

Reforming. pension reform

By Frank J. Fabozzi and Ronald J. Ryan

America faces a retirement crisis. The first step in pension reform is properly valuing liabilities — and that's something the Pension Funding Equity Act of 2004 utterly fails to do.

In April 10 of last year, President George W. Bush signed the Pension Funding Equity Act to give U.S. companies some “relief” from burdensome pension contributions and, as the act’s summary stated, “protect the retirement benefits of millions of American workers and help ensure that their pension benefits will be there when they retire.”

The relief came in the form of a higher permissible discount rate, the critical number that companies use to value their pension liabilities — that is, the present value of their future pension obligations. Under the applicable formula a higher discount rate results in lower liabilities. A rule of thumb is that for every 50-basis-point increase in the discount rate, the present value of pension liabilities decreases by 6 to 7.5 percent (assuming those liabilities have a 12-to-15-year average duration). The pension act should allow companies to reduce their pension contributions by more than \$80 billion over 2004 and 2005 combined.

That may be a short-term boon to companies, but, unfortunately, the pension act solves none of the serious problems plaguing pension funding — and it may have created new ones. Companies will not be required to provide adequate information about the financial health of their pension plans. And critically, the act promotes reliance on the wrong standard for determining liabilities, guaranteeing that for private pension plans they will continue to be understated. Many companies no doubt felt that they needed relief from

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"And they lived happily ever after"

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onerous pension contributions. But by permitting the mispricing of pension liabilities to persist, Congress has avoided the real issue and is in fact storing up trouble.

Indeed, the crisis facing defined benefit pension plans threatens the solvency of corporations, cities, states and even the U.S. government. The magnitude of pension underfunding suggests that it poses the greatest financial danger since the savings and loan collapse of the early 1980s. At the end of 2003, corporations' pension underfunding, or deficit, was close to \$250 billion, officially. We estimate, however, that if pension liabilities were assigned market values, as they properly should be, then the U.S. corporate pension deficit would probably be double that.

Nor does the pension crisis exist only in the corporate realm. Consulting firm Wilshire Associates calculates that the "official" deficit for state pension funds amounts to \$94 billion. But here, too, if the liabilities were marked to market, the deficit would swell — to more than \$1 trillion in the case of all state and local funds, according to Morgan Stanley & Co.

In essence, corporate and public plan sponsors, abetted by regulators and accountants, have systematically underestimated pension liabilities, producing the crisis we find ourselves in today. At the root of the problem is the accounting and actuarial treatment of pensions, which can inspire perverse behavior. In making pension funding decisions, corporate managers may give liabilities short shrift. Their primary concern, naturally, is with the impact on earnings, and because pension contributions show up as an expense on the income statement, managers seek to minimize or even eliminate them. Offsetting the pension cost is the assumed return on pension assets, or ROA. And that's where the trouble starts.

Generally accepted accounting principles allow managers to forecast pension ROA a year in advance. If managers know what their pension expense will be a year out, they can perform a simple calculation to determine what ROA they will need to forecast to wash out this troublesome expense. Even better, if the managers predict an ROA that exceeds the pension cost breakeven point, they can create pension "income" rather than expenses, resulting in enhanced earnings.

Consequently, forecast ROA can lead to a distortion of economic value. A 2002 study, "The Magic of Pension Accounting," by Credit Suisse First Boston analysts David Zion and Bill Carcache, estimated that if Standard & Poor's 500 index companies had replaced the ROA projections for their pension plans with the plans' actual performance, the companies' aggregate reported earnings would have declined 69 percent in 2001 and 10 percent in 2000. For 14 industry groups and for 82 S&P 500 companies, 2001 earnings would have been halved; for nine of the 14 industry groups and 41 of those 82 companies, earnings would have gone from a profit to a loss. Thirty of the S&P 500 companies would have seen their 2001 earnings reduced by more than \$1 billion, and seven would have experienced a drop of more than \$5 billion.

The CSFB analysts further estimated that the aggregate return on equity for S&P 500 companies in 2001 would have been only 2 percent, rather than the 8 percent figure arrived at using GAAP. For 40 of the 360 S&P 500 companies with defined benefit plans, 2001 ROE would have gone from positive to zero or negative.

