JAMES KENNEY

No Pension Plan Left Behind

DIVERSIFICATION OF INVESTMENT is a cornerstone of modern portfolio theory. Staying near the efficient frontier provides both greater return and lower risk, according to current investment philosophy. This theory of investing is enshrined in recent legislation governing 401(k) plans, as well as being required material on the actuarial exams promulgated by the Society of Actuaries.

Another, less-noted theory of investment is a concept called immunization. This idea maintains that by matching a stream of future payments (liabilities) with a stream of future income (assets), an entity's risk can be immunized from future fluctuations in the value of its investments. For this approach to work properly, the streams of both income and outgo must be highly predictable, which in turn means that the assets must essentially be fixed-income securities, i.e., bonds of appropriate maturities. In a subtle way, this approach to pension plan financing is built into both current accounting standards and the Pension Protection Act of 2006 (PPA).

The promises made by defined benefit (DB) pension plans are long-term in nature. An ongoing plan generates obligations to pay benefits for up to 75 years, or even longer. This fact in itself indicates one flaw in the immunization strategy, since bonds extending beyond 30 years are essentially unavailable.

It is generally accepted that the return on equities is roughly 2 or 3 percent greater than that on fixed-income securities for investment horizons exceeding 20 years or so. This is the reason that Congress has encouraged investment education for 401(k) participants. If bond yields were comparable to equity yields over the long term, there would be little reason to educate plan participants about the benefits of diversification.

It is easy to show, using stochastic modeling, that DB pension plans that invest prudently in a diversified portfolio of stocks and bonds face two risks under the PPA—both of which could easily be avoided by using the immunization concept of investing solely in fixed-income securities. These risks are volatility in future contribution streams (and pension expense) and the possibility of irrecoverable overfunding. When liabilities are measured using a rate 2 percent lower than the expected long-term rate of return (determined on a reasonable basis according to modern portfolio theory) and assets equal these liabilities, then overfunding is the most likely outcome. Due to reversion penalties on the return of excess assets, an asymmetrical situation is created once a plan reaches a fully-funded status. An unexpected burst upward in equity-based assets can be recovered only gradually, through a "contribution holiday," until additional accruals eat up the surplus, while an unexpected drop in equity values creates an immediate surge in contribution requirements.

It is only natural for actuaries to point this out to their clients, and it appears that large firms are already doing so. It is also natural for sponsors of DB plans to consider the alluring advantages of immunization, especially as their plans approach full funding and the asymmetric nature of equity investment becomes more acute.

However, there are two major pitfalls waiting for us down that road. The first is renouncing the power of equity investing even though a plan's time horizon permits it. The problem with investing solely in fixed-income securities is that the real cost of funding pension promises is more expensive in the long run. The second, more subtle danger is the probable consequence if large pension plans begin selling equities and buying bonds. This would lead to a significant downward movement in the equity markets, coupled with falling corporate bond rates. Falling rates will in turn lead to greater pension liabilities (as measured by PPA standards), and thus lower funded ratios, as plan sponsors make the transition to the immunization strategy. This period of transition would be fraught with peril even for those who act early, because it is simply not possible for large plans to dump their equity positions overnight and replace them with bonds.

Both these consequences would reward those who act ahead of the curve and punish those who continue to believe in the old paradigm of prudent investing. This is the logician's "prisoner's dilemma." If counting on others to remain true to the principles of diversification puts one at risk, there could be a race to the bottom, with those abandoning this principle first profiting—and the rest losing. Ironically, the Pension Protection Act may well prove to be the Pension Destruction Act.

Editor's Note: *The views expressed in this column are those of the author and do not necessarily represent the views of the Academy.* **JAMES KENNEY**, *a pension consultant in Berkeley, Calif., is a contributing editor to the* EAR.