

International Workshop on  
**The Balance Sheet of Social Security Pensions**

**Measuring the Financial Status of the  
U.S. Social Security System**

by

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Determining the financial status of national Social Security systems is a complex and difficult task. Key concepts include how to measure assets and liabilities, the length of the evaluation period, and whether to view the system as an on-going program or to consider its termination value. Measuring the current and future financial status of Social Security is necessary for policymakers and the public to understand the need for modifying and reforming national retirement policies. There are a number of possible methods of illustrating the current and projected future actuarial balance of Social Security. The methods and assumptions employed by the Trustees of the U.S. Social Security system are described in this analysis. The various accounting methods used to show the current financial status of Social Security are examined below. Individually, any one of these methods provides an incomplete assessment of the financial status of Social Security. Together they show the projected shortfall in revenues for an on-going system, the required funds to pay all accrued benefits if the system is terminated, and the transition costs of a policy reforms.

**PROJECTING THE FINANCIAL STATUS OF SOCIAL SECURITY**

Optimal retirement policies should be based on unbiased projections of the financial obligations of Social Security based on future population change, economic growth, and appropriate accounting practices. It is extremely important for the public and its representatives to know:

1. Whether the Social Security system is actuarially solvent using current benefit formulas and tax rates?
2. What does solvency mean for a national retirement program?
3. What level of taxation is needed to pay promised benefits if the basic structure of Social Security is maintained?
4. How much would benefits have to be reduced so current tax rates can provide sufficient revenues?
5. Are the trust funds increasing or decreasing in value and when will these funds be completely depleted?
6. What is the magnitude of implied liabilities accrued by workers to date and how much additional money would be needed to pay off all promised benefits if the program were terminated today?

Each year the Trustees of the Old Age Survivors and Disability Insurance program (OASDI or Social Security) are required by law to report on the financial status of these programs.<sup>1</sup> The annual reports are released each year in the spring. They present long-range projections of the national population, the labor force, the

number of beneficiaries, and the rate of economic growth. These projections give rise to annual estimates of future revenues to OASDI and the total expenditures for benefits. Revenues and expenditures are estimated based on current law that defines the payroll tax and the benefit structure.

Projections of annual revenues and expenditures are made by the Office of the Chief Actuary of OASDI. The estimates are generated using demographic and economic models. The estimates are based on a series of key assumptions. These assumptions are reviewed and modified each year. In the United States, there is widespread agreement that the annual projections are professionally done and provide high quality estimates of the future of social security financing. However, there is debate on assumptions adopted in the projection models and whether they should be changed from one year to the next. Recently, assumptions on the trend in life expectancy, annual immigration, and the rate of economic growth have received the most attention. In some cases, modest changes in assumptions can cause significant changes in the estimated financial status of the OASDI.

Historically, the Trustees have presented three estimates of a 75-year time horizon to highlight the range of possible outcomes. These estimates are referred to as Intermediate or best guess estimates, High Cost, and Low Cost estimates. The Intermediate estimates are also made for an infinite time horizon for the Intermediate assumptions. In addition, there has been some use of a stochastic model to project probability estimates of various outcomes.<sup>2</sup>

### **MEASURING THE FINANCIAL STATUS OF OASDI**

The projection model employed by the Office of the Chief Actuary estimates the future revenues and expenditures associated with the current Social Security system. Annual estimates are shown for each of the 75 years included in the base forecasting period. The Trustees Reports also provide key information on the annual operations of the system including the size of the Trust Fund and its year-to-year change. How should these data be used to assess the current financial status of Social Security? In general, the Trustees assume that Social Security will continue in its present form and they report the shortfall in revenues needed to pay promised benefits based on existing law. These reports are non political and do not recommend policy changes. The mandate of the Trustees is to provide a clear picture of the financial status of Social Security. These estimates serve as the baseline for all reform debates in the United States.<sup>3</sup>

This shortfall is summarized using several methods. Traditionally, the Trustees have focused on determining the 75-year actuarial balance of the system. The actuarial balance is the difference in the present discounted value of annual projected income and annual projected costs based on current law expressed as a percentage of taxable payroll summarized over the 75-year projection period. In addition, the Trustees have traditionally reported the year that expenditures will exceed income and the year the trust funds will be exhausted. Each of these three measures is widely reported in the national press.

