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Managing Risk For Frozen Pension Plans

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Developing an Investment Strategy for Frozen Plans

A recent report by the Pension Benefit Guaranty Corporation* states that 9.4% of defined benefit plans are frozen. While many of the affected plans in the PBGC's report had fewer than 100 participants, recent actions by Verizon, IBM and GM to freeze their defined benefit plans underscore the increased popularity of freezing among large companies. Although the motivations and objectives of sponsors vary, most wish to eliminate the risk and volatility of DB plans. Freezing eliminates the accrual of future benefits, and often prompts a collective sigh of relief within the organization. But it should also generate new questions:

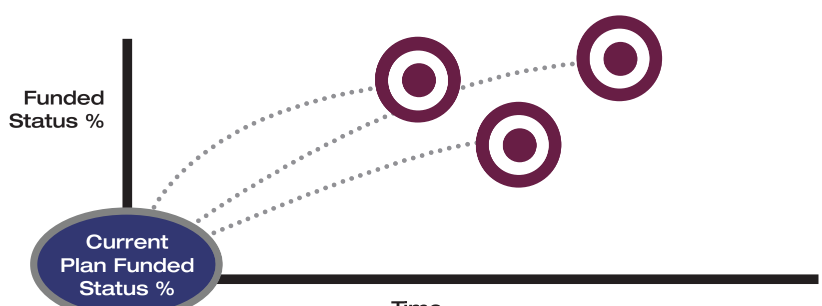
- Have we really eliminated plan risk and volatility?
- Is termination our end goal? If so, how and when do we terminate?
- How do we address our funding gap?
- Should we change our asset allocation?

A frozen plan often leads management, analysts, and others to believe that the risk of the defined benefit plan has been mitigated, so it is time to move on to other more important issues. **But freezing a plan does not necessarily reduce a sponsor's financial risk significantly.** In fact, freezing a plan requires more, not fewer, decisions from the sponsor.

Those decisions and their implementation can present the sponsor with a wide range of possibilities. In this paper, we offer a road map to help sponsors make the best choices for frozen pension plans.

Termination Liability: A Higher, Moving Target

For most sponsors who freeze their DB plan, termination of the plan is the ultimate goal. In many cases, though, the termination goal is not immediately attainable, due to underfunding and cash cost. While the desired outcome may vary, each sponsor of a frozen plan must develop a strategy that begins with the calculation of the termination liability, and the recognition that over time it will be a moving target that requires close monitoring.



Source: Mellon Asset Management

*Pension Benefit Guaranty Corp.: *An Analysis of Frozen Defined Benefit Plans* Dec. 21, 2005.

Road Map For Plan Termination

The development of an investment strategy to accomplish pension plan termination is a **dynamic** and **complex** process

STEP 1:
Calculate **Market Value of Liabilities** (MVL)

STEP 2:
Establish objectives and risk tolerance
- Termination **time horizon**
- **Contribution budget**
- **Risk tolerance**
  - ERISA required contributions
  - Financial statement impact

How a plan sponsor responds to this challenge will define its success in managing toward termination. The plan sponsor needs to understand that there are many required steps, and managing a frozen pension plan is a dynamic and complex process.

Plan Termination Costs

Many plan sponsors are surprised to discover that the costs of terminating a defined benefit plan may be significant. The reasons are many, often mired in actuarial and accounting convention. But there is a simple explanation – lower discount rates.

Traditional plan termination involves payments to the individual participants (lump sum settlements) or a transfer of the liability to an insurance company. An insurance company assumes full responsibility for paying participants their retirement benefits in accordance with the plan provisions. For most plans, these payments will extend upwards of 75 years from the date of termination.

In order to protect itself from market shifts, the insurance company discounts the liabilities using very conservative assumptions. These "market" rates are invariably lower than the rates used for actuarial or financial statement reporting. The lower rates mean greater termination costs.

Road Map for Plan Termination

Some plan sponsors may be successful in reaching termination with little to no planning. It is important to point out that this will be the exception – not the rule.

Waiting for interest rates to rise, contributing the ERISA minimum, or taking increased portfolio risk are examples of strategies that may make plan termination unlikely.

