Liability-Driven Investing for Defined Benefit Pension Plans

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A pension plan trustee's ultimate goal is to ensure fulfillment of all promised payments to beneficiaries over the life of the plan. Pension plan sponsors have a myriad of investment, risk management, regulatory and accounting issues to navigate in fulfilling such an important goal. As pension plan financial reporting and regulatory requirements have been strengthened and standardized over the last 15 years, most plan sponsors have taken measures to partially or fully "freeze" their plans. A "frozen" pension plan is closed to new employees, and in many cases also includes suspending benefits accruals for current plan beneficiaries.

While freezing a pension plan flattens the growth trajectory of liabilities, it does not eliminate the growth of the liabilities or the volatility of a plan's funded status. Mark-to-market pension accounting rules require that plan sponsors value plan assets and liabilities in periodic financial reporting based on prevailing market interest rates and current asset values. Failure to properly manage pension plan volatility can have a significant impact on the financials of an organization and result in unexpected and undesirable plan sponsor contributions. Liability-driven investing (LDI) is a pension risk management philosophy and practice that seeks to align plan assets with liabilities and ultimately reduce funded status volatility. Below, we discuss what LDI is and how it is most effectively implemented in pension plans from a governance, portfolio construction and monitoring perspective. We conclude with LDI implementation considerations in the current market environment.

What is LDI?

Most plan sponsors have heard the term or seen the letters "LDI." But to fully understand what LDI entails, let's address a few corporate pension accounting and reporting topics. Subject to accounting rules defined in Financial Accounting Standard (FAS) 158, corporations are required to report net pension liability on their balance sheet annually.[1] The net pension liability is simply the value of plan assets less the plan's projected benefit obligation (PBO). The PBO represents an estimate of the present value of plan liabilities and is calculated utilizing a discount rate curve tied to prevailing market interest rates. Given that market interest rates change daily, the discount rate used to estimate PBO is subject to daily changes even though it is typically only annually reported. The daily variability of plan assets invested in financial markets coupled with the daily variability of PBO liability subjects a plan's surplus/deficit to potentially high volatility. The term "funded status" is a more common reference to the measure of a plan's assets in relation to its PBO liabilities. The table on the right represents a very simple case study that illustrates how significantly the funded status of a plan could have changed in the first quarter of 2020 which was a period of downside volatility in both equity values and interest rates.

	Beginning	Ending
Pension Portfolio Value	$90.0	$96.5
PBO Value	$100.0	$112.0
PBO Funded Status	90.0%	86.2%

Sample plan with 60% in Growth Assets/40% Core Bonds.
Core Bonds duration of six years/Liabilities duration of 12 years.
Growth assets return of +8.0%.
Parallel shift in yield curve of -100 basis points (-1.0%).

1 Statement of Financial Accounting No. 158, Employers' Accounting for Defined Benefit Pension and other Postretirement Plans, an amendment of FASB Statements No. 87, 88, 106 and 132(R), Financial Accounting Standards Board of the Financial Accounting Foundation.

A drop in funded status of this magnitude could result in unexpected, required contributions, a drop in “other comprehensive income” on the company’s balance sheet, an adverse impact on important company financial ratios, and likely an increase in variable rate PBGC premiums for the plan sponsor.

