

Guest Speaker

Pension Funds: Resisting the Mounting Pressures for a Shift to Conservatism

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The pension community now confronts powerful forces driving it toward conservatism. Although few in the industry yet realize the magnitude of the pressures for such a shift, they will become more aware as some plans make the awkward transition from fully funded to underfunded.

Financial Accounting Standards Board Statement No. 87 (FAS 87) and the more recent Omnibus Budget Reconciliation Act of 1987 (OBRA) key on the ratio of assets to the actuarial Accumulated Benefit Obligation (ABO). In so doing, they draw attention to volatility of the funding ratio, which now affects pension expense. In simpler times, actuarial smoothing hid this volatility from corporate management.

The impact of FAS 87 on corporate strategies for pension management might ultimately have proved modest, but OBRA affects cash flow directly. It will serve to sharpen corporate awareness of this volatility as underfunded plans are hit with sharply accelerated contributions and increased Pension Benefit Guaranty Corporation (PBGC) insurance premiums. At the same time, OBRA blocks contributions for the most comfortably funded plans; it will thus gradually force their funding ratios into a range where the risk of underfunding becomes a legitimate threat.

The Problem

Unfortunately, efforts to constrain volatility in assets, funding ratios or ex-

penses will predictably cut investment returns and boost the real cost of pension plans. The pension fund is an asset pool dedicated to discharge a long-term obligation. Over long time periods, returns on "risky" assets dominate those of less risky assets. Risky assets have not only produced superior median returns, but even the bottom quartile of their return spectrum wins eventually.

Pressure for conservatism will initially affect the "marginally funded" pension plans. They face a quadruple threat when the funding ratio declines:

- Under FAS 87, a new liability appears on the balance sheet.
- Under OBRA, any new unfunded liability must be amortized over five years instead of the 15 to 30-year amortization schedule that previously prevailed. *This is a direct cash flow consequence of underfunding.*
- Under OBRA, the PBGC insurance premium rises sharply for severely underfunded plans. This increase actually begins when the plan drops below approximately a 125 per cent ABO funding ratio, directly affecting cash flow and representing "lost money." The PBGC insurance premium, unlike an acceleration in pension contributions, does not remain with the plan.
- Under FAS 87, pension expense is sensitive to funding ratios and will climb as the funding ratio declines, depressing earnings.

No pension officer will wish to be tagged as responsible for a new liability on the balance sheet, new PBGC expense and newly accelerated pension contributions. The seemingly reasonable response will be a shift toward

conservatism—a shortening of the plan investment horizon, an emphasis on short-term risk and a concomitant transfer of investment interest from equity to fixed income. And as marginally funded pension plans become underfunded, there will inevitably be ripple effects among the better funded plans.

The response of pension managers to these pressures should be twofold. First, because a shift to a more conservative investment policy inevitably reduces long-term returns, hence increases the ultimate cost of pension benefits, the pension officer owes it to his company to resist this shift; he must begin now to educate corporate officers and the board of directors on the subtleties of pension risk management and the need to retain a total-return orientation. Second, the pension officer needs to understand the tools that can be used to control the downside risk in funding ratios and to erect the appropriate defenses if these pressures become inexorable.

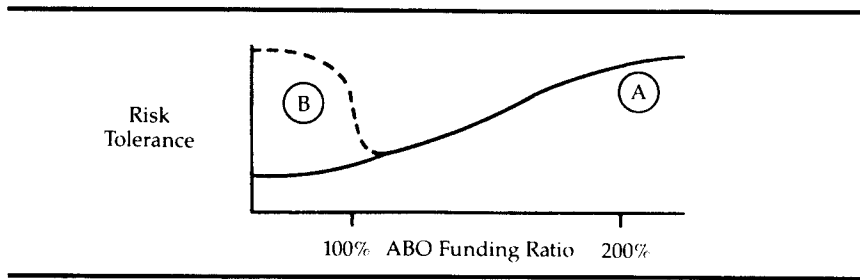
The Changing Shape of Risk Tolerance

One way to look at the potential impact of FAS 87 and OBRA is to explore pension risk tolerance at various funding levels, as illustrated in Figures A and B.¹ In the 1970s, one could argue that risk tolerance generally rose with funding status. With a well funded plan, the pension sponsor could be comfortable with an aggressive investment stance (Area A in Figure A). Poorly funded plans tended to be risk-averse, although one school of thought (rarely adopted) suggested that poorly funded plans had little to lose and should therefore invest aggressively (Area B in Figure A).