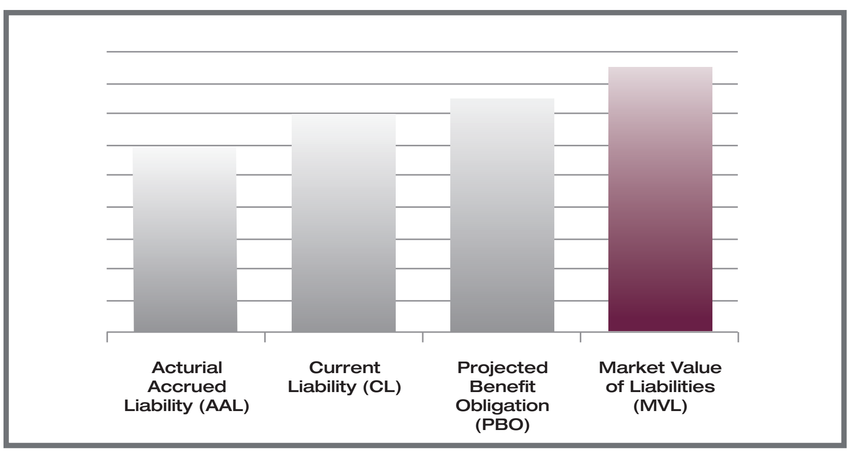
Our five-step process for mapping the road to termination addresses the challenges sponsors face in frozen plan management.

STEP 1:
Calculate Market Value of Liabilities (MVL)

The cost of terminating a pension plan cannot be found in any actuarial report, financial statement or government form. A plan may appear to be fully funded on an accounting or ERISA basis, but may be underfunded on a market-valued plan termination basis.

Market Value of Liabilities (MVL) can be used to approximate plan termination costs. MVL, a seldom used but increasingly important measure, is calculated using U.S. Treasury spot rates, similar to rates used by insurance companies when developing termination cost. MVL approximates what it would cost a sponsor to transfer plan liabilities in the market. It results in the highest liability valuations of the methods shown below because Treasury spot rates are lower than the high-grade corporate rates used in other measures.

Alternative Liability Measures



Source: Mellon Asset Management

STEP 3:
Based on objectives and risk tolerance, select **various strategic asset allocations** to be modeled

STEP 4:
Use **ALM model** to forecast:
- **Probability** of MVA > MVL
- Range of asset **surplus** or **shortfall** at termination
- Contribution requirements
- Financial statement impact

STEP 5:
Select **optimal strategy** by evaluating ALM model output. **Monitor and adjust** as needed

STEP 2:
Establish objectives and risk tolerance

A plan's investment strategy must be aligned with a targeted time frame for terminating. Terminating a plan in one year requires a very different investment strategy than termination in five years. A target date for termination, or some other desired end state, should be established immediately, as we recognize that the termination liability is a dynamic target that requires a comprehensive solution. Sponsors must establish a contribution budget, especially in the case of underfunded plans. Ongoing contributions will be essential to achieve the desired outcome.

During Step 2, sponsors must determine their sensitivity to future plan funded status levels, ERISA contribution requirements, pension expense, and balance sheet impact. Every sponsor has a unique degree of risk tolerance for each of these financial measures. For example, private companies may be more sensitive to required contributions, but large public companies may be more concerned about pension expense.

STEP 3:
Select various strategic asset allocations

At this point, the liabilities have been valued, the time horizon set, the contribution budget established and risk tolerance assessed. Attention now shifts to the selection and modeling of investment portfolios.

In Step 3, we look at the current asset allocation as well as a number of other alternative asset allocation strategies.

STEP 4:
Use ALM model to forecast

The strategic asset allocations developed in Step 3 are integrated with the plan liabilities in Asset/Liability Management (ALM) models. ALM models are used to forecast future interest rate levels, asset returns, plan assets and liabilities. Stochastic ALM models use Monte Carlo simulation to generate thousands of future paths, accounting for correlated movement of economic variables, such as interest rates and asset returns.

ALM models can assess the likelihood of having sufficient assets for plan termination and identify the range of asset surplus or shortfall. These models also forecast future contribution requirements, pension expense, and other financial statement impacts.

STEP 5:
Select strategy, monitor and adjust

Multiple trials of various strategic asset allocations lead to the selection of an optimal strategy based on the ALM output, plan risk tolerance and plan objectives. The implementation of this strategy allows the plan sponsor to establish a deliberate and measurable process for transitioning its frozen plan to termination.

Sponsors should be aware that, while monitoring active managers against appropriate asset-only benchmarks is prudent, plan-level investment strategies require customized liability benchmarks to determine the success of the investment strategy against plan-specific liability growth.

Changes in the time horizon, end-state objectives, risk tolerance, capital market expectations, regulatory environment or other factors require continuous monitoring, and adjustments may be needed.

