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ISSUE BRIEF

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An Actuarial Perspective on the 2002 Social Security Trustees Report

Each year, the Board of Trustees of the Old-Age, Survivors and Disability Insurance ("Social Security") Trust Funds reports on the program's financial condition. The Trustees Report is generally about 200 pages of text and tables that present in great detail the trustees' assessment of the financial condition of Social Security over the next 75 years.

This issue brief provides an actuarial perspective on the most recent report, together with sufficient background material for readers to obtain a good understanding of (1) what the trustees are saying about the future financial condition of Social Security and (2) the limitations of the trustees' assessment. The debate over Social Security's financial condition has raised many important questions. The American Academy of Actuaries, a nonpartisan professional association of actuaries from all practice areas in the United States, offers this issue brief to address some of the issues that have been raised.

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Key Findings from the 2002 Trustees Report

The Trustees Report shows financial projections based on three sets of assumptions. The projections based on the intermediate assumptions are the trustees' best estimate. Those projections show the following:

- Key Dates:
  - In 2017, benefits and administrative expenses begin to exceed tax income; to fill the gap, the U.S. Treasury must pay some interest income in cash, and the amount grows each year.
  - In 2027, benefits and administrative expenses begin to exceed tax income and interest on trust fund assets; to fill the gap, the Treasury must pay all interest in cash and begin drawing down the assets held by the trust funds.
  - In 2041, the Social Security trust funds become exhausted – that is, use up all accumulated assets – and income is insufficient to pay benefits in full.

These key dates are — respectively — one, two and three years later than the corresponding dates in the previous year's report.

- Actuarial Balance: An actuarial deficit (negative actuarial balance) of 1.87 percent of taxable payroll is projected for the long-range 75-year period, 2002-76. Social

Security is not in close actuarial balance because, over that period, revenues would be sufficient to pay only 87 percent of costs. In 2041, when the trust funds become exhausted, tax revenues cover only 73 percent of costs.

- Magnitude of Changes Required: Social Security has a long-range actuarial deficit of 1.87 percent of taxable payroll. In other words, if action were taken this year, the combined employee-employer payroll-tax rate, currently 12.40 percent, could be increased by 1.87 percentage points to 14.27 percent, bringing Social Security's trust funds into balance for the next 75 years. Long-range actuarial balance could also be achieved with an across-the-board benefit cut of about 13 percent for all current and future recipients. These numbers increase if action does not occur until later.

- Sustainability: Moreover, neither of these two illustrative methods for putting Social Security in actuarial balance would keep it in balance. The projection periods for future trustees' reports will include years beyond 2075, which are years of deficits. A permanent fix would need to address those ongoing deficits.

- Cost vs. GDP: The cost of Social Security (total benefits plus expenses) rises from 4.5 percent of the gross domestic product (GDP) today to about 7.0 percent by the end of the 75-year projection period. Even though the projected insolvency date for Social Security's trust funds has moved three years later, Social Security still faces long-term financial problems. This conclusion is consistent with past reports for more than a decade. While insolvency is not imminent, the program will have long-range financial shortfalls under the trustees' best estimate assumptions. The improvements in projected financial status are due largely to changes in assumptions that reflect recent experience. However, the fundamental demographic forces that are expected to cause long-term financial problems for Social Security have not changed.

Changes Since the Previous Report

Changes in Benefit and Tax Provisions of the Law

Two laws passed in 2001 affect Social Security's finances:

- Public Law 107-117 repealed a provision of the Social Security Act that provided special wage credits to members of the uniformed armed services. This legislation reduces expected annual payroll-tax revenue to the trust funds by roughly $300 million.

- Another law, the Economic Growth and Tax Relief Reconciliation Act of 2001 (Public Law 107-16), indirectly reduced projected revenues. Currently, a small part of Social Security's financing comes from income tax on the benefits of high-income beneficiaries. By lowering tax rates for all taxpayers, this legislation reduces expected income to the trust funds based on the taxation of benefits through 2010.

The trustees report that these two legislative changes will have only a negligible impact on Social Security's finances over the long term.

Changes in the Projection Period

As each year passes, the long-range 75-year projection period moves forward one year; that is, the first year from the previous year's projection period becomes part of the past, and a new 75th year is added at the end of the previous projection period. Thus, for the 2002 report, the year 2076 has been added to the projection period. Benefit payments and administrative expenses in that year are expected to exceed income by 6.42 percent of taxable payroll. Spread over the entire 75-year projection period (and combined with other, less significant "valuation period" effects), this increases the overall actuarial deficit by 0.07 percent of taxable payroll.