What do the adoption of FAS 87 and the passage of OBRA do to this risk

1. Footnotes appear at end of article.

Figure A Pension Risk Tolerance
Before 1987



tolerance profile?² They should have an impact on the risk tolerance of all plans. For the **marginally funded plan**, incentives for bearing risk may be sharply reduced (Area C in Figure B), because of the four ills visited upon the corporation that becomes underfunded.

For the **underfunded plan**, the dichotomy does not disappear. One might well argue that the underfunded plan has greater incentive than ever to bear risk in order to eliminate these four ills. But one could just as easily contend that there is a greater incentive than ever for underfunded plans to become conservative, as any increase in unfunded liability leads to direct and considerable cash flow consequences.

At **high funding ratios**, OBRA introduces one potentially significant change in sponsor risk tolerance: Tax-deductible contributions above a 150 per cent funding ratio are proscribed. Well-funded pension plans will thus gradually be forced below a 150 per cent funding ratio, into a range where concerns about the risks of underfunding should have greater impact on risk

tolerance. This capping of funding ratios may encourage more conservative liability-matched asset strategies to extend a contribution "holiday" as long as possible (Figure B, Area D). *More importantly, OBRA provides a very direct mechanism for reducing funding ratios gradually into a range where there is a powerful incentive to invest conservatively.*

Misspecification of Pension Liabilities

Both FAS 87 and OBRA have been built around an incomplete model of pension liabilities. Pension executives understand the problem, but accountants and legislators do not. Most of the consequences triggered by FAS 87 and OBRA are predicated on the ratio of assets to the ABO. Considering only current employees, years of service and salaries, the ABO does not allow for future inflation or for future growth in the real wages of employees. In short, it systematically understates true pension liabilities. Often this misspecification has a minor impact. But in the case of a company

with a relatively youthful work force, it can be severe.

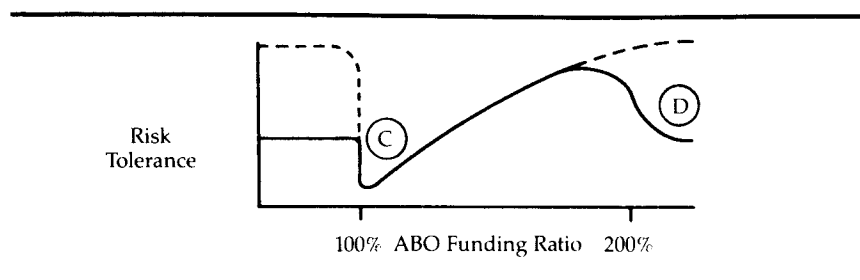
A recent *Harvard Business Review* article argues that the risk components of pension liabilities can be broadly characterized as:³

- interest rate risk (because the liability is the net present value of future obligations),
- productivity growth (which will tend to be reflected in the real wages of workers) and
- inflation (which increases terminal earnings).

The best risk-minimizing strategy will incorporate sensitivity to interest rate movements, inflation and real economic growth in proportions that mirror liabilities' exposure to these factors. No perfect hedge is possible. Nonetheless, younger workers carry liabilities that are sensitive to the real economy. Organizations with a youthful work force should therefore hold more equities or real estate, which should participate in that economy. Mature companies, with a high proportion of retired employees, where most of the liabilities are nominally defined, can best cover that pension risk with bonds.