But there is a check on ROA-forecast abuses. Pension accounting rules permit companies to make rosy ROA predictions for stocks and most other assets, provided that external auditors validate those estimates on the basis of historical returns for those asset classes. The only exception is bonds, for which the forecast ROA is based on current yields to maturity, not historical returns.

This begets further complications. Modest bond yields can undercut a pension's overall forecast ROA, threatening pension income and thus placing a potential drag on company earnings. No wonder companies continually reduced their bond allocations in the late 1990s and early 2000s as interest rates declined to historical lows. Concurrently, according to *Pension & Investments'* annual asset allocation survey, companies were allocating a bigger proportion of their pension portfolios to equities as well as to hedge funds

and other alternative investments, whose historical returns, or subjective market values (in the case of private equity and real estate), justified higher ROA forecasts.

Starting in about 1990 the yield of ten-year Treasuries fell below 8 percent. Yet according to a 2003 study by CSFB's Zion and Carcache ("The Magic of Pension Accounting, Part II"), the median forecast ROA for the S&P 500 companies exceeded 9 percent for every year from the early 1990s until 2001, falling to 8.75 percent only in 2002. Hence the assumed return on bonds was less than that of most companies' forecast ROA.

Pension funds that increased their bond allocations would just subject their other assets to more stress to rationalize their forecast ROA, giving them less wiggle room for earnings enhancement. Consultants soon ceased to promote bonds to pension funds in their asset allocation models.

If anything, the gap between bond yields and forecast ROA has grown wider since 1990. The yield on ten-year Treasuries has ranged from 3.11 to 5.52 percent since 2000. By contrast, note Zion and Carcache, the median forecast ROA for the pension plans of S&P 500 companies was 8.75 percent for 2002, 9.20 percent for 2001 and 9.36 percent for 2000.

WHAT HAPPENS IF THE ACTUAL ROA DIFFERS FROM the forecast one? The difference gets amortized, usually over the life of the pension plan — typically, 15 years. The accountants' label for this adjustment on the income statement is "actuarial gain/loss." An actuarial gain from pension income augments corporate earnings; an actuarial loss reduces them. The accounting profession invented this smoothing exercise to accommodate companies worried about excessive earnings volatility, which alarms investors.



On the surface, this approach sounds perfectly reasonable. In recent years, however, the actuarial gain/loss adjustment has been blown out of proportion by the gulf that has developed between companies' forecast and actual ROAs. The 2000–'02 bear equity market deserves much of the blame, but managers' tendency to forecast overly optimistic ROAs is an important contributing factor.

We estimate, based on the typical asset allocation from *P&T's* annual survey — 5 percent cash, 30 percent bonds, 60 percent U.S. equity, 5 percent international equity — that the average actual ROA for S&P 500 companies was –2.50 percent in 2000, –5.40 percent in 2001 and –11.41 percent in 2002. Quite a contrast to the forecast ROAs.

The impact of this gap has been dramatic. Zion and Carcache's 2003 study showed that S&P 500 companies' cumulative unrecognized actuarial gains of \$144 billion as of the end of 2000 had been transformed into a cumulative actuarial loss of \$357 billion by the end of 2002. General Motors Corp. announced in the summer of 2003 that its cumulative actuarial loss amortization would cost the automaker \$1.7 billion per year out of earnings for the next 20 years.

Investor Warren Buffett had this to say about pension accounting in 2001: "Unfortunately, the subject of pension [return] assumptions, critically important though it is, almost never comes up in corporate board meetings. . . . And now, of course, the need for discussion is paramount because these assumptions that are being made, with all eyes looking backward at the glories of the 1990s, are so extreme. I invite you to ask the CFO of a company having a large defined benefit pension fund what adjustment would need to be made to the company's earnings if its pension assumption was lowered to 6.5 percent. And then, if you want to be mean, ask what the company's assumptions were back in 1975 when both stocks and bonds had far higher prospective returns than they do now." Buffett went on to warn that too high an ROA risks litigation for a company's CFO, its board and its auditors. Yet overestimating ROA is a hard-to-resist temptation, for the reasons we've shown.