Changes in Assumptions and Methods

Because the trustees cannot know what the future will bring, they must make assumptions about economic and demographic factors that affect Social Security's financial condition. The nature of these assumptions and how they affect the results of the projection are discussed in detail in the issue brief *Assumptions Used to Project Social Security's Financial Condition.*

Over the years, several independent panels of experts have evaluated the reasonableness of the trustees' assumptions. The last such panel was convened in 1999 under the auspices of the Social Security Advisory Board, a governmental body that advises the Commissioner of Social Security. The 1999 panel recommended changes to specific assumptions in the intermediate set but concluded that the trustees' projection methodology is "reasonable as a whole." The technical panel recommended three major changes to the intermediate assumptions that would significantly affect either program income or outgo. The changes related to (1) a more rapid reduction in mortality (with a corresponding increase in life expectancy), (2) an increase in the assumed ultimate annual real wage differential (expected increases in the national average wage, adjusted for inflation) from 0.9 percentage point to 1.1 percentage points, and (3) a decrease in the ultimate annual real interest rate expected on the special-issue Treasury securities held by the trust funds from 3.0 percent to 2.7 percent.

Increases in life expectancy raise program costs because people receive benefits longer. Increases in the ultimate real wage differential strengthen program financing because they raise payroll taxes by more than the benefits computed on the higher pay rates, and because the increases in payroll taxes occur sooner than the increases in benefit costs. Lower interest rates reduce the income to the trust funds and, thus, weaken the program's financial status.

Combined, the three changes in assumptions recommended in 1999 would have increased significantly the actuarial deficit for the program, because the cost attributable to their increase in life expectancy is substantial, while the additional net tax revenue attributable to higher real wage growth is offset by the lower interest income. However, the three changes would not have changed the estimated year of trust fund exhaustion (2034 at the time of the panel's report), because the additional net tax revenue from higher real wage growth and the reduction in interest income would roughly offset each other over the first few decades of the 75-year projection period, while the cost for increased life expectancy would be greatest toward the end of that period.

For the 2000 Trustees Report, the trustees moved in the direction of the panel's first two major recommendations, regarding life expectancy and real wage growth. This action is consistent with the trustees' history of tending to agree with most – but not all – of the recommendations of technical panels over a period of time. For the 2001 Trustees Report, the trustees used essentially the same ultimate assumptions for life expectancy and real wage growth as in the 2000 report.

For the 2002 Trustees Report, however, the trustees further modified the real wage and mortality assumptions in the same direction as recommended by the 1999 technical panel. The assumed ultimate real wage differential under the trustees' intermediate assumptions was increased from its 2001 value of 1.0 to 1.1, or equal to the technical panel's recommended assumption. Mortality projections in this year's report reflected somewhat more rapid reductions in death rates. In addition, the trustees lowered the ultimate assumed rate of inflation under the intermediate assumptions from 3.3 to 3.0. So far, the trustees have not followed the technical panel's recommendation to lower the ultimate annual real interest rate expected on the special-issue Treasury securities.

The trustees also made several changes in the short-range assumptions, primarily to reflect recent experience and to smooth the transition from the new actual experience to the ultimate long-range assumptions. All these assumption changes together, combined with incremental improvements in the valuation methodology, decreased the actuarial deficit by about 0.06 percent of taxable payroll.

The net result of these changes in assumptions and methods and the change in the long-range valuation period, discussed above, is a small increase in the 75-year actuarial deficit, from 1.86 percent of taxable payroll in 2001 to 1.87 percent of taxable payroll in 2002.

Beyond Solvency

The 3-year postponement of Social Security's projected insolvency made the headlines of many newspapers. While 2041 is certainly important as the year when the Social Security trust funds are expected to exhaust their assets, another important milestone is expected in 2017.