In their 2003 report (TR 2003), the Trustees for the first time began reporting the financial status of the system as measured by the present value of the difference between projected income and projected expenditures based on current law. TR 2003 incorporates numerous changes in the evaluation and measurement of the financial status of Social Security. The 2003 Trustees Report is a significant improvement over previous reports.

Prior to 2003, the annual Trustees Reports focused almost exclusively on three concepts of the financial status of Social Security: the actuarial balance, the year that the Trust Funds will be depleted, and the change in the size of the Trust Funds. The actuarial balance concept is a useful indicator of the financial status of an ongoing Social Security system. It indicates the amount payroll taxes would have to be raised today (and continue at this higher rate over the 75 years) to generate sufficient revenues to pay all promised benefits. The pre-2003 Trustees Reports gave this measure by far the most attention. The 2002 Trustees Report indicated that the actuarial balance over the 75-year projection period was -1.87 percent of payroll. The 2003 Report showed an actuarial balance of -1.92 percent of payroll indicating that the financial status of the system had deteriorated slightly between the two years while the TR 2004 shows an actuarial balance of -1.89 (see Table 1).

The year that the Trust Funds are expected to have zero assets is another important measure of the financial status of OASDI. Legislation requires that Social Security benefits be paid from revenues generated by the payroll tax or from monies from the Trust Funds. If payroll tax revenues are insufficient to pay promised

benefits and the balance in the Trust Funds is zero, then full benefits cannot be paid. The imminent exhaustion of the Trust Funds was a looming crisis in the early 1980s. The immediate prospect of insufficient funds stimulated Congress to enact substantial changes in OASDI proposed by the Greenspan Commission in 1983.<sup>4</sup> Thus, the date of exhaustion of all assets in the Trust Funds is significant, it has important policy implications, and it may affect reform decisions. TR 2003 and TR 2004 estimated that the OASDI Trust Funds will be exhausted in 2042 (see Figure 1). The latest report indicates that in 2042 revenues will be sufficient to pay 73 percent of promised benefits (see Figure 2).

The annual change in the value of the Trust Funds also provides important information that indicates whether the Funds are increasing or decreasing in assets. Such changes affect measures of the deficit of the unified budget and may influence national economic policies. In 2002, the Trust Funds added \$165.4 billion in assets (see Table 2). This increase in value, if viewed by isolation, gives the impression of a system that is financially secure. This measure of the annual operations of the Trust Funds is very misleading. For example, in recent years, annual revenues have exceeded annual expenditures and the Trust Funds have grown. Despite this apparent improvement in the financial status of the program, unfunded accrued liabilities have increased.

While each of these items is important to understanding the current and future financial status of Social Security, alone they present an incomplete and somewhat misleading picture. The actuarial balance concept focuses one's attention almost exclusively on the need for tax increases. While this is one possible response to the current underfunding of OASDI, policy makers might decide to reduce future benefits instead of raising taxes. The 75-year actuarial balance concept also does not provide any information on the amount of money needed if the system were to be terminated and all accrued liabilities paid or the funds needed to transfer from general revenues to cover the shortfall in revenues. Alone, the 75-year actuarial balance does not provide the necessary information to assess the merits of reform proposals that require upfront transitional costs and contain positive revenue effects outside the 75-year period.