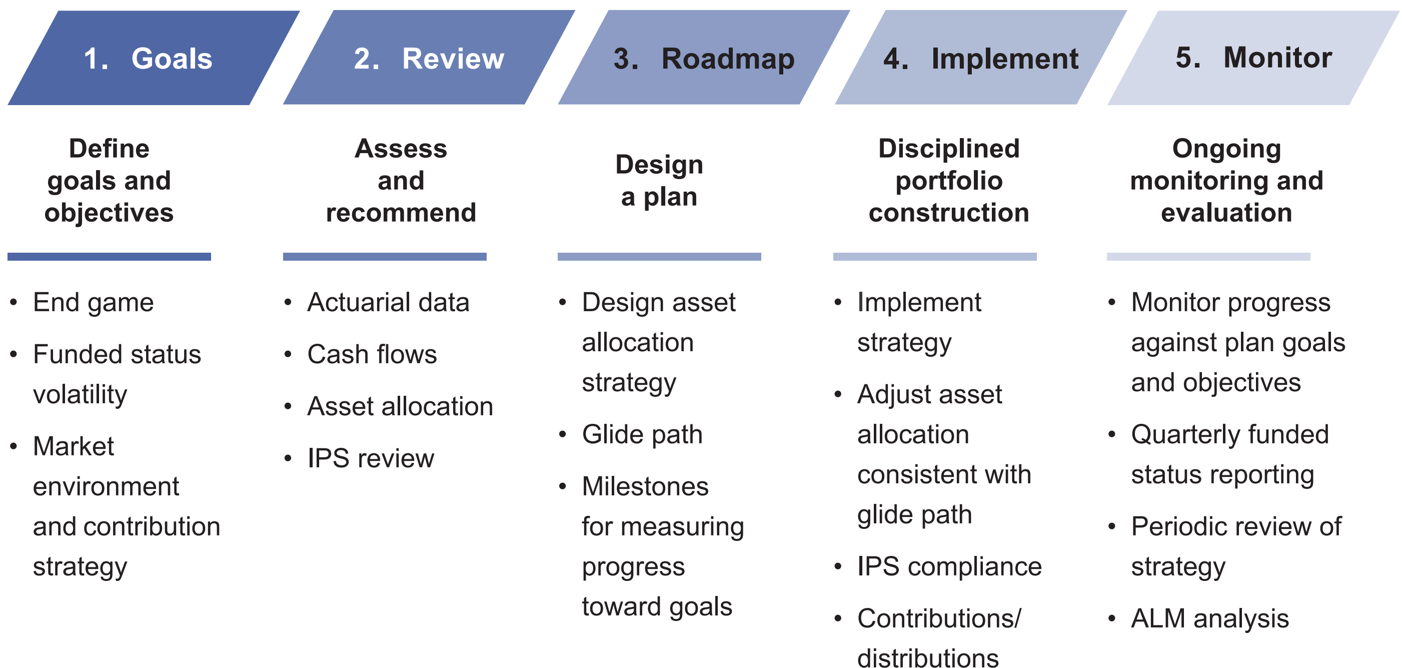
LDI fulfills two primary objectives for plan sponsors seeking to mitigate these. First, because LDI investments include high-grade, long duration bonds, reallocating plan assets from return-seeking asset classes (such as equities) into LDI represents a “de-risk” step for the portfolio. Secondly, by matching the interest rate sensitivity (duration) of the LDI bonds to that of the plan liabilities, a well-designed LDI strategy offers a hedge against interest rate volatility. Simply, the value of the LDI assets move up and down in correspondence with the PBO liability.

Most pension discount rate curves utilized to value liabilities are comprised of corporate bond issuers with A and AA credit ratings. As a result, most LDI strategies include a significant allocation to high-grade corporate bonds to provide an additional hedge to changes in corporate yield spreads that impact the discount curve.

Effective credit selection in an LDI portfolio provides a critical credit hedge against a corporate pension discount rate curve and has the potential to offer a modest level of extra yield and excess return on the LDI assets. However, in designing and implementing an LDI strategy for our pension clients, we believe in the philosophy of “win by not losing.” Given the asymmetric risks associated with holding downgraded or defaulted credits that drop out of the pension discount curve, we do not believe in taking excess credit risk as part of an effort to increase portfolio yield and generate higher excess return on LDI assets.

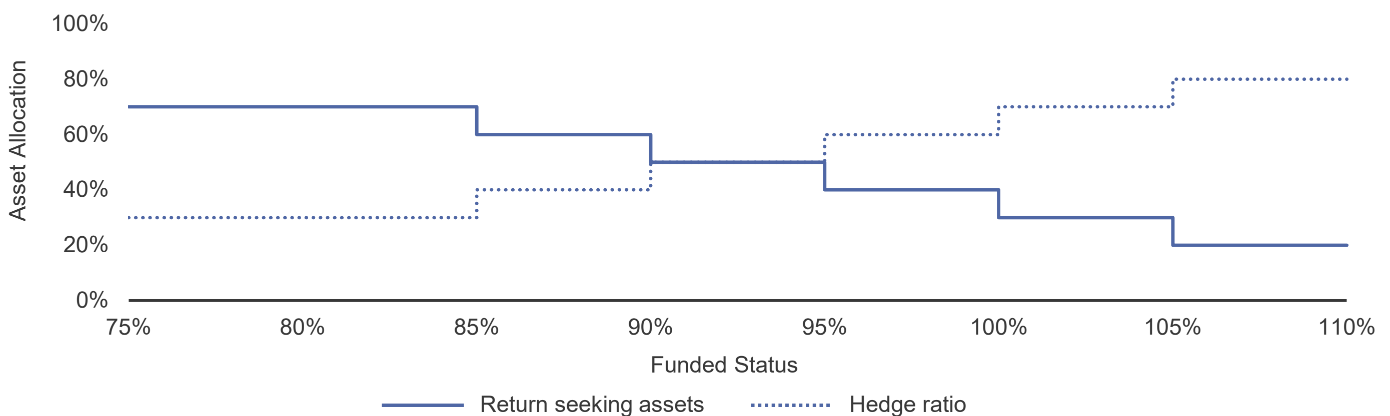
How is LDI Implemented?