Case Study

As an example of how an ALM model can be used to tailor an investment strategy for frozen pension plans, consider the case study on the right page. Please see overleaf for analysis.

For more information on how ALM can be used to aid pension plan management, please contact Peter Austin, Executive Director, Mellon Asset Management, at 412 234-4474.

Hypothetical Case Study — Using an ALM Model to Develop an Investment Strategy for Frozen Plans

Liabilities	in Millions	Funded Status
Actuarial Accrued Liability	$220	109%
Current Liability	$254	94%
Projected Benefit Obligation	$270	89%
Market Value of Liability	$300	80%

Assets	in Millions
Market Value of Assets	$240
Annual Future Contributions	$10

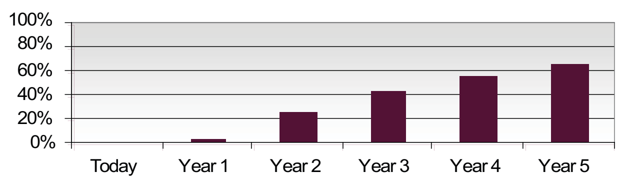
All calculations based on Mellon's internally developed capital market assumptions and Mellon's proprietary ALM stochastic forecasting model.

Portfolio Strategy 1 (Traditional)

Benchmark	Allocation
Russell 3000	50%
MSCI EAFE	10%
Lehman Aggregate	40%

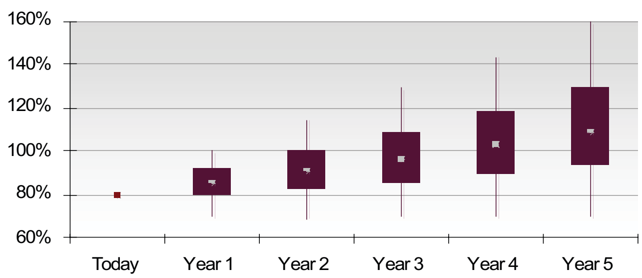
Portfolio Characteristics	%
Expected Return	7.16%
Standard Deviation	12.24%

Probability of MVA exceeding MVL



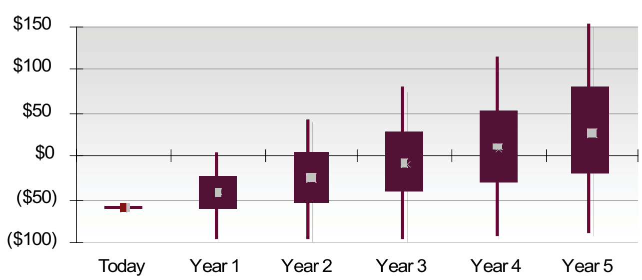
Today	Year 1	Year 2	Year 3	Year 4	Year 5
0%	5%	28%	43%	56%	65%

Funded Status Ratio (MVA / MVL)



Percentile	Today	Year 1	Year 2	Year 3	Year 4	Year 5
95%	80%	100%	115%	129%	143%	160%
75%	80%	92%	101%	109%	118%	129%
50%	80%	86%	92%	97%	104%	110%
25%	80%	80%	82%	85%	90%	93%
5%	80%	70%	69%	70%	70%	70%

Asset Surplus or (Shortfall) - in Millions



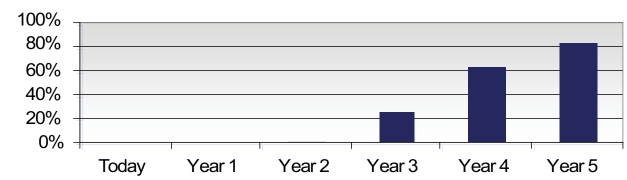
Percentile	Today	Year 1	Year 2	Year 3	Year 4	Year 5
95%	(60)	0	39	75	110	149
75%	(60)	(22)	3	26	51	80
50%	(60)	(42)	(25)	(8)	11	26
25%	(60)	(62)	(54)	(43)	(30)	(19)
5%	(60)	(98)	(97)	(98)	(93)	(90)

Portfolio Strategy 2 (Customized)

Benchmark	Allocation
Russell 1000	10%
Russell 2000	10%
Absolute Return	10%
Customized Long Duration Bonds	70%