The U.S. Social Security system has been primarily a pay-as-you-go retirement program with a relatively small Trust Fund being accumulated. Thus, at any specific time, there are insufficient assets in the Trust Fund to pay all the benefits that individuals have been accrued to date based on the current benefit formula and past coverage in the system. Measuring this debt overhang is another method of assessing the financial status of the OASDI program. Such a measure indicates amount of money needed today if Social Security was terminated today and all scheduled benefits were paid. Thus, this measure would indicate the transition cost of shifting from the current system to some other program, perhaps one based on individual accounts. For the first time in their 2003 Report, the Trustees provided an estimate of this accumulated debt of the current Social Security system. The unfunded obligation for coverage to date was \$10.5 trillion in 2003 and \$11.2 trillion in 2004. The unfunded liability is an important and useful indicator of the financial status of Social Security. Annual changes in this measure are also a significant indicator on whether the financial status of the system has improved or deteriorated.<sup>5</sup>

### **BEST UNBIASED ESTIMATES OF FINANCIAL STATUS**

The primary objective of the annual Trustees Report should be to present the best, unbiased estimates of the financial status of OASDI. This requires projections of future revenues based on the current payroll taxes and future expenditures based on the current benefit formulas. Such projections must be long term and be based on assumptions that reflect the best available information and research. Projections indicate annual differences between expenditures and revenues (see Figure 3). After making the best and unbiased projections, the next step is how to summarize these results and present the data for review and evaluation. Prior to TR 2003, the Trustees reported the 75-year actuarial balance and the year of depletion of the Trust Funds.

These measures presented a limited and somewhat biased assessment of the financial status of Social Security. TR2003 and TR2004 present a much more balanced assessment of the financial status of Social Security than earlier reports. First, throughout the report, the Trustees indicate the amount benefits would need to be reduced if revenues are not increased. Thus, the reader can now consider the two basic options confronting policy makers (increasing taxes or reducing benefits) using the data provided in the report. Policy makers and the public need to know the OASDI deficit in terms of both higher taxes and lower benefits. Together these

measures present the range of possible policies that can be considered. The explicit possibility of benefit reductions is acknowledged in this latest report.

Second, for the first time in 2003, the Trustees presented the present value of the 75-year actuarial balance. This value indicates the amount of money that is needed today to provide sufficient funds to pay all promised benefits if the payroll tax and the benefit formula are unchanged. This concept provides an assessment of the additional funds needed today to finance the current system over the next 75 years. The present value of the 75-year shortfall as reported in TR2003 is \$3.5 trillion. This means that if \$3.5 were immediately transferred to the OASDI Trust Funds, all promised benefits could be paid with currently scheduled taxes.

The use of a 75-year projection period creates the potential for a “cliff” problem associated with projections of any specific length of time. For years, analysts have recognized and discussed the implications of a fixed term projection period. An infusion of \$3.5 trillion dollars of new money to put the system in balance for 75 years would only temporarily solve the financial problem of insufficient revenues as a new deficit would emerge with each passing year. In TR2003, the Trustees also presented an infinite time horizon estimate of the deficit. The infinite time horizon does not suffer from the “cliff” problem. TR2003 estimates that the present value of the deficit associated with retaining the current system for an infinite time horizon is \$10.5 trillion.

How should policymakers decide which method should be the primary focus of attention? Today, it would seem more likely that Social Security will be retained in some form. Thus, analysts should focus on the best methods of evaluating the financial status of an on-going system rather than focusing on the liabilities associated with terminating Social Security. In today’s reform debates, transitional costs are well known. Any proposal for termination of the current OASDI program and replacing it with an individual account system must directly address the issue of transitional costs. This issue was made explicit by one of the proposals in the 1994-1996 Social Security Advisory Council (1997). The transitional costs and future revenue gains was also an important part of the discussion surrounding the recommendations of the Commission to Strengthen Social Security (2001).

