, and those in column 4 show the after-tax earnings associated with the schedule of tax rates currently legislated. Finally, column 5 compares the after-tax earnings of these workers with the after-tax earnings they would have enjoyed had they been able to pay payroll taxes at a rate of only 5.7 percent but also in an economy where productivity grew only as fast as assumed under alternative II(B). Note that by the year 2010, just 5 years after the assumed increase in the rate of growth of productivity, the representative worker enjoys higher after-tax earnings than he or she would have enjoyed

under the alternative II(B) assumptions even in a situation where the tax rate could be held to 5.7 percent. And the difference in after-tax earnings becomes larger in later years.

To repeat, these calculations are intended only to illustrate how Social Security financing policies used as a means to increase capital formation have the potential of offsetting the impact of the projected demographic changes on future workers. They are not intended as specific predictions about the size or timing of any productivity increases resulting from these policies. They do, however, illustrate the effect that these policies could have if the currently projected trust fund accumulation actually translates into enhanced capital formation. And they show that it takes only a relatively small increase in the rate of growth of productivity to offset the impact of the demographic shift on future workers' after-tax earnings.

Advance Comments From the Department of Health and Human Services

DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of Inspector General

Washington, D.C. 20201

DEC 23 1985

Mr. Richard L. Fogel
Director, Human Resources
Division
United States General
Accounting Office
Washington, D.C. 20548

Dear Mr. Fogel:

The Secretary asked that I respond to your request for the Department's comments on your draft report, "Uncertainties Exist Concerning Social Security's Long-Term Financing." The enclosed comments represent the tentative position of the Department and are subject to reevaluation when the final version of this report is received.

We appreciate the opportunity to comment on this draft report before its publication.

Sincerely yours,

Richard P. Kusserow
Inspector General

Enclosure

COMMENTS OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES ON THE GENERAL ACCOUNTING OFFICE DRAFT REPORT, "UNCERTAINTIES EXIST CONCERNING SOCIAL SECURITY'S LONG-TERM FINANCING" (HRD-86-22, DATED OCTOBER 28, 1985)

General

Many points raised in the draft report are valid, if not new, and may prove helpful to individuals seeking information on recent social security trust fund and legislative experience. We particularly agree with the idea that all projections and future assumptions must be used with care and a full understanding of the uncertainties involved. As the report notes, inaccuracies are inevitable in any projection of future experience.

We are concerned, however, with four misconceptions in the report that relate to the accuracy of Social Security Administration (SSA) actuarial estimates, the influence of assumptions on trust fund reserves, the intent of the Social Security Amendments of 1983 and the difference between short-range and long-range assumptions.

The comments below present our views on these matters and identify other technical inaccuracies we noted in the report.

The Accuracy of SSA Actuarial Estimates

One major theme repeated throughout the report is that Social Security actuarial cost estimates have been consistently "inaccurate" over the years due to errors in forecasting by SSA actuaries. For example, the report notes in Chapter 3 that pre-1972 estimates were inaccurate primarily because they were based on static wage and benefit assumptions. The resulting implication is that SSA actuaries were at fault for using this conservative methodology. The report should note that policymakers in that period recognized and implicitly endorsed the intentional bias that was built into the cost-estimating methodology through the use of static assumptions; many believed that building such a conservative margin of error into cost estimates for the Nation's primary program for replacing lost earnings was prudent. Moreover, the 1972 amendments represented a conscious decision on the part of the Congress to embody dynamic assumptions as a basis for future cost estimating and indicated clearly that the Congress reserved to itself the power to alter fundamental financing methodology.

We believe the report could and should achieve more balance as it relates to SSA actuarial forecasting. While the report acknowledges the then-unprecedented performance of the economy in the 1970's and early 1980's, and the impossibility of forecasting accurately during this period, these facts are not presented at all in the Executive Summary and are presented only occasionally

in the body of the report. Moreover, the report should observe that no one accurately predicted the abrupt end of the baby boom period. Further, we would also note that the "baby boomers" will begin to retire around 2010 rather than 2020 as the report repeatedly asserts.

Inaccurate Assumptions Result in Declining Trust Fund Reserves

Now on p. 33.

The draft report (page 32, paragraph 2, line 6) states:

> "Real earnings growth was generally overestimated during 1973-75 and this resulted in a decline in trust fund reserves."

Now on pp. 33 and 35.

(The same thought is repeated on pages 33, 36, and 45.)

Although real earnings growth was overestimated and trust fund reserves did decline during this period, there is no direct causal relationship between these occurrences. In fact, overestimated real earnings growth resulted in overestimated trust fund reserves, and poor economic experience resulted in a decline in trust fund reserves. Economic assumptions developed by SSA and adopted by the Trustees have little, if any, influence on the actual near term operation of the economy and thus are unlikely to have caused poor economic experience and declining trust fund reserves.

Now on p. 33.

We suggest that the sentence on page 32 be redrafted along the lines of:

> "Real earnings growth was generally overestimated during 1973-75 and this resulted in projected trust fund reserves that were higher than those which actually accumulated."

The Congress, by enacting the 1983 Amendments, specifically intended to accumulate excess reserves to promote savings and economic growth.

