

Custom liability driven investing – have your cake and eat it too



According to the Mercer Pension Health Index, the funding status for a typical Canadian defined benefit (DB) pension plan has fluctuated by more than 30 per cent in the last 10 years, and many plans have been under 100 per cent funded for most of that time. Such wide swings in funded status have many negative implications, including reduced member benefit security, volatile contribution requirements and unpredictable financial statement impacts.

As a result, many Canadian plan sponsors are focusing on reducing pension plan risk to ensure that their funded status is less volatile in the future. This represents a change in philosophy for many plans – a shift from trying to earn excess returns to providing benefit security – and makes good sense as risk may be better taken in a plan sponsor's core business where it can fully benefit stakeholders.

One way of reducing risk is by using liability driven investing (or LDI) to better match pension assets and liabilities. However, today's low interest rate environment can make some plan sponsors reluctant to implement LDI solutions.

Pension plans can reduce risk and make their fixed income assets work harder using a custom LDI solution – a technique used by large financial institutions like insurers for over 50 years.

Why do LDI?

LDI means investing assets to move like liabilities, so all else being equal, a plan's financial position stays stable through good and bad market conditions. A well-constructed LDI portfolio can support a number of objectives, including:

- **Reduce contribution and financial statement volatility**
- **Promote benefit security**
- **Promote plan sustainability**
- **Reduce management time and attention**
- **Facilitate a future annuity purchase**

There are many types of LDI solutions, but custom LDI solutions are best practice in the U.K., where pension de-risking has been going on for some time. KPMG reported in their 2015 LDI survey that there are now £657 billion of U.K. DB pension plan liabilities hedged and more than 1,000 LDI mandates. In fact, KPMG comments: "LDI is arguably the largest single investment exposure that U.K. defined benefit pension schemes have today."¹

Three key ingredients for a successful LDI solution

Plan sponsors should consider their overall objectives and constraints when evaluating an LDI solution. Key considerations typically include:

1. **Interest rate risk management:** The overall duration of the assets should align with the overall duration of the liabilities being matched to ensure that the assets and liabilities move together when interest rates move.
2. **Credit mismatch risk management:** The discount rates used to calculate accounting liabilities and solvency liabilities reflect a large proportion of corporate and provincial bonds – as high as 100 per cent for accounting and sometimes close to 100 per cent for solvency. Plan assets should contain a similar exposure to corporate and provincial bonds to ensure that the assets and liabilities move together when credit spreads widen or narrow.
3. **Yield mismatch risk management:** The yield on the assets in the LDI solution should be at least as great as the liability discount rate or else there may be slippage in the funded status as the asset returns are not "keeping up" with the liability growth.

Not all fixed income solutions are created equal

Many Canadian plan sponsors are investing their fixed income assets in the FTSE®/TMX Long Term Bond Index, a blend of indices or other index oriented solutions to approximately match the duration of their liabilities. Others have parked their fixed income assets in the FTSE®/TMX Universe Bond Index while they wait for interest rates to rise.

In contrast, custom LDI is where the plan invests in a bespoke portfolio of largely corporate and provincial bonds that closely matches the duration of the liabilities. Illiquid assets such as commercial mortgages and private fixed income may also be used in a custom LDI portfolio for additional yield and diversification. Custom LDI portfolios have a custom benchmark and custom reporting to help measure success.

Different fixed income solutions provide different levels of risk mitigation. We've created sample portfolios for a hypothetical fully funded pension plan with a liability duration of 16 that is looking to hedge accounting liabilities.

¹ For the purposes of the survey, KPMG defined an LDI mandate as one which either has some sort of liability cash flow benchmark or uses derivatives to gain exposure to nominal interest rates, real interest rates or inflation hedging. Mandates with a broad bond index benchmark were excluded.

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Here’s an overview of the portfolios, and how they stand up to the three key risks discussed on page 2:

Overview of portfolios ¹				
	FTSE®/TMX Universe Bond Index	FTSE®/TMX Long Term Bond Index	Blended Index ²	Hypothetical custom LDI portfolio ³
Federal bond allocation	36%	24%	22%	5%
Provincial bond allocation	35%	53%	58%	20%
Public corporate bond allocation	29%	23%	20%	65%
Private debt allocation	0%	0%	0%	10%
Average credit rating	AA	AA	AA	A
Approximate impact on funded status				
1. Interest rate risk (0.50% parallel interest rate reduction)	-4%	-1%	0%	0%
2. Credit mismatch risk (credit spreads fall 0.50%, provincial spreads fall 0.25%)	-6%	-5%	-4%	-1%
Yield mismatch risk				
Portfolio yield	1.96%	3.13%	3.15%	3.71%
3. Yield deficiency (to liability discount rate of 3.75%)	1.79%	0.62%	0.60%	0.04%

¹All data as at June 30, 2015.