## **FINAL ASSESSMENT**

Future retirement policy must be based on a clear understanding of the cost of maintaining the current Social Security program and the cost of modifying or eliminating OASDI. The United States relies on the Trustees of the OASDI Trust Funds to provide an unbiased assessment of the financial status of the national retirement program. Each year, the Trustees produce a detailed report of the current operations of Social Security and projections of its long run viability. The projections in the report are provided by the professional staff of the Office of the Chief Actuary of OASDI.

The annual report receives considerable attention and is the primary source used in all debates concerning the financial status of Social Security. The report has traditionally avoided political entanglements and is viewed as the best, unbiased assessment of the financial problems associated with providing an adequate retirement income to an aging population. The assumptions, methods, and description of the revenue shortfalls are reviewed annual by the staff and Trustees. Changes are made based on new research and trends in the underlying variables.

The report has been substantially improvement in the last two years with the introduction of an infinite time horizon in the baseline estimates, the development of a stochastic model to augment the projections based on three sets of assumptions, and inclusion of new methods of describing the unfunded deficit of the system. The current reports detailed and of high quality. TR 2004 presents the financial status of Social Security using a variety of methods that provide the public and policymakers with appropriate information to evaluate this important program.

To ensure the continued high quality of the Trustees Reports, a technical panel of outside experts is appointed every four years to review the assumptions and methods used in the annual Trustees’ Reports. I chaired the 2003 Panel that carefully reviewed TR2002 and then TR2003. The Panel strongly endorsed the new methods for reporting the financial status of OASDI. In particular, the Panel concluded that the inclusion of the present value estimates were a major improvement along with the indication of benefit reductions needed to

bring the system into actuarial balance. The Technical Panel made a series of recommendations to modify the demographic and economic models, to amend the assumptions, and enhance the presentation. If adopted, our recommendations would modestly alter the projected Social Security deficit.

**Table 1. Measures of Financial Status of U.S. Social Security**

<b>Measure of financial status</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
Actuarial Balance (percent of payroll)	-1.87	-1.92	-1.89
Year Trust Funds Exhausted		2042	2042
Change in OASDI Trust Fund	\$165 billion	\$153 billion	\$153 billion (projected)
Present Value of 75-Year Shortfall of Funds	N/A	\$3.5 trillion	\$3.7 trillion
Present Value (Infinite Time Period) Shortfall of Funds	N/A	\$10.5 trillion	\$10.4 trillion

Source: Board of Trustees, (2003, 2004).

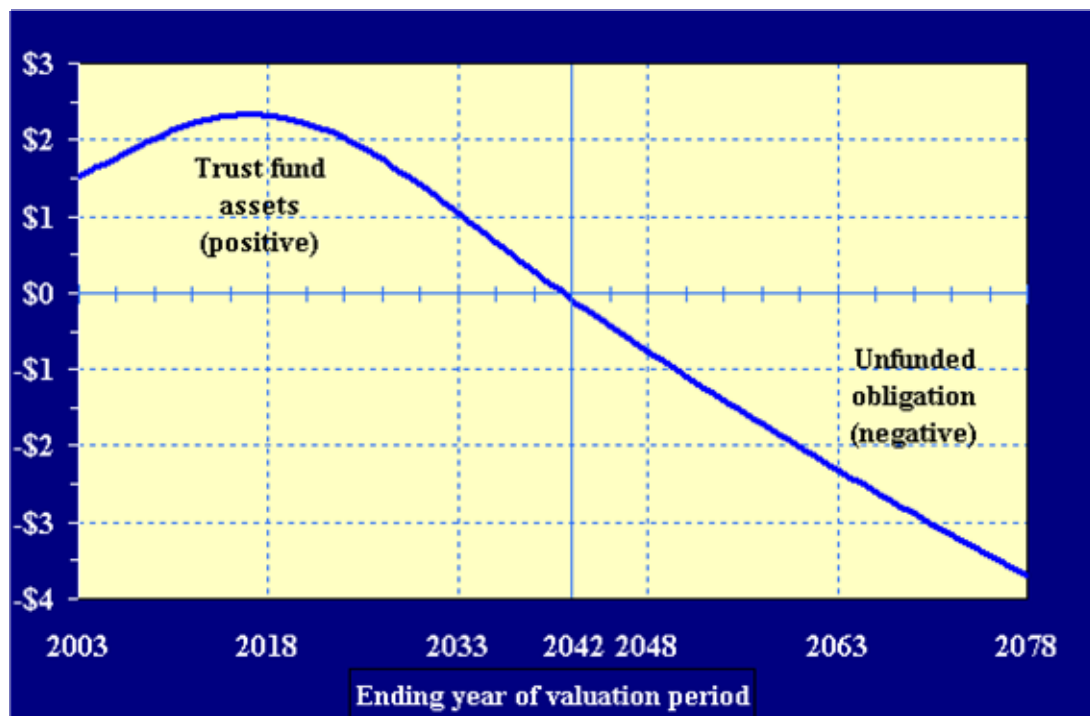
**Table 2. Annual Operations of OASDI Trust Funds (billions of \$)**