We take issue with the report's fundamental interpretation that it was congressional intent in enacting the present Social Security tax-rate schedule in 1983 "to increase aggregate savings to promote economic growth." Many of the report's analyses are based on this interpretation. However, the interpretation is simply not true. The legislative history of the 1983 amendments clearly shows that Congress was so concerned with public confidence in Social Security that they considered it essential to enact a financing schedule that would put the program in a position of a long-range actuarial balance.

Contrary to statements in the report that the "goal" of the "proposed reserve accumulation" is to increase savings, capital formation, and economic savings, the projected trust fund accumulation was not "proposed." It was the outgrowth of the objective to eliminate the long-range actuarial deficit of 1.80 percent of taxable payroll that was estimated prior to enactment of the 1983 amendments. This objective should have

Now on p. 44.

been included on page 48 of the report in the discussion of the basis for proposals made by the National Commission on Social Security Reform. Although some attempts were made to match legislative changes to the projected pattern of future costs, especially in the timing of the retirement age provision, the primary long-range objective was to eliminate the 75-year deficit. Increased future economic growth was not held out as the goal of eliminating this long-range actuarial deficit, nor was any particular enhancement of economic growth assumed to result. The only long-range ultimate economic assumption that was changed between the 1982 and the 1983 Annual Trustees Reports (the reports just before and after the 1983 amendments) was the assumed unemployment rate which was raised from 5.0 percent to 5.5 percent. Inappropriate references to the projected trust fund buildup are present on pages iii, iv, 48, 55, 61, 75, and 83 of the draft report.

Now on pp. 3, 4, 44, 50, 54, 65, and 71.

Confusion Over the Difference Between Short-Range and Long-Range Assumptions

The draft report presents a somewhat confused picture of short-range versus long-range assumptions and projections. Although the title of the report implies that long-range forecasts will be evaluated, the bulk of the report, especially appendix II, concentrates on assumptions and projections for only the first 5 projection years, the period we generally refer to as short-range in the context of the Trustees Reports. Assumptions for short-range projections have varied through the 5-year projection period all the way back to the Trustees Reports of the early 1940's. The report is in error when suggesting otherwise on page 44. Specific year-by-year assumptions (unemployment, Consumer Price Index, and average covered wages) used for the short-range period in the 1972 Trustees Reports are available in Actuarial Note Number 106.

Now in app. III.

Now on p. 42.

We are recommending that pages 36, 43, 44 and appendix II of the report be rewritten to reflect the data contained in the above referenced actuarial note and to dispel the misconception that, up to the 1970's, only single assumptions were used during short-range projection intervals.

Now on pp. 35, 41, 42, and in app. III.

Other Technical Matters

Now on p. 3.

Page iii, paragraph 2

The page reference at the end of this paragraph should read "pages 36-46" rather than "pages 26-46" as shown in the report.

Now on p. 21.

Page 17, paragraph 2, line 6

"Average expenditures" should be interchanged with "total tax income" so that a positive value will imply actuarial surplus.

Now on p. 24.

Page 20, paragraph 1, line 4

It should be noted that population is projected by single year age intervals rather than the 5-year span cited in the report.

Now on p. 28.

Page 26, paragraph 2

Now on pp. 24-25.
Now on p 24.

There is some ambiguity concerning what projections are being measured for accuracy. The discussion on pages 21-22 leads one to believe the list on page 21 contains the series whose accuracy will be measured. However, the discussion in this paragraph, in which "accuracy of projections" is used, suggests the trust fund ratio is being examined. Trust fund ratios are not assumptions. It is also incorrect to say that the real wage differential determines the accuracy of other economic and demographic assumptions, as is implied in the paragraph.

Now on p. 39.

Page 37, paragraph 2, lines 2 and 3

"High mortality" and "low mortality" should be interchanged.

Now on p. 41.

Page 42, paragraph 3, line 6

"Assumptions" should be changed to "experience" to clarify that actual experience, not assumptions, has effect on the financial status of the trust funds.

Now on p. 47.

Page 51

It should be noted that values shown in the 1985 Trustees Report were for average earnings in covered employment, not average wages. Earnings include net earnings in self-employment as well as wages.

Now on p. 53.

Page 57, paragraph 3

The report suggests that the tax rate could be cut by 2 percent for 1985-2009 and the system would "still be able to maintain actuarial balance." This should be clarified to indicate that actuarial balance could be maintained only for the 25-year period and that close actuarial balance would be lost over the 75-year period. Furthermore, it should be noted that if the combined payroll tax rate were cut by 2 percent beginning 1985, the Old Age, Survivors and Disability Insurance (OASDI) Trust Funds would become insolvent about 1 year later, based on alternative II-B assumptions in the 1985 Trustees Report. Similar references to reduced tax rates (or increased benefit levels) during the

Now on p. 63.

Now on p. 71.

years of projected trust fund accumulation are present on page 71. These references also fail to note that the 75-year close actuarial balance would be lost in these cases. Only on page 82 is the necessary, offsetting increase in tax rates after the first 25 projection years noted. Economists Munnell and Blais are quoted as characterizing a roughly 2 percent increase in the combined OASDI tax rate as "fairly modest," without editorial comment. Earlier the draft report discussions of a temporary reduction of 2 percent in the combined tax rate is made to appear quite significant when it is suggested as a means of totally eliminating the excess trust fund accumulation.

Now in app. IV.

Appendix III

The report should state that higher real earnings result in not only higher OASDI income, but also partially offsetting increases in benefit levels some years later.