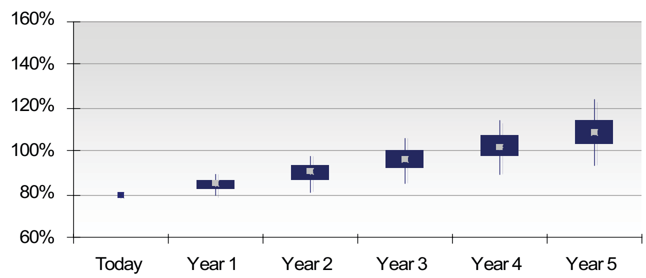
Portfolio Characteristics	%
Expected Return	6.32%
Standard Deviation	5.80%

Probability of MVA exceeding MVL



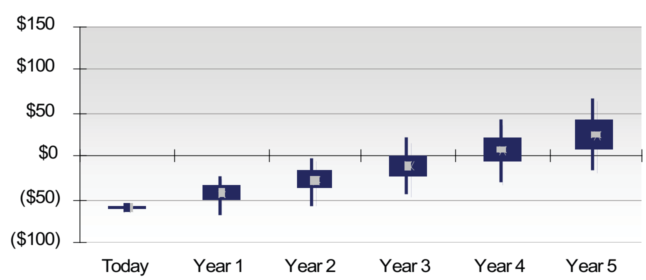
Today	Year 1	Year 2	Year 3	Year 4	Year 5
0%	0%	2%	27%	64%	84%

Funded Status Ratio (MVA / MVL)



Percentile	Today	Year 1	Year 2	Year 3	Year 4	Year 5
95%	80%	90%	98%	106%	114%	124%
75%	80%	87%	94%	100%	107%	115%
50%	80%	85%	91%	96%	102%	109%
25%	80%	83%	87%	92%	98%	103%
5%	80%	79%	82%	86%	90%	94%

Asset Surplus or (Shortfall) - in Millions



Percentile	Today	Year 1	Year 2	Year 3	Year 4	Year 5
95%	(60)	(26)	(5)	17	38	64
75%	(60)	(36)	(17)	1	21	41
50%	(60)	(44)	(28)	(10)	7	25
25%	(60)	(52)	(39)	(23)	(7)	9
5%	(60)	(67)	(57)	(45)	(31)	(18)

Source: Mellon Asset Management

See back page for index disclosure and explanation of assumptions.

Case Study Analysis

The hypothetical case study examines a frozen plan that is 80% funded today, and wishes to achieve a fully funded status and termination in three to five years.

Portfolio Strategy 1 has a 60% equity/ 40% bond asset mix that would be typical for many pension plans. Portfolio Strategy 2 is strongly concentrated in customized long duration bonds, with a few selected "alpha" sectors to supplement total return.

Given its greater equity component, Strategy 1 has the higher expected average return, and a small chance of superior results in the near term. However, Strategy 1 also has a wider range of unfavorable outcomes. Thus there is a greater risk of underperformance in both the near and longer term.

With Strategy 2, the outcomes are more predictable, with much less downside risk. By Year 4, the chance of reaching the terminal funding objective (100% funding) is actually higher with "conservative" Strategy 2.

See back page for index disclosure and explanation of assumptions.

