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PBGC: Projections of Future Financial Condition

The Pension Benefit Guaranty Corporation (PBGC) recently released its full 2005 Annual Report, available at www.pbgc.gov. Most financial figures were released in November (see "PBGC 2005 Annual Results" at www.coffi.org). However, page 11 contains PBGC's latest projections of its potential future financial position, based on its Pension Insurance Modeling System (PIMS).

In brief, PBGC's latest runs of the PIMS model suggest that its deficit 10 years from now is likely to be roughly what it was at the end of 2005, assuming no changes in law. However, past performance of the model, and comparisons with other models of PBGC's finances, suggest this is likely to prove significantly overly optimistic.

The modeling results from PIMS are slightly less negative than those from last year, showing a median projected deficit in 2015 of $21.8 billion compared to last year's comparable estimate of $26.9 billion. The new estimates are close to 2005's reported deficit of $22.8 billion. (All figures are in "present value" terms, meaning that they are roughly in today's dollars, with inflation and real interest rates taken out.)

Three key points stand out. First, there is reason to believe that the PIMS model produces results considerably more optimistic than reality, as explored below. Second, the median result is only the middle data point out of 5,000 simulations run on PIMS. 10% of the simulations showed a future deficit of $45 billion or more and 10% showed the deficit falling to $4 billion or less. Finally, this year's results from the PIMS model are essentially flat with last year's estimates, if adjusted for $3-4 billion of additional premiums over the decade resulting from a premium increase included in legislation passed a few months ago.

PBGC does not bill the results of the PIMS model as their best estimate of PBGC's future financial position, but the figures are often treated that way because PBGC produces no other quantitative estimate of its future deficit. Unfortunately, past results suggest that there may be a systematic positive bias in the PIMS outputs. For example, the 2002 results showed a median estimate of $18 billion of aggregate claims on PBGC over the succeeding decade with a resulting overall deficit of $10 billion in 2012. This might have seemed optimistic even at the time, given that PBGC had just experienced $9 billion of claims in 2002 alone. It looks even more optimistic in retrospect, since the first two years of the post-2002 decade had a total of $20 billion in claims.

Similarly, 2003's projections showed $22 billion of claims over the following ten years while, in fact, the next year experienced $15 billion of claims, leaving only $7 billion of room for the succeeding nine years. The most recent model runs show a median annual claim on PBGC of $1.4 billion over the next decade. This seems low. It will surprise a great many experts, including the author, if there are only $14 billion of claims on PBGC over the next decade.

The strong suggestion of an optimistic bias implied by these comparisons is not definitive. It is possible that the model works, but that we experienced an extreme case within the range of reasonable results. The PIMS model is a probabilistic or "stochastic" model. It is designed to take account of the impossibility of accurately predicting the future value of each critical variable and therefore assigns a range of probabilities to those variables. The aggregation of random choices within the probability distributions of all these variables can produce a very wide range of results when comparing different runs of the model.

One reason to believe that there may be an optimistic bias in the model is that it does not take account of "moral hazard" issues, which have been a major factor in PBGC's largest losses. Moral hazard describes a situation where the existence of an insurance policy causes the beneficiaries of that policy to act in ways harmful to the insurer. For example, a major airline that was sliding towards bankruptcy agreed to make its pension formula substantially richer. It has been alleged that the airline and its union would not have negotiated this hike in the absence of a PBGC guarantee for a substantial portion of the promised increase. Whatever the specific reasons, sponsors making large claims on PBGC have usually seen a major decline in their pension funding levels in the year or two before the claim. This sharp increase in potential PBGC claims is usually not captured by the mechanics of the PIMS model.

A second reason to suspect an optimistic bias is a comparison with other models. The author is aware of only two detailed models of PBGC's future finances. Neither calculates a specific deficit number directly comparable to the output of PIMS, but both produce results that appear to imply considerably more pessimistic outcomes.

The Congressional Budget Office issued a study last fall that estimated what a private insurer would likely charge to take on PBGC's current deficit plus all claims likely to come in during the next decade, net of PBGC's premium receipts. (See "The Risk Exposure of the Pension Benefit Guaranty Corporation" from Sept. 2005, available at www.cbo.gov). The CBO estimated that it would cost $87 billion to buy such coverage (see Table 5 in the report and note the details in the accompanying text, which are not clear from the table alone.) $31 billion of this represented a kind of risk charge beyond what a government entity might demand, but even the net result of $56 billion is far higher than seems consistent with the PIMS model's most recent estimate of $14 billion of new claims over the decade, plus the starting deficit of $23 billion. (Note that the new claims figure in PIMS does not include the positive effects of PBGC premiums, which totalled $1.5 billion last year alone.)

COFFI itself has a detailed financial model that estimates the level of PBGC's cash and investments at the end of each of the next 75 years. COFFI's model finds that it would take a $51 billion rescue, in today's dollars, if we wished PBGC to be able to pay out the pensions that it has already promised to take over, plus new promises as a result of the next decade of claims. This is not precisely the same as the expected accounting deficit in ten years, but should be in the same range. (See "PBGC: Legislation May Not Restore Solvency", on www.coffi.org).