<b>Account Entry</b>	<b>2002</b>	<b>2003</b>
Assets beginning of year	1,086	1,378
Income	627	632
Outgo	462	479
Net Increase in Fund	165	153
Assets at end of year	1,378	1,531

Source: Board of Trustees (2003, 2004).

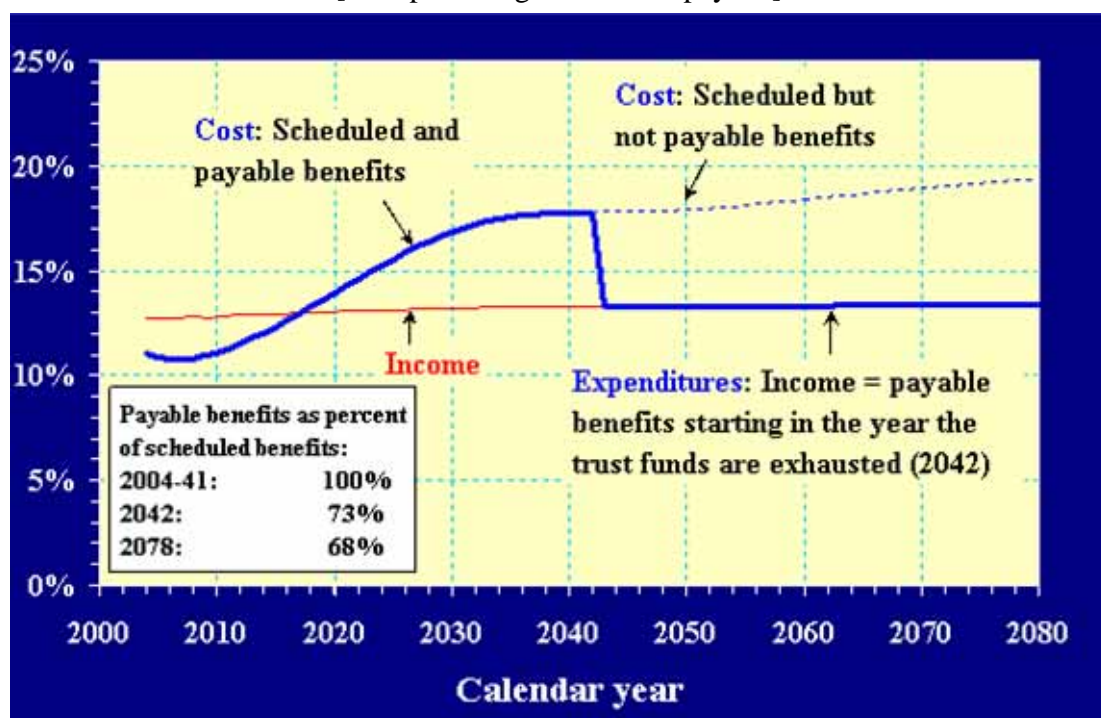
**Figure 1. Cumulative OASDI Income Less Cost, Based on Present Law Tax Rates and Scheduled Benefits**

