

## Liability Driven Investing (Part One): Why LDI Matters, Especially Today



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*In Part One of a new series titled Manage Complexity, Deliver Clarity, François Hérou, CFA, Director, Head of Balance Sheet Solutions Sales at BMO Global Asset Management, shares his expertise on Liability Driven Investing (LDI). He explains how adopting a risk-management approach to investments both enhances the long-term sustainability of Canadian Defined Benefit pension plans (“DB plans”) and mitigates the impact that declining long-term nominal rates and equity market volatility have on their funding.*

### **Introducing Our New Series – Manage Complexity, Deliver Clarity**

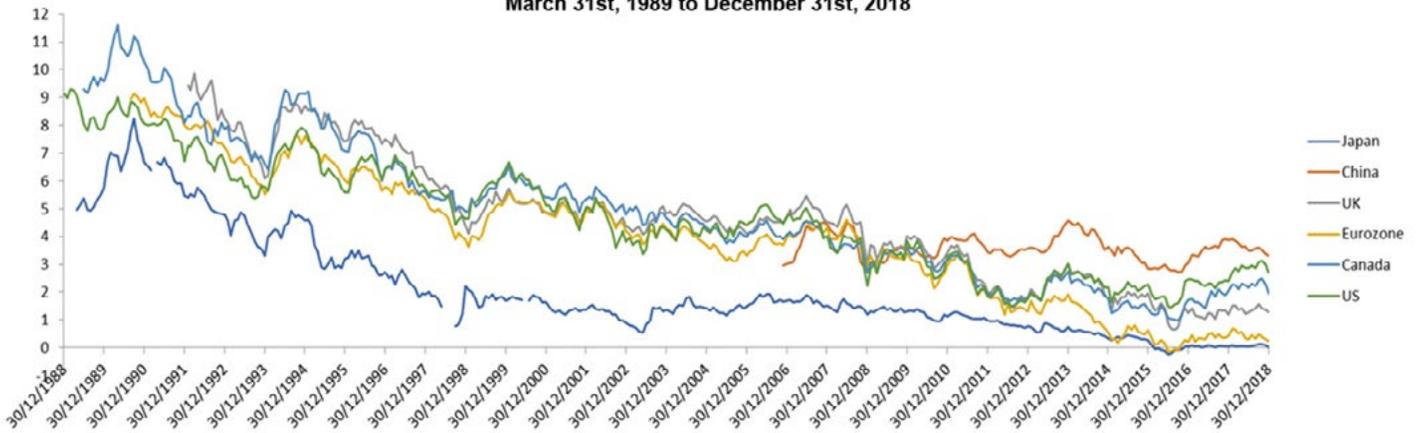
The first article in our series on Liability Driven Investing arrives at a time when equity market volatility combined with a substantial drop in long-term Canadian interest rates in the last quarter of 2018 have reversed most of the gains in pension funding improvements made in 2018. In their respective January publications, Mercer Canada stated the funded position of pension plans was “pummeled in the fourth quarter” and AON indicated that the fourth quarter saw “DB plans’ financial health decline on both a yearly and quarterly basis.”

This article provides insight on how the structural trend in long-term interest rates, the nature of a DB plan’s risk profile, the DB plan’s current funding level, and the recent pension legislation reforms influence the plan’s investment decisions throughout its de-risking journey

### **Is Funding Relief Coming In The Form of Higher Long-Term Rates?**

The decades-long structural decline in long-term nominal interest rates is a global phenomenon, as is evident by similar trends across 10-year government yields in Japan, the EU-28, UK, U.S. and China. Furthermore, the higher the Median Age of the country or region associated with the 10-year government yield, the more pronounced the structural decline in its yield, given the empirical historical relationship between a labour force, retiree population and macroeconomic fortitude. The demographic trend in industrialized countries including Canada ultimately begs the question of how sustainable high long-term nominal interest rates are in the foreseeable future.

**10-Year Government Yields (%)**  
**March 31st, 1989 to December 31st, 2018**



Source: Bloomberg – end of month data

2017	Japan	EU-28	UK	Canada	U.S.	China
Median Age (yrs.)	46.1	42.9	40.3	40.6	38.0	37.0
65 + (% pop.)	26.7%	19.4%	18.0%	16.9%	15.6%	11.0%

Sources: Eurostat, Statistics Canada, Office for National Statistics

The long-term structural decline in 10-year government yields is not only common to industrialized economies, but is also significantly influenced by demographic factors. In light of the aging population and maturing growth of industrialized economies, such as Canada, the probability of re-visiting 1980's levels of long-term nominal interest rates is low. Consequently, the negative effects of lower long-term interest rates on Canada's DB plan funding levels are likely to linger for some time.

### The DB Plan's Risk