

# EVOLUTION OF LIABILITY DRIVEN INVESTING

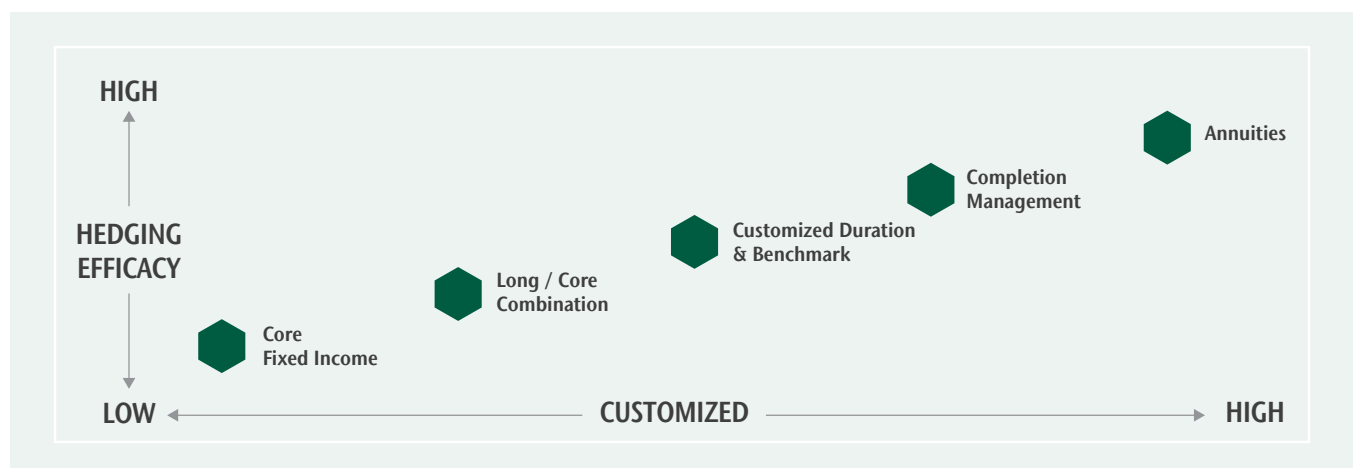
Is it a strategy or a process? Although liability driven investing (LDI) is often thought of as a strategy, it is actually a process that focuses on the liabilities as a starting point for constructing an asset portfolio that reflects a pension plan's unique liability matching needs. Ultimately, the goal of LDI is to understand the key drivers of liability risk, with interest rate risk generally being the largest driver, and then deciding how much risk to hedge.

## Measured Risk

The concept of "what gets measured, gets managed" is central to the LDI risk management framework. Without the understanding of how the liabilities are going to fluctuate, it's difficult to construct an asset portfolio that incorporates those dynamics. Therefore, LDI should involve establishing a plan-specific liability benchmark, so that changes in the value of liabilities relative to changes in asset values can be monitored and managed.

While LDI is a process for managing risk, the process varies depending on the level of risk management and customization required. Figure 1 summarizes the evolution spectrum of LDI considerations. At one end of the evolution spectrum is low customization and low hedging efficacy. As more customization is introduced, the level of hedging efficacy increases.

**Figure 1 - Evolution of LDI Approaches**



## Duration Extension

Looking back 20 years or so, immature pension plans with high equity allocations had little incentive to be too precise with respect to the LDI process, and therefore the level of the portfolio's matching of the fixed income component. As the largest source of risk came from return-seeking equity assets, a core fixed income portfolio, benchmarked against the FTSE Universe Bond Index, was common.

As pension plan liabilities have matured, and the allocation to fixed income increased, the natural evolution was to extend duration by introducing a long-bond component alongside the core fixed income allocation. However, since most plans still maintained a relatively high equity allocation, the plans were still exposed to changes in the liabilities (i.e. hedge ratios were relatively low), so there was little perceived benefit from moving beyond extending duration, even as additional risk factors, such as key rate durations, became increasingly important to capturing plan risk exposures as plan liabilities matured.

## Customization

As the fixed income allocation increased and mature plans realized the limitations in duration extension, further customization provided better matching against not just duration, but a more complete set of liability risk factors. At one extreme the customization could result in a portfolio that closely matched liability cash flows. The other extreme could involve the use of derivatives - futures or swaps - to synthetically hedge liability risks.

However, the real roadblock for de-risking has been the concern by plan sponsors that the decline in interest rates would be reversed. To overcome the timing concern, some plans introduced a dynamic approach to de-risking, where decisions are based on actual changes in the solvency funding level, rather than on expected changes in interest rates or expected returns in general.

This approach recognized improvement in solvency levels could be due to a positive experience from strong growth in the return-seeking assets, or it could be due to a decline in the value of the liabilities that was not reflected to the same extent in the value of the assets. As solvency levels improve and de-risking triggers are hit, assets are switched out of return-seeking assets into matching fixed income.

## Completion Management

While dynamic de-risking helps address asset mix timing challenges, it doesn't alleviate complexity associated with de-risking execution, which has also limited the adoption of LDI. Completion management addresses some of these execution challenges by having a single manager "quarterbacking" the plan's progress along the de-risking journey, particularly for pension plans with multiple investment managers and a governance structure that can make it difficult to assess and execute de-risking opportunities.

Allowing the completion manager to take responsibility for adjusting the overall portfolio duration and other risk factor exposures when funding level triggers are met, also implies the least amount of disruption to the rest of the portfolio.

## Risk Transfer Through Annuities

At the end of the LDI evolution spectrum is risk transfer through annuities, where the assets and liabilities are transferred from the plan sponsor's balance sheet to an insurance company. While the UK has been the leader in this space, Canada has seen material growth over the past few years.

The most common forms of insurance de-risking are the buy-out and the buy-in policies. Under a buy-out, the asset and liabilities are transferred out of the plan and off the balance sheet of the plan sponsor to the insurance company. The liabilities being transferred are generally retiree and deferred members.

When a plan has a deficit and the company purchases a buy-out annuity, it is required to make a cash top up for the deficit, so that the funding position of the remaining liabilities is not adversely impacted following a buy-out. Therefore, a buy-in is typically considered when a pension plan has a large deficit, since the buy-in remains an asset of the plan, so there is no requirement for a deficit top up. The plan sponsor can later opt to have a buy-in become a buy-out when the funded position improves and the cash top up is either smaller or no longer required.

## Managing Regret

LDI is a form of insurance and regret management. Many pension plans are likely in better solvency funding positions than they have been for years, but they have been in this position before. What's different this time that could lead to a different decision? Perhaps the dollar value of the assets and liabilities are much larger, which would imply a greater dollar impact from adverse changes in solvency levels.

LDI de-risking has evolved and there are approaches available on an institutional scale that were not options ten or so years ago, which can help manage the complexities associated with monitoring and execution of a de-risking goal. Most importantly, help is available to guide the plan sponsor and to efficiently execute a tailored de-risking solution.

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