Ironically, failure to understand real pension liabilities leads organizations that seek to insure pension surplus to increase their true risk.⁴ An organization adopting an immunized strategy with bonds duration-matched to liabilities may be in for a rude surprise some day when it reviews its pension funding. Imagine a sponsor with a barely adequate 100 per cent ABO funding ratio, who wants no risk of becoming underfunded. The immunized option might seem to protect the sponsor as long as timely, actuarially determined pension contributions are made. But what happens if economic strength or unexpected inflation forces wage increases above the actuarial assumption? The plan might become modestly underfunded, subject to adverse publicity and painful cash flow and balance sheet consequences. As both real economic growth and inflation demonstrate meaningful serial correlation, there is a daunting likelihood of a rude surprise several years in a row.

Figure B Pension Risk Tolerance
After 1987



On the Other Hand. . .

It is worth recalling that risk-bearing promises compensation. The strategy that permits funding ratios to fall can also allow them to rise. Willingness to bear risk frees the investor to pursue superior returns. What else is new?

This is. Because OBRA ultimately caps funding ratios by blocking pension contributions for the well-funded plans, they must and will ultimately experience the downside of FAS 87 and OBRA. But that uncertain funding ratio risk means they cannot predict when FAS 87 and OBRA will have their impact on pension management strategies. That impact might come sooner or later, depending on the capital markets. The good news is that hand-wringing about the risk of underfunding is premature for the vast majority of pension sponsors. Funding ratios may rise. Even if they do not rise, most sponsors boast funding ratios so healthy that there is no immediate risk of underfunding.

Barring any legislative fiddling with OBRA, however, shifts to a less healthy funding stance are inevitable. Coincident shifts to conservatism will inevitably occur sooner or later. They will arrive well before the average pension funding ratio is anywhere near 100 per cent. The reason is simple. About 8 per cent of pension sponsors have funding ratios between 100 and 120 per cent. If interest rates were to fall 100 basis points, most of these pension sponsors would be somewhat underfunded. There will be just enough upheaval at these companies (and potentially just enough pension executive terminations) to cause everyone to take notice. Well-funded plans may consider locking in their good fortune to avoid risk of suffering the same sorry fate. Others will face some pressure to minimize their risks. In short, pension plans cannot rely on the symmetry of risk to spare them from moving in a conservative direction eventually.

Defenses Against Inappropriate Asset Strategies

The sponsor community considers conservative asset strategies ill-suited to the needs of pension funds. It is thus prone to dismiss such strategies.

Nonetheless, the reality is that mounting pressures encourage a more conservative stance. While their influence remains modest today, with most plans comfortably funded, the pressures will grow as OBRA's contribution cap erodes healthy plans. Investment horizons will shorten, and long-term returns will shrink. With long-term liabilities to discharge, it doesn't make sense to manage pension assets to dampen quarterly funding ratio volatility. Yet, to some extent, this will happen.

Sponsors view this as a serious issue, and are looking for ways to address the challenge without radical restructuring and without sacrificing long-term returns. Most avenues for reducing the volatility of funding ratios will also reduce long-term returns. But there are some exceptions. Each of these strategies for controlling funding ratio volatility merits exploration.

Duration Control

The typical pension fund has real liabilities whose duration exceeds that of its assets, even though the difference is less than the ABO suggests. A handful of pension sponsors have embraced strategies devised by the investment banking community to address the situation.

One such response is to **immunize**. By shifting assets into bonds, the mismatch between the duration of the assets and the duration of the liabilities can be corrected. This approach has two grave drawbacks:

- Because bonds produce lower long-term returns than equities, immunization reduces return and ultimately costs real money when funding pension obligations.
- Immunized assets cannot rise with inflation or real economic growth, each of which increases true liabilities. For the firm with a marginal funding ratio, matching assets with the true economic liability may be less politic than reducing the ABO funding volatility ratio. For this firm, the pressure to match assets to the ABO liability through immunization may be overwhelming.

