COMMENT 31: August 19, 2008

Comments on ASOP No. 27
David Wilcox[1]

In this note, I limit my comments to the choice of discount rate.

The choice of a discount rate (or set of discount rates) represents an answer. If the answer is going to make sense, the discount rate must be selected in light of the question that is being asked. No single discount rate (or set of discount rates) can provide a sensible answer to all possible questions. In general, different discount rates will be appropriate for answering different questions.

- One relevant set of questions focuses on funding adequacy. Questions in this group include: "Will the assets currently on hand be sufficient to meet accrued liabilities?" "Is the plan fully funded?" "What fraction of plan liabilities are assets-currently-on-hand sufficient to fund?" For purposes of answering any of these questions, the appropriate method is to discount accrued liabilities back to the present using a term structure of risk-free interest rates. A key aspect of these questions is that they do not pose issues of chance; for example, they do not ask: "*Might* the assets currently on hand be sufficient to meet accrued liabilities?" or "Are the assets currently on hand *expected* to be sufficient to meet accrued liabilities?"

    - The choice of discount rates should depend on whether the liabilities are indexed to inflation. In general, the simple rule is to discount nominal liabilities using a term structure of nominal interest rates, and to discount real liabilities using a term structure of real interest rates.

    - Given the richness of today's markets for nominal and real liabilities, the choice of discount rates should not be limited to "select" and "ultimate" rates. Future cash flows should be discounted back to the present using rates specifically tailored to the time to payment of the cash flow.

- Another relevant question focuses on the market value of the liabilities incurred by the plan sponsor. A precise specification of this question runs as follows: "What is the market value of the accrued obligations of this sponsor in this plan?" The answer to this question depends on only one factor: the characteristics of the liabilities. No other factor matters, except insofar as it influences the characteristics of the liabilities.

    - To illustrate the point: The market value of liabilities incurred by state or local governments should be measured using a term structure of essentially riskless interest rates. The reason why essentially riskless discount rates are appropriate is that the liabilities of state and local governments appear to be

[1] The views expressed in these comments are my own and are not necessarily shared by the members of the Federal Reserve Board or the other members of its staff. They do not represent an official position of the Federal Reserve.

essentially free of risk. Historically, even when a state or local government has run into extreme fiscal difficulty, it has made good on 100 percent of accrued liabilities, even when bondholders have taken losses. To cite but one example among many, when New York City experienced extreme fiscal distress in the 1970s, pension plan participants were paid 100 cents on the dollar of accrued liabilities, even though bondholders were not.

- If the liabilities of a state or local government are held to be essentially riskless because the sponsor is a public-sector entity, then the investment allocation of the trust fund is irrelevant to the task of choosing discount rates for the liabilities; if the liabilities are riskless, then they need to be discounted using riskless discount rates, plain and simple.

- Similarly, the choice of discount rates should not be influenced by the fact that a state or local government does not exist to maximize profits; nor by the fact that state or local governments cannot be taken over in a merger or acquisition; nor by any other factor, except insofar as any such factor changes the character of the liabilities.

- The fact that the sponsor may be a "going concern" implies that its liabilities are safer, all else equal, and therefore should be discounted at rates that are appropriate for safe cash flows rather than rates that are appropriate for cash flows that are correlated with stock-market performance.

- The choice of discount rates for computing the market value of liabilities incurred by a private employer should be influenced by a variety of factors including the funding adequacy of the plan, the credit-worthiness of the sponsor, and the investment allocation of the assets of the trust fund. The appropriate discount rates for computing the market value of liabilities of a private sponsor are bounded below by the term structure of riskless rates and bounded above by the term structure of interest rates faced by borrowers resembling the plan sponsor. In general, the liabilities of the pension plan are safer—and therefore should be discounted at a lower rate—than the general obligations of the plan sponsor because the assets of the trust fund stand as the first line of security for the pension promises. In contrast, there is no "first line of defense" for general obligations of a firm.

- What questions are current-practice discount rates meant to answer?

  - A question that might motivate the use of the expected return on the portfolio of assets is the following: "Are the assets currently in the trust fund *expected* to be sufficient to pay the liabilities of the plan?" This question is deficient because it fails to take risk into consideration. If the answer to this question comes back "yes," the decisionmaker has no idea whether the pension plan faces no risk of a shortfall of assets relative to accrued liabilities, a little risk,

or a great deal of risk. If the answer comes back "no," the decisionmaker could respond by ramping up the equity share in the trust fund until the answer comes back "yes." (In general, so long as the plan can leverage its investment position, there will be a level of equity exposure that will deliver "yes" as an answer.)

- One might look to stochastic simulations (also known as Monte Carlo simulations) as a means of rectifying the shortcomings of the question cited in the preceding bullet. Such simulations can be used to illustrate the range of potential outcomes and the associated probabilities of occurrence. Decisionmakers could then be presented with the various possible outcomes and their respective probabilities, and told to make the essential choices for the governance of the plan on the basis of that information. But even that information would be deficient because it would ignore a central reality of financial markets—that equities tend to perform worst when times are bad, and tend to perform best when financial resources are most plentiful. This correlation is the fundamental reason (together with risk aversion) why equities pay a higher rate of return than do safe assets. Therefore, this correlation cannot be ignored; yet, a standard Monte Carlo simulation does exactly that.

- In order to make sensible decisions, policymakers must take risk into account. If policymakers decide to penalize risk to the same extent that financial markets do, then they will conclude that there is no advantage to investing in assets that do not match the characteristics of their liabilities; no value is created on behalf of taxpayers (in the case of public-sector plans) or on behalf of shareholders (in the case of private-sector plans).

- Some observers have argued that plan trustees can afford to be less risk-averse than the typical participant in financial markets. This argument seems to be particularly pervasive in discussions of public-sector plans. But the implications of this argument, if it is to be taken seriously, are profound. If governments truly should behave as if they are more tolerant of financial risk than the typical participant in financial markets, then governments should be the preferred providers of *all* types of financial products involving financial risk, including life insurance, commercial loans, and mortgages, to name but a few. But few analysts really believe that the government is the preferred provider of such products, suggesting that the premise—that governments can afford to be more tolerant of risk—is highly suspect.

- There is one circumstance in which it would be appropriate to set the discount rate equal to the expected return on assets: when the pension trust has no recourse to the sponsor, and the assets in the trust therefore represent the sole wherewithal of the plan. In that case, the benefits payable from the plan will inherit the risk characteristics of the assets. However, this circumstance seems far from current reality. Plan participants would be surprised indeed to learn that their benefits have

the same risk characteristics as a 60/40 portfolio of stocks and bonds.

- In sum: In order to make an intelligent selection of discount rates, a decisionmaker must be clear about what question is being addressed and must develop a set of discount rates that represents a sensible answer to that question. Economics provides clear guidance as to how this should be done. The key is to choose discount rates in light of the characteristics of the cash flows being discounted. This is not a controversial proposition among economists. The current practice of discounting private and public pension benefits and liabilities seems to violate that proposition.