



SOCIETY OF ACTUARIES

Article from:

Risks and Rewards Newsletter

October 2003 – Issue No. 43

Financial Economics for Pension Plans

by Richard Q. Wendt

Participants at the recent Great Pension Controversy Symposium in Vancouver spent two days discussing the concepts of financial economics as applied to pension plans. Since then, many of my actuarial colleagues who did not attend have asked, "Exactly what is financial economics and what does it have to do with pension plans?"

The Actuarial Foundation's textbook on financial economics tells us, "... the field of financial economics has built on the Nobel Prize-winning works of Markowitz, Merton, Miller, Sharpe and Scholes. Their work spawned an entire field of formal treatment of investment management and asset and derivative pricing." Consideration of risk is the tenet of financial economics.

The recent paper by Jeremy Gold and Larry Bader, "Reinventing Pension Actuarial Science," evaluated pension finance in the light of financial economics, particularly focusing on the necessity for considering risk in valuing liabilities. Their seminal paper set the stage for the Vancouver symposium. Although there were some pockets of resistance, most of the symposium attendees supported the general concepts of financial economics, at least in this writer's opinion.

The majority of symposium presenters agreed on three fundamental principles:

- Pension liabilities are "bond-like."
- Pension liabilities should be valued at discount rates derived from bond yields.
- Asset/liability relationships are critical elements of pension plan financing.

On the other hand, presenters differed on a key proposition—that pension funds should *invest* primarily in bonds. If that proposition should suddenly take hold, there could be dramatic changes in pension investments, corporate finance, stock and bond markets and even the overall economy. Perhaps for the better, perhaps not.

When prior financial theories have been put forth (e.g., modern portfolio theory), financial managers generally had a choice of either implementing or ignoring the theory, depending on their own analysis and preference. If a financial manager thought that the particular theory provided some advantage, she could have voluntarily chosen to implement the theory. Independent actions by market participants typically occur over medium to long time horizons and generally have little noticeable market impact in the short term.

Yet, new funding or accounting requirements could impose financial economics principles on pension plans in one fell swoop. With corporate and governmental defined benefit (DB) pension plans accounting for approximately \$ 2 trillion of assets, a

"The Law of Unintended Consequences" is what can happen when we plan carefully, but fall so much in love with our plans (and usually with what we are convinced is our superior knowledge and wisdom) that we fail to ask the tough questions that could save us from potential backlash and even disaster. When we become so sure that we're right, we may neglect to ask, "OK, we think we've got this figured out and that we've covered all the bases. Now what have we forgotten?" (Stewart Stokes; *Merrimack River Current*, April 24, 2003; www.townonline.com)

wholesale shift in investment strategy or risk tolerance could have a significant impact on equity and fixed income markets.

What could go wrong with implementing financial economics?

Although DB pension plans could be considered risk-tolerant, long-term investors, valuing pension liabilities as if they were bonds (and charging operations on an immediate basis for any gains or losses) will likely cause pension plans to become risk averse, short-term investors.

The result of such a change in emphasis would likely be an increase in the cost of DB pension plans. That, in turn, would likely cause an accelerated shift from DB plans to defined contribution (DC) plans, as plan sponsors try to control cost and risk exposure. Of course, DC plans also require continuing contributions. But since the full investment risk is transferred to participants, the plan sponsor's contributions for a DC plan are stable and predictable. On the other side of the coin, DC plan participants will likely invest in equities and expect equity-like returns to fund their retirement.

What would happen if DC plans should have adverse financial experience? In that case, many participants might need to defer retirement. This too has a potential cost for participants and employers that should not be ignored. After all, pension plans were created to allow employees to leave the workforce in a predictable and orderly way.

Notice that this scenario includes some major investment transitions—from today's equity-oriented pension plan strategies to bond-oriented plan strategies and then back to equity-oriented strategies for the DC participants.

Thus, it could all come full cycle. By ignoring the natural ability of most DB pension plans to absorb short-term risk, financial economics could end up shifting risk to the parties least able to bear it—the participants. The adverse effects could eventually flow back to the employer—to the detriment of all parties.

Financial economics may promote some helpful new thinking processes for pension plans, but a sudden change in financial practices, without a full analysis of potential outcomes, could hold some unintended consequences. ❧



Richard Q. Wendt, FSA, CFA, is a principal at Towers Perrin in Philadelphia, Pa. and is editor of Risks and Rewards. He can be reached at richard.q.wendt@towers.com.