[Present value as of January 1, 2004, in trillions]

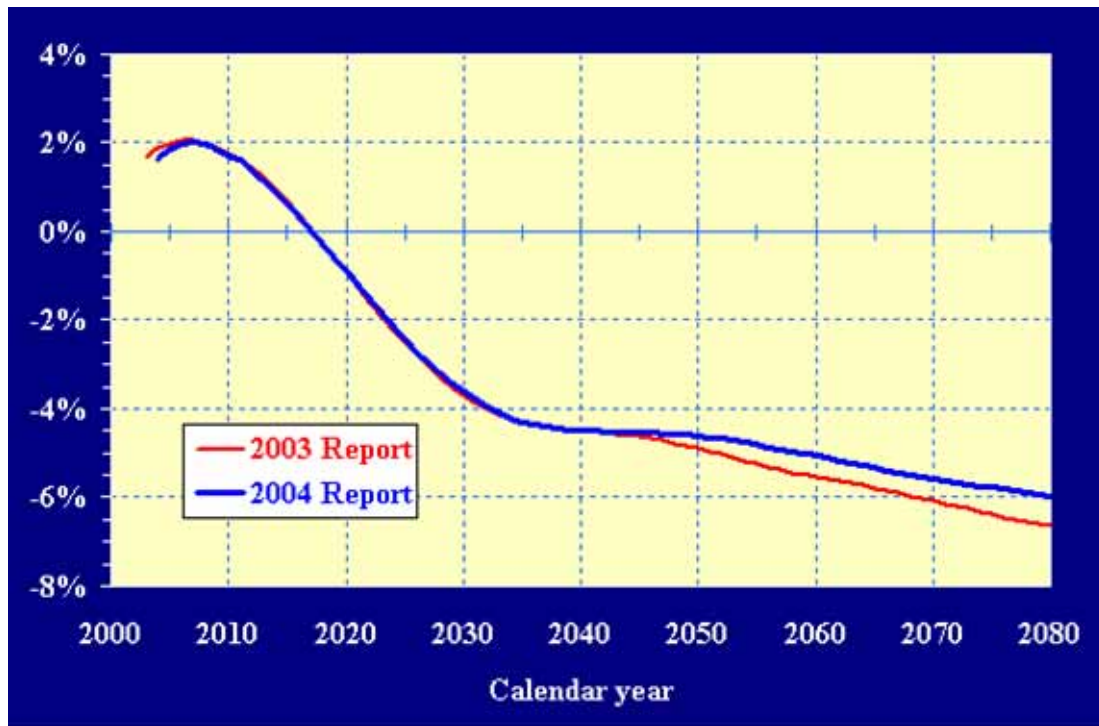


**Figure 2. OASDI Income and Cost Rates Under Intermediate Assumptions**

[As a percentage of taxable payroll]



**Figure 3. OASDI Annual Income Less Cost as Percent of Taxable Payroll  
2003 and 2004 Trustees Reports**



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## ENDNOTES

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<sup>1</sup> See for example, Board of Trustees (2004) for the latest annual report.

<sup>2</sup> The assumptions are described in the annual reports. For a critique of the methods and assumptions used in these projections, see 2003 Technical Panel on Assumptions and Methods (2003).

<sup>3</sup> In addition, all serious reform proposals are sent to the Office of the Chief Actuary for evaluation and costing. Relying on the Chief Actuary for costing reform proposals provides a uniform standard for comparing the cost and impact for alternative proposals.

<sup>4</sup> For a discussion of the financial status of OASDI in the early 1980s, see Greenspan Commission (1983).

<sup>5</sup> Jackson (2004) provides a detailed argument for adopting an accrual accounting measure of the financial status of OASDI.