Bubble Markets and Pension Fund Assumptions

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Amidst all the hullabaloo over corporate accounting and conflicts of interest, little attention has been paid so far to a story that I first caught when reading Elizabeth MacDonald's "Pollyana Pensions" in Forbes magazine (May 27, 2002, p. 160). There she and Josephine Lee pointed to a number of major companies that had recently raised their expected returns on pension fund assets. Her concern was with the effect on paper profits, and she warned readers that they may want to be "bearish about companies that are raising assumed pension fund returns."

Here, however, I wish to raise a different but related issue. When is it appropriate to adjust expected returns upward? I suggest that some accountants and actuaries advising pension funds may be following the same common but misguided advice that was often given to investors before the recent downturn in the market.

Here is more or less how the calculations leading to this advice go. A market hits a peak, say, in price to earnings or stock market valuation relative to GDP. Ignoring these warning signals, many analysts then perform a very similar computation on the historical geometric mean rate of return on a stock portfolio. Lo and behold, that number rises after a recent period of stock valuation increase.

If one tries to provide a warning that the market is unusually high and risky, these analysts point to all sorts of data in apparent contradiction. For instance, most analysts have access to the same data set that goes back to 1926. Any 1926-to-today calculation starts at a peak right before a downturn; hence it cannot be accused of being a trough-to-peak calculation. Other calculations with a different starting date, such as 1950, do even better. Another type of common calculation is to show that a diversified stock portfolio seldom produced negative returns over a number of 10-year periods.

Here is the fallacy in these arguments. First, one must remember that predictions are being made for the future on the basis of past experience. Elementary statistical theory suggests that when making estimates, one must use observations that are -- or at least can reasonably be assumed to be -- similar. To simplify, if one wants to predict what will happen when investing in a market with a price-earnings ratio (P-E) of 30 for the next two years, then one needs a sample of two-year returns for investments in years where the market was at a P-E of 30. If there are only one or two such observations, then there are not enough data to draw any statistical inference. In some cases, such as starting with a 2000 level of stock-valuation-relative-to-GDP, there have been no former observations. Of course, I am simplifying here, and variables other than P-E must be examined. But the basic statistical point remains: One can only make inferences by drawing observations from the same set.

Another way to consider what is going on is the following. At a P-E of 30, one's investments are earning 3.3 percent within the company; at a P-E of 10, they are earning 10 percent. Again, there is a complication since some believe that reinvested earnings will eventually earn a high return within an established company, so the value of buying that future investment knowledge of the company raises the expected return at a P-E of 30 above 3.3 percent. Even with the adjustment for this factor, moreover, in general the higher the P-E, the lower the expected rate of return.

What does all this mean for pension fund accounting? Essentially, when the market does well, pension fund managers and their actuarial and accounting advisers should start predicting lower expected rates of return; when the market does poorly, they should raise these expected returns.

Plan sponsors might not want to make constant adjustments in their assumptions, and it is hard not to be sympathetic. A problem is caused, however, because pension fund accounting constantly restates market

value. In a sense, relative constancy of assumptions is already foresworn by adjusting upward or downward asset value. It is inconsistent to recognize sudden gains but not that those sudden gains increase the probability either of a future loss or of a future lower rate of return. With bonds, of course, this correspondence is easier to see. If a bond increases in value from $100 to $140 because interest rates fall from 5 percent to 3 percent, both factors -- the higher valuation and the lower expected return -- may be recorded simultaneously. That is, bond value is increased and expected return is lowered at the same time. In the case of stocks, however, these parallel adjustments generally do not occur so readily, but it is clearly unreasonable to assume that rates of return go up or even stay constant when there are sudden increases in value.

What are some other implications? First, since many pension plans are insured by the Pension Benefit Guarantee Corporation, the higher the assumed rate of return, the more risky the insured fund -- all other things being equal.

Second, if generous assumed rates of return lead to overstated financial income, then there may be overstated taxable income as well and a pick-up of revenues to the Treasury. This speed-up in revenues yesterday will mean some slowdown today or tomorrow. Revenue estimators must start assuming higher levels of funding of pension plans to offset these past lower levels of funding.

Third, the tax laws may have an unintended influence on behavior. When pension plans are overfunded, corporations cannot simply withdraw the extra funds immediately without paying a penalty. Instead, they often effectively withdraw money by making lower or zero levels of new funding available. A higher assumed rate of return may be one way that they attempt to achieve this goal or to insure that they can sustain low deposit rates longer into the future. There may be justification for reducing levels of overfunding, but one hates to see changes in actuarial assumptions as the method used.

Finally, I wonder if this is not yet another area that the accounting and actuarial professions begin to examine when setting standards and training new professionals. As a simple matter of financial economics and accounting, they should be trained to recognize the danger of using adjusted historical data to raise expected rates of return when valuations have recently increased.

Other Publications by the Authors

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