PENSION MANAGERS ARE INCLINED TO EMPLOY AS their discount rate for pension liabilities the highest quoted interest rate that will pass muster with the Internal Revenue Service (for funding purposes) and also with GAAP (for accounting purposes). Traditionally, GAAP accounting has relied on Moody's AA-rated long corporate bond yield. Unfortunately, this benchmark belongs in a financial museum: Moody's AA corporate index was designed in 1929 and consists of only long-maturity industrials and utilities — about 16 bonds in all. Moreover, the index has no finance issues (which make up more than half of the corporate bond market), no zero-coupon bonds and no term structure or yield curve for the Moody's corporate index. It is far too narrow a rate for pricing pension liabilities.

The Pension Funding Equity Act of 2004 creates problems of its own. It stipulates that companies must use as their discount rate for funding purposes a composite consisting of the weighted

average over the past four years of three long-corporate-bond indexes, from Citibank, Lehman Brothers and Merrill Lynch & Co. How a weighted average of the past four years is supposed to represent the current yield environment is a mystery. Moreover, the notion that a single discount rate could value an entire cash flow schedule — which is what pension liabilities represent, after all — is inconsistent with the principles of financial valuation. Nor do any of the composite's three indexes include zero-coupon bonds, the instruments needed to correctly value

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pension liabilities (especially for durations longer than 15 years).

The Securities and Exchange Commission itself has recognized these discount rate inconsistencies. In a 1993 letter to companies, the SEC recommended seeking guidance from Financial Accounting Standards Board statement No. 106, paragraph 186 in setting the discount rate for pensions. This paragraph says: "The objective of selecting assumed discount rates is to measure the single amount that, if invested at the measurement date in a portfolio of high-quality debt instruments, would provide the necessary future cash flows to pay the accumulated benefits when due. Notionally, that single amount . . . would equal the current market value of a portfolio of high-quality zero-coupon bonds whose maturity dates and amounts would be the same as the timing and amount of the expected future benefit payments."

FASB defines "high quality" as encompassing AA and AAA corporates. But because zero-coupon corporates hardly exist and because the longest duration on corporate coupon bonds is about 15 years, FASB permits companies to arrive at a discount rate by extrapolating from the current yield curve as far into the future as necessary.

A further source of confusion here is that GAAP allows companies to use life insurance company annuity rates as the discount rate to affix a value to pension liabilities. Annuity rates, however, are negotiated, so not all pension plans have access to the same favorable rate. A \$200 million plan, for instance, would get a higher rate than a \$5 million plan, but a \$1 billion or bigger plan might well find it impossible to get an annuity rate at all — none are executed for such large amounts. As the top 100 corporate defined benefit plans all have more than \$100 billion in assets, this methodology doesn't seem like an option for them.

The inconsistency in liability measurements is underscored by the fact that state and municipal pension funds rely on yet another approach. Public plans follow the Actuarial Standards Board's ASOP 27, section 3.6, which specifies that the appropriate discount rate for public plan liabilities is the same as the investment return assumption, or ROA.

This makes no economic sense. Considering that most public plans' ROA assumptions are about 8 percent and high-quality ten-year bonds yield roughly 5 percent, ASOP 27 allows for discount rates that are about 300 basis points too high. Assuming an average duration of ten to 15 years for public plan liabil-

ities, those liabilities are undervalued by 30 to 45 percent. In other words, public plans that may have thought they were fully funded are only 55 to 70 percent funded when their liabilities are marked to market, as they should be.

Regrettably, this is a common predicament for both state and municipal pension funds. Yet many continue to increase their retirement benefits, when they simply cannot afford to do so. As pension actuary Jeremy Gold of Jeremy Gold Pensions, in New York, points out in a 2002 working paper, “Risk

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Transfer in Public Pension Plans,” today’s generosity toward civil servants will burden tomorrow’s unsuspecting taxpayers.