Implementing an LDI strategy is a multi-step process summarized below. Establishing proper governance represents a critical first step before LDI bond portfolio construction should be contemplated. Governance structure establishes an important road map for the plan and instills discipline to help ensure timely and effective implementation.



To establish a good roadmap, you have to first identify your destination. Plan sponsors need to first define their goals and objectives. Is the ultimate goal to terminate the plan? If so, what is the desired timeframe for termination? Alternatively, given potential high costs associated with termination, is “hibernating” the plan by freezing and de-risking a preferred approach? Other important considerations for a plan sponsor include sensitivity to funded status volatility and ability to meet unexpected contribution requirements. If investment returns will be relied upon to close the funding gap, plan sponsors will need to brace for higher funded status volatility and the possibility of unexpected plan contributions if adverse market conditions negatively impact returns.

Defining plan goals and establishing risk management parameters is a critical first step followed by an assessment of current plan status and details. A review of current actuarial details, portfolio holdings and the investment policy serve as a coordinate check on the plan’s path to its end goal. Establishing plan governance structure is an important part of this step. Given the hedging characteristics and objectives of LDI, adopting an LDI approach represents a significant departure from a traditional returns-driven investment strategy. As such, most organizations implement LDI gradually in a glide path framework. A glide path can be designed around time or key plan metrics, such as the funded status of the plan. Our recommendation is that PBO funded status should generally be the metric that dictates de-risking trigger points along a glide path shown below. The funded status is what ultimately drives opportunities to terminate the plan and what drives contribution requirements and other pension costs.



As the plan’s funded status improves over time, exposure to return-seeking assets is reduced and reallocated to long duration bonds that help mitigate the interest rate sensitivity of the plan liabilities. Details of a specific glide path plan should be written into the investment policy statement as part of good governance practice.

Portfolio implementation and monitoring represent important final steps. Timely implementation is an often-overlooked factor that is essential to ensuring a pension plan sponsor reach its goals. Due to financial mathematics associated with discounting long term cash flows to a present value, relatively small changes in interest rates can have a significant impact on PBO liability value. Because interest rates are subject to daily volatility, missing a window to de-risk the portfolio with LDI can significantly extend the journey for a plan to reach its goals. Therefore, implementing LDI supported by daily funded status monitoring represents one of the most important and controllable steps a plan sponsor can make in meeting its goals.

Current LDI Implementation Considerations

While most plan sponsors have adopted LDI strategies in some form, many remain invested in traditional strategies, including larger allocations to equities and other return seeking assets, combined with minimal exposure to interest rate sensitive assets. These plan sponsors have benefited greatly from strong equity markets, and more so from significantly higher discount rates over the last couple of years. To illustrate, the Milliman 100 Pension Funding Index shows the average funded status at 102.1% as of December 31, 2023 versus 89% on December 31, 2019.[2]

For plan sponsors that have not adopted LDI, and have experienced significant improvement in their funded status, now may be the time to consider implementing LDI. With rates retreating to some degree in the second half of 2023, and potentially moving further down this year under a Federal Reserve (Fed) pivot scenario, recent funded status improvement may be at risk.

For well-funded plans, Pension Risk Transfer (PRT) can be a worthwhile consideration. Importantly, it is worth noting that this process is long and true costs may not be known until the actual conclusion of the PRT (e.g., assets and liabilities are transferred).

As an alternative to pursuing a PRT due to time, cost, or resources constraints, plan sponsors may want to consider "hibernation". With this strategy, funding can remain stable, reducing risk to the plan sponsor, and can be maintained indefinitely, or until resources are available and annuity prices are more advantageous.

PFMAM is experienced with all of these strategies, and can work closely with plan sponsors, actuaries, insurance brokers, and other key stakeholders to help determine the investment strategy that is most appropriate for the plan sponsor and their plan participants and beneficiaries.

Final Thoughts

Organizations are confronted with many idiosyncratic business and industry risks. Organizational risks related to a defined benefits pension plan can and should be mitigated to allow the company to focus on executing its core business mission. Implemented properly and effectively, LDI can help reduce the risks of unexpected plan contributions and undesirable balance sheet volatility by better matching plan assets with plan liabilities.

Recent tailwinds from strong equity markets combined with a rapid increase in discount rates have contributed to much improved funding levels across many plans over the last few years. Given the uncertain path for equities this year, and a likely Fed pivot to rate cuts and lower pension discount rates, now is an opportune time to learn more about the potential benefits of LDI. PFMAM has the experience and resources to help and is prepared to assist plan sponsors understand and implement LDI.

2 Wadia, Zorast, and Charles J. Clark. "Pension Funding Index." Milliman. https://doi.org/https://www.milliman.com/en/insight/pension-funding-index-january-2024 and https://www.milliman.com/en/insight/pension-funding-index-january-2020.

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