

Commentary

BUFFIN PARTNERS INC.

ECONOMIC INVESTMENT AND ACTUARIAL RESEARCH

Social Security Financial Projections

In the 2010 report of the Board of Trustees of the US Social Security system, the trustees provide an update on the financial condition of the system and present results of financial projections extending to 2084. These published results include the actuarial balances (surplus or deficit) of the system over various projection periods, including 25, 50 and 75 years, on each of three different sets of economic and demographic assumptions. The actuarial balance is derived as the difference between (a) the value of future income and the current assets of the system and (b) the value of future benefits and other expenses together with a minimum reserve of one year's benefit outgo. The ratio of the value of this future income and assets to the value of future benefits and expenses (without the minimum reserve) represents the system's solvency ratio. While the level of the actuarial balance as a percentage of taxable payroll, as reported by the trustees, is a well-established measure of the financial status of the system, it does not give an indication of the extent of the solvency of the system, i.e. the degree in absolute percentage terms to which the assets-plus-income stream is projected to be available to meet the benefits-plus-expense-outgo stream. The trustees routinely report the calendar year in which the trust fund is projected to become depleted, but in more positive terms, this event occurs in the final year of the period for which the system is at least 100% solvent.

The 2010 trustees' report states that the 75-year actuarial balance improved compared to the 2009 report, showing a reduction in the 75-year deficit from 2.00% to 1.92% of taxable payroll. On a solvency basis, without the minimum reserve, the 75-year deficit amounts to 1.77% of taxable payroll; this means that

full 100% solvency until 2084 could be achieved by increasing the payroll tax rate from the current 6.2% for employers and employees to about 7.1%.

The trustees' results indicate that the system has a solvency ratio in excess of 100% for 27 years, with solvency ratios of 102% for 25 years, 92% for 50 years, and 89% for 75 years. In addition to the standard "intermediate" scenario, the trustees also report projected results on an optimistic "low cost" scenario and on a pessimistic "high cost" scenario. These alternative projections are based on more favorable and less favorable sets of economic and demographic assumptions respectively. They are generally interpreted as representing the outer limits of a range of plausible outcomes for the system. For the optimistic scenario, the solvency ratios for 25, 50 and 75 years are 112%, 106% and 105% respectively. For the pessimistic scenario, the corresponding solvency ratios are 93%, 80% and 74% respectively.

Although 75-year projections are inherently only actuarial estimates of potential future outcomes, nevertheless, in practice these projections are often misinterpreted as precise indicators of the system's solvency, while the range of possible outcomes between the low-cost and high-cost estimates is disregarded. It is important to focus attention on the full spectrum of potential outcomes, because the range of these outcomes is large, reflecting the degree of uncertainty associated with the results. From the results in the 2010 report the difference in the solvency ratios from the low-cost to the high-cost results is as high as 19% at 25 years, 26% at 50 years and 31% at 75 years. These differences serve to show the substantial degree of uncertainty associated with the intermediate estimates.

These large differences also increase significantly as the length of the projection period increases. In order to measure this increasing uncertainty, it is possible to derive an index of relative credibility for the longer-period projections compared to the 25-year projections. This credibility index is measured relative to a base of 100 for 25 years. From the 2010 results the relative credibility index is 67 for 50 years and 53 for 75 years. These index levels indicate that even if the 25-year projections are regarded as perfectly reliable, the 50-year projections are only about two-thirds as reliable, and the 75-year projections are only about half as reliable.

Media coverage typically does not report the uncertainty surrounding long-range financial projections or the degree of solvency. But with a solvency ratio in excess of 100% for the next 27 years, there is not an immediate crisis ahead for the system. Reducing the deficit that may arise after 27 years is a simple process; there are many policy options available apart from increasing the payroll tax rate from 6.2% to 7.1%. In any event, it is important for policymakers to understand the nature of the uncertainty surrounding long-range projections and to consider whether they represent a sound basis on which to make policy decisions affecting the system for periods out as far as 75 years.

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