While immunization can be used to prevent any risk of becoming underfunded, any changes in the magnitude of the obligation, as reflected in the ABO, must be coupled with the appropriate contribution in order to avoid risk of underfunding. In other words, if any element of the pension promise is adjusted, a contribution corresponding to the resulting increase in pension liabilities must be made immediately, rather than amortized. An immediate contribution is required, for example, if retirees are given ad hoc cost-of-living adjustments, if employees receive raises, or if the formula by which pension benefits are calculated is sweetened. An immunization strategy linked with this immediate contribution policy will serve to protect a pension fund from underfunding, but at an obvious and considerable cost.

More recently, investment bankers have argued for **extending asset duration** by replacing some or all of the existing bonds with long-duration, zero-coupon Treasury securities ("strips"). This simultaneously reduces the duration mismatch while increasing the long-term expected reward. Furthermore, it avoids disturbing equity assets. This is an important advantage, as the liability for most pension funds will be sensitive to economic factors that can be matched only by equity-oriented assets. As we have seen, immunization actually serves to impair the relation between assets and real liabilities.

But extending bond durations has its own disadvantages. Any potential benefits from active management disappear, and yields of long-duration "strips" are less than those of long-term government bonds. Finally, as interest rates change, the liabilities' duration changes apace, while the durations for strips are fixed by definition.

Suppose you are bearish on bonds, believing that a duration shift is untimely. Clearly, when you're right, such a move would be better timed at subsequent higher interest rates. Whether rates rise or fall, however, liabilities and duration-matched assets will move in tandem. A decision to defer extending bond durations is obviously a highly risky active bet.

An alternative to matching durations is to use futures to **synthetically extend duration**. This option is equivalent to extending the underlying bonds while gaining three additional advantages:

- The synthetic duration match offers better returns. Bond futures are priced off the "cheapest-to-deliver" long-term Treasury, which often carries the highest yield on the curve. You can generally reap the highest internal rate of return available on the Treasury yield curve. In the past, Treasury bond futures have done modestly better than even this, because of persistent underpricing of futures.
- The synthetic overlay permits the sponsor to retain active managers for the fixed income portfolio. The bond overlay is invisible to those other managers, and in no way intrudes on their management strategies.
- Derivatives permit adjustment of duration very quickly and inexpensively. This can be important when marked changes in rates alter liability duration.

Surplus Insurance

The notion of surplus insurance is increasingly promoted as a means of dealing with risk of a shortfall. After the events of October 1987, we hope that the investment community will have the wisdom to think twice before engaging in any mechanistic trading strategies that have no link whatsoever with fundamental notions of value. The cost of surplus insurance is high, with low mean and median returns compared with a more conventional investment strategy. The median expectation is even lower than that of immunization, although it permits some stake in rising equity markets.

If surplus protection could be implemented in the real world, then it might indeed be a strategy worth considering. However, the academics who have designed portfolio insurance, and now surplus insurance, dismiss some critical variables. The markets *do not* provide endless liquidity. Transaction costs *are not* negligible. Value in-

vestors *did not* react instantaneously to the computers that triggered trading on these strategies. *We cannot assume that value investors will provide the liquidity for these mechanistic strategies in the future.* Indeed, surplus insurance, implemented in sufficient size, might, like its discredited predecessor, exert a powerful destabilizing force on the market and, eventually, on the capital-formation system.

This said, surplus insurance is a profoundly appealing product. It promises to forestall ABO funding ratio shortfalls while allowing some participation in rallying equity markets. Simultaneously, it affords a disciplined means of adopting policy asset mix to dynamic markets. It accomplishes its objective at a modest projected cost. October 19 showed us that the cost of certain insurance schemes could be several hundred basis points greater than expected. To be fair, however, that surprise was just one of many thrust on us on that awful day.

Surplus insurance will become increasingly popular as the implications of FAS 87 and OBRA make their marks on the pension world. On balance, we believe that surplus insurance's cost will exceed that estimated by its proponents, but not dramatically. Even though its intuitive appeal makes its acceptance by the market virtually certain, we believe it is not the right vehicle for most pension investors. Even a modest give-up in return, compounded over many years, adds up.