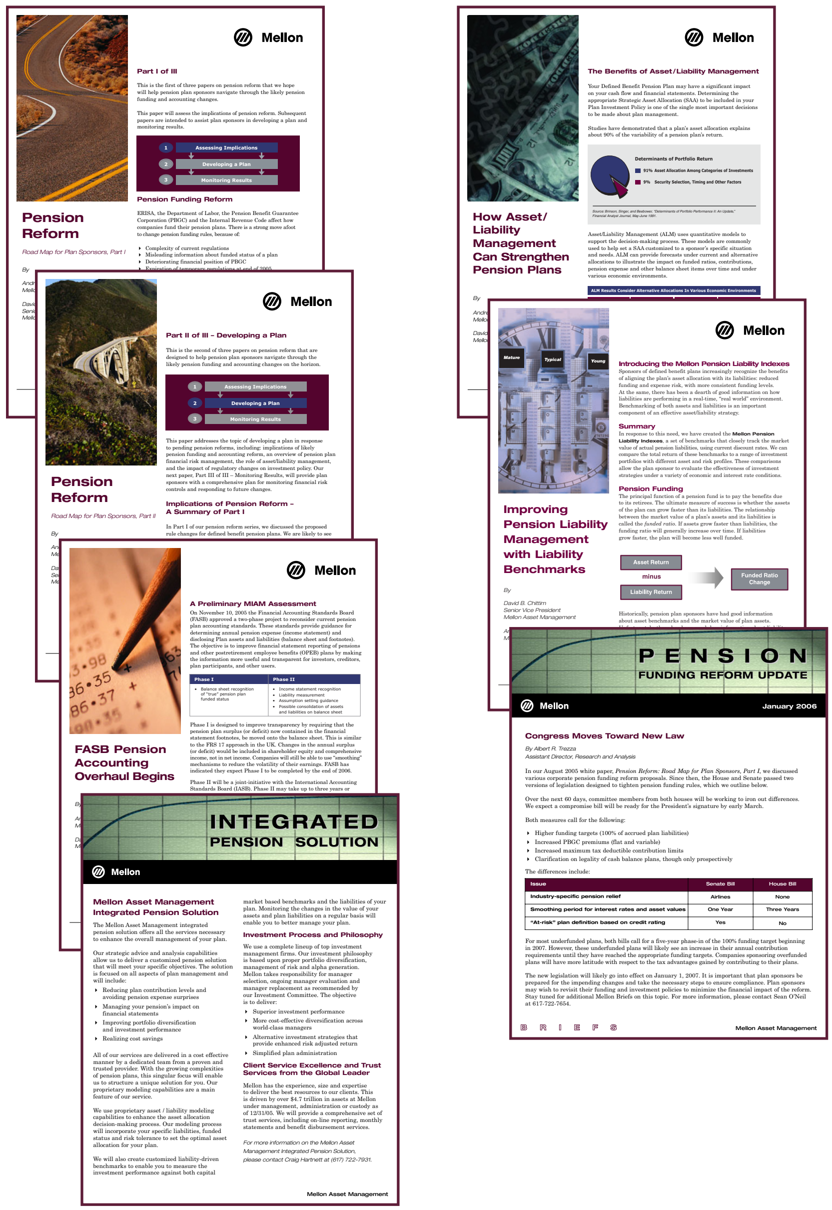
Termination Alternatives

The proliferation of frozen plans has triggered interest in the development of alternatives to traditional termination options. We expect there will be significant interest in these products if they are more cost effective than traditional solutions.

Additional Resources for Pension Fund Management

In previous articles, Mellon Asset Management has examined a range of topical pension issues, including Asset/Liability Management, pension fund reform, and custom liability indexes.

For more information on freezing or terminating pension plans, or prior topics, please contact Peter Austin, Executive Director, Mellon Asset Management, at 412 234-4474.



ALM Model Assumptions

Mellon Asset Management's Asset/Liability Management (ALM) modeling is based on proprietary capital market projections for the expected returns, volatility and correlations of common asset classes. These asset classes include equities, bonds of various durations, international securities, emerging markets, commodities, absolute return strategies, and other alternatives.

The ALM model uses Monte Carlo simulation to generate thousands of hypothetical economic scenarios that incorporate the projected returns and volatility assumptions. The model produces a range of possible portfolio returns and assigns the probability of their occurrence, as highlighted in the charts. The expected returns and standard deviations shown in the case studies are the weighted averages of the component asset classes.

Index Disclosure

The *Russell 3000 Index* is an unmanaged capitalization-weighted index that is broadly representative of U.S. equity markets.

The *Russell 2000 Index* is an unmanaged capitalization-weighted index that is broadly representative of U.S. small cap equity markets.

The *Russell 1000 Index* is an unmanaged capitalization-weighted index that is broadly representative of U.S. large cap equity markets.

The *MSCI Europe, Australasia, Far East (EAFE) Index* is an unmanaged market-value-weighted index of more than 1,000 securities issued by foreign companies.

The *Lehman Brothers U.S. Aggregate Index* is an unmanaged index broadly representative of the taxable high grade U.S. bond market.

Peter S. Austin

Peter is Executive Director of Mellon Asset Management, which provides a range of investment management, asset/liability management and fiduciary services to private and public pension plans, as well as foundations and endowments. He has held leadership roles in Mellon businesses that deliver broad consulting and investment solutions to institutional clients. Peter's background also includes management positions in treasury, corporate finance and strategic planning. Peter holds a B.A. from Kenyon College and an M.B.A. from the Katz School at the University of Pittsburgh.

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Andrew is a Director of Research and Analysis within Mellon Asset Management. He has extensive experience assisting plan sponsors in their development of a strategic asset allocation, asset/liability analysis, and funding policy construction. Andrew is an Associate of the Society of Actuaries, a Member of the American Academy of Actuaries and has a B.S. in Mathematics from Slippery Rock University.

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