A fundamental misconception may be at work here. Many public and private pension plans have been misled into believing that the discount rate on their liabilities is their investment hurdle rate. Therefore they imagine that if their returns surpass their hurdle rate, they will automatically create a surplus.

This is just not so.

The discount rate is a price, not a return. The growth in the present value of liabilities is as volatile as a long-bond portfolio, because it depends upon changes in interest rates. Liability growth can be high if rates decline year-over-year, as is typical during a bull market. Or growth can be negative if rates rise year-over-year, as in a bear market. Yet plan sponsors will never know the value of liabilities until they are priced at the market, both accurately and frequently.

Indeed, it is useful to think of the growth rate of the present value of liabilities as the liability “return.” This is the plan sponsor’s true benchmark, or hurdle rate — not the liability discount rate. But little discussion takes place in corporate board rooms about liability returns. And in establishing objectives for money managers, plan sponsors focus on generic asset-class benchmarks. Those may have little to do with the growth in liabilities — that is, the liability returns.

THE CORRECT APPROACH, IN OUR VIEW, IS FOR A pension to generate a custom benchmark that is based on its liabilities’ cash flow structure and properly discounted using market interest rates.

This may be an unpopular recommendation, as it could force companies to make up pension funding shortfalls. Managers, of course, don’t want to deploy cash to what they see as noncore functions, and pension contributions represent real cash outlays. Corporations would prefer a pension holiday — a break from making any pension contributions at all.

The current rules are relatively congenial for them. For funding purposes, the IRS decrees that contributions must be based on pensions’ asset-liability funding ratio. To compute the liability, the agency employs an equally weighted blend of three corporate bond indexes whose returns it weights over four years: 40 percent for the current year, 30 percent for the past

year, 20 percent for the year before that and 10 percent for the year before that. But the IRS also allows a “corridor” of 90 to 120 percent of the resulting funding ratio to give companies ample maneuvering room.

Given how volatile interest rates are, a blended concoction like this can never represent an accurate pricing of liabilities. In a bull market the formula would always produce too high a rate, and vice versa in a bear market. Moreover, that wide corridor in effect protects pension plans from having to make contributions unless they’re seriously underfunded.

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What’s the solution?

Suppose you were asked to manage the liabilities of a defined benefit plan and told to fund them at the lowest possible cost and risk. You then learn that these liabilities are priced at a single discount rate, which is not a market rate, and you discover that you receive reports on their status just once a year — and months late. Furthermore, you quickly realize that you can’t control the liabilities the way a portfolio manager controls assets.

Could you manage the pension fund’s assets under these circumstances? Could you benchmark your performance against the S&P 500 if the index was reported annually and was months delinquent — and didn’t reflect market prices, to boot? Could you oversee a portfolio you never saw? Of course not. Yet that is effectively how the liability side of a pension plan is made to operate.

Until pension liabilities are priced at the market, pension funds run the risk of an asset-liability disconnect. Liabilities should be priced off of a market yield curve. An ironclad pension accounting rule should be: If you cannot buy it, you cannot use it as a discount rate. Start with the Treasury zero-coupon yield curve. (So-called Strips are the only high-quality zero-coupon bonds that can be purchased in quantity for every maturity.) Use this yield curve to build custom liability indexes for each plan. And crucially, do mark-to-market accounting to price liabilities.

Once a plan sponsor creates a custom index as a benchmark for liabilities, it can properly manage assets. Asset allocation and performance measurement models will be able to compare the growth and risk behavior of assets and liabilities by term structure. If assets are not measured against liabilities, they are likely to have the wrong index objective. The upshot: the wrong risk-reward behavior.

As matters stand, plan sponsors manage assets with reference to generic asset indexes, not specific liability indexes. This can create a preposterous situation: If you outperform the S&P 500 and fall short on the liability side, you lose. The Pension Funding Equity Act of 2004 is intended to, as the bill summary puts it, “strengthen defined benefit pension plans in the short term while the Education & the Workforce Committee takes a broader look at the defined benefit system and the issues that affect the retirement security of American workers.”

That broader look should begin right away. **ii**