²88 per cent FTSE®/TMX Long Universe and 12 per cent FTSE®/TMX 20+ Strip Universe to target a duration of 16.

³The above data is hypothetical and does not represent an actual client portfolio. Do not place undue reliance upon such forward-looking statements. Please refer to the disclaimer section for details on the limitations and risks with relying on hypothetical data.

Source: Sun Life Financial internal models

How do the solutions stack up?

- Interest rate risk:** The FTSE®/TMX Canada Universe Bond Index has a duration of approximately seven years and does not provide a close duration match for the hypothetical plan, which creates interest rate risk. All of the other solutions do a reasonable job of matching overall duration.
- Credit mismatch risk:** Index solutions typically contain less than 30 per cent corporate bonds. Custom LDI solutions generally have much higher allocation to investment grade corporate bonds and may provide a close match to the liability credit profile. Mismatches in credit exposure can be just as risky as mismatches in interest rates and can significantly impact a plan’s funded status. In the hypothetical scenario above, the custom LDI portfolio provides additional funded status protection compared to the index solutions.
- Yield mismatch risk:** Indices are yield-deficient when compared to the liability discount rate (for solvency, accounting or going concern) as they don’t contain enough credit exposure to “keep up” with the liability discount rate. The yield match on custom LDI is usually much closer. In the hypothetical scenario above, the custom LDI portfolio provides an additional expected yield of 1.75 per cent versus the FTSE®/TMX Canada Universe Bond Index. This yield deficiency means that in a similar rate environment, investing in the FTSE®/TMX Canada Universe Bond Index could erode the hypothetical plan’s funded status by about eight per cent over five years!

A custom LDI solution may provide equal or better protection against interest rate risk and better protection against credit mismatch risk and yield mismatch risk than the index portfolios. In addition, a higher projected yield on the custom LDI solution may compensate for losses that the portfolio may experience in many rising interest rate environments. A DB pension plan relying on index strategies is leaving itself open to credit mismatch risk, and could experience material deterioration in its funded status due to yield mismatch risk.

Too good to be true?

We often hear plan sponsors remark that custom LDI appears too good to be true. While the benefits of custom LDI are indeed compelling, here are some potential pitfalls to avoid:

- **Concentration risk:** The corporate bond universe in Canada contains about 50 per cent financial institutions, a concentration level that prudent investors may not be comfortable with. Including illiquid asset classes like private fixed income and commercial mortgages, or non-Canadian corporate bonds (hedged back to Canadian currency) can provide a more diversified portfolio of matching assets, resulting in lower overall risk. With such high exposure to credit required to match liabilities, the LDI portfolio manager's credit expertise becomes more important.
- **Scarcity of long duration assets:** The supply of long duration assets in Canada is limited. Given the importance of including long duration assets in an LDI portfolio, many plan sponsors leverage the expertise of a portfolio manager with experience sourcing and managing long duration assets.
- **Credit default risk:** Although custom solutions involve a higher allocation to credit assets, credit default risk is mitigated by the additional yield that is earned and the expertise of the LDI portfolio manager.
- **Timing:** Many plans are reluctant to increase their allocation to fixed income assets when interest rates are low or their plan is underfunded. One way around this is to maintain the same allocation to fixed income, but use a custom LDI solution to make the fixed income assets work harder. By moving fixed income assets from index oriented solutions to a custom LDI solution, plans may experience a reduction in risk and the potential for higher yields. A glide path can allow the plan to move return seeking assets into the LDI portfolio as triggers are hit, further reducing risk over time.

Custom LDI – have your cake and eat it too

Custom LDI may protect plans from the pain of volatile market conditions and provide many potential benefits versus index fund solutions:

- Higher yields
- Lower credit mismatch risk
- Improved credit diversification
- Tighter interest rate matching
- Better risk management and oversight through custom benchmarking and reporting

All of these benefits can translate into improved member benefit security, less volatile contribution requirements, and more predictable financial statements.

The potential pitfalls of custom LDI solutions can be mitigated and the benefits of a custom LDI solution are likely to far outweigh the cost, allowing plan sponsors to have their cake and eat it too. Who wouldn't want higher yields and less risk?

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Brent leads Sun Life Financial’s Defined Benefit Solutions team, which helps some of Canada’s largest employers manage the risks in their defined benefit pension plans with innovative, customized solutions that address the specific challenges of each plan sponsor. With over 20 years of experience in the pension and insurance industry, Brent’s expertise includes liability driven investments (LDI), annuity products, longevity insurance, defined benefit pension plan funding and governance, and risk management.



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