Until that year, tax revenue is expected to exceed benefit payments and administrative expenses. This excess currently is invested in special-issue government securities that are held by the trust funds. But Social Security's outgo is rising more rapidly than its tax income. Beginning in 2017, benefit payments and administrative expenses are expected to exceed tax revenue, largely due to the rapid increase in the number of baby boomers receiving benefits. Unless Congress acts to reduce Social Security's anticipated long-range deficit, all the government securities held by the trust funds must gradually be redeemed and converted to cash by 2041. The federal government could raise the large amounts of cash needed by selling comparable government securities to the public, by raising other taxes or by reducing other expenditures. Over the years following 2017, the accumulated Social Security cash requirements could place a severe strain on the federal government's finances. How the government raises the funds to redeem the government securities held in Social Security's trust funds depends on many factors, such as the surplus/deficit situation for the rest of the federal government, the size and growth rate of the economy and the attractiveness of U.S. government securities in the international financial market.

Beyond the Best Estimate

Because of the inherent uncertainty of events occurring as long as 75 years into the future, for purposes of the annual report, the trustees make three projections based on three sets of assumptions: intermediate (best estimate), low-cost and high-cost. The intermediate projection underlies the findings described above. The following table summarizes the ultimate, long-range value of some of the key economic and demographic assumptions under the intermediate, low-cost and high-cost assumptions:

Ultimate Assumption	Intermediate	Low-Cost	High-Cost
1. Annual Increase in Average Wage	4.1%	3.6%	4.6%
2. Annual Increase in Consumer Price Index	3.0%	2.0%	4.0%
3. Real Wage Differential (1 minus 2)	1.1%	1.6%	0.6%
4. Annual Labor Force Growth	0.2%	0.6%	-0.3%
5. Unemployment Rate	5.5%	4.5%	6.5%
6. Annual Interest Rate on New Treasury Securities	6.0%	5.7%	6.2%
7. Total Fertility Rate (Children per Woman)	1.95	2.2	1.7
8. Average Annual Reduction in Age-Sex-Adjusted Death Rates from 2026 to 2076	0.73%	0.35%	1.29%
9. Life Expectancy at Birth in 2076 (Years)	83.3	79.9	87.8
10. Annual Net Immigration	900,000	1,210,000	655,000

Under the low-cost assumptions, the trust funds remain solvent over the entire 75-year projection period. This result reflects a number of factors, including an ultimate annual real wage differential of 1.6 percentage points, versus 1.1 percentage points for the intermediate assumptions, and an average annual labor-force increase trending toward 0.6 percent, versus 0.2 percent for the intermediate assumptions. Other important differences between the intermediate and low-cost assumptions are the fertility rate (average number of children born to a woman in her lifetime), which rises to 2.2 in the low-cost set but declines to 1.95 in the intermediate set, and life expectancy at birth, which is 79.9 years in 2076 in the low-cost set but 83.3 years in the intermediate set.

Under the high-cost assumptions, the trust funds are exhausted in 2029, 12 years earlier than under the intermediate assumptions. Under this scenario, the annual real wage differential settles at 0.6 percentage point, and the labor force actually begins contracting by 0.3 percent annually late in the projection period. The fertility rate falls to 1.7, and the life expectancy in 2076 rises to 87.8 years.

While the trustees consider the projections based on the intermediate assumptions to be their best estimate, they believe that the other assumption sets are within the range of reasonable expectation. And, of course, a panoply of combinations of assumptions from the three sets also falls within this range. Not surprisingly, experts have differing opinions about the best assumptions to use for projecting the future financial condition of Social Security. Some observers argue that the trustees' intermediate assumptions are too pessimistic and thus overstate the program's financial problems. These observers usually argue that the trustees' economic assumptions are too pessimistic, because the assumptions do not reflect changes in productivity and labor force participation that they believe are likely to occur as the population ages. Others argue that the intermediate assumptions understate the severity of Social Security's financial problems. In particular, these observers often claim that the trustees are understating how long people will live in the future.

Conclusion

The projected financial condition of the Social Security program under the intermediate assumptions of the 2002 Trustees Report is quite similar to that shown in the 2001 report. The projected date of trust fund exhaustion has moved from 2038 to 2041, and the size of the actuarial deficit over the 75-year projection period has increased slightly. The 2002 report also projects that trust fund expenditures will exceed tax income beginning in 2017. If this occurs, Social Security will start putting demands on the Treasury for additional funds. Thereafter, the projected shortfall of tax income will rise, exceeding 6 percent of payroll by 2076. All this assumes that future demographic and economic experience will follow the intermediate assumptions (and that the Social Security Act is not changed). Given the uncertainty of the future over the next 75 years, many other reasonable scenarios are possible. Under some, Social Security's financial problems disappear, while under others they become much worse.