Diversifying with "Low Covariance" Assets

A final strategy for dealing with funding ratio volatility is to place more emphasis on "low covariance" assets, which offer the prospect of increased return on the total portfolio without greater risk. A number of institutional investors have pursued this avenue, with well-publicized success. Because global securities and real estate, among other alternatives, are not highly correlated with our domestic markets, moderate use of these assets has tended to reduce pension asset volatility. This, in turn, may permit the pension sponsor to commit more funds to equities, further increasing expected return. This strategy for risk

management offers compelling advantages and merits careful consideration.

Accountants value real estate and venture capital on an appraisal basis, understating their true volatility. In the world of FAS 87 and OBRA, this suggests another way to moderate the ostensible volatility of funding ratios. Greater use of appraisal-based assets can permit management of total return with only a nod to arbitrary accounting definitions of funding health.

All these strategies possess merits, and all will gain their adherents. The pension executive must understand the options thoroughly and frame the right decisions for the time when others' concerns over funding ratios force a debate over policy. The best of these strategies—extending asset duration and employing alternative investments—have the potential to reduce risk without sacrificing return. They deserve a spot on the top of the menu.

Working with a Surplus-Sensitized Board

A pension plan with a 110 per cent funding ratio, which falls to 90 per cent after a bond rally or changes in the pension contract, faces some unpleasant consequences—a new balance sheet liability, lower earnings and higher contributions, exacerbated by elevated PBGC insurance costs. Boards of directors are likely to find such developments disconcerting.

The process of educating boards of directors should begin now, in anticipation of the challenge, rather than in reaction to unpleasant surprises. The following key issues should be conveyed to anyone who can affect pension management policy:

- Pension plan liabilities represent long-term, legally enforceable promises. Using an ABO matching strategy to control funding ratio volatility is misguided in the context of a long-term liability.
- FAS 87 and OBRA are the creatures of accountants and lawyers. They focus on the interest sensitivity of the pension plan. By ignoring the fact that the liabilities can grow with inflation and with real economic growth, these legislative and accounting changes encourage the use of asset classes

that are sensitive only to interest rates. Focusing on controlling the funding ratio, so defined, may actually result in increasing pension risk for the liabilities associated with employees who are far from retirement.

- Efforts to contain volatility, with few exceptions, forfeit long-term return and thereby boost the long-term cost of the pension plan.
- Mechanistic strategies designed to insure a surplus will result in a "buy-high/sell-low" asset allocation process. They control the risk of unacceptable funding ratios at the cost of reducing long-term return.

Of course even in the case of an amply funded plan, a board of directors may be inclined to lock in a long-term pension contribution holiday. This latter inclination stems from asymmetry in risk and reward: The benefits of a soaring funding ratio are limited when pension contributions are already halted. Nevertheless, the pension executive should be prepared to discuss alternatives that might moderate funding-ratio volatility. Boards are collections of people. Surprised, they could understandably be inclined to ferret out scapegoats. The prepared pension executive will survive their scrutiny.

Footnotes

1. This risk tolerance framework was originally introduced in M.L. Leibowitz et al., "The Surge in Pension Fund Surplus" (Salomon Brothers Inc, New York, September 1987). See also Leibowitz, R.D. Arnott, L.N. Bader and R. Henriksen, "Redefining the Asset Allocation Decision" (Salomon Brothers Inc, New York, November 1987).

2. See L.N. Bader and R.D. Arnott, "Pension Funding Under The Omnibus Budget Reconciliation Act of 1987" (Salomon Brothers Inc, New York, January 18, 1988).
3. See R.D. Arnott and P.L. Bernstein, "The Right Way to Manage Your Pension Fund," *Harvard Business Review*, January/February 1988.
4. See K.P. Ambachtsheer, "Pension Fund Asset Allocation: In Defense of a 60/40 Equity/Debt Asset Mix," *Financial Analysts Journal*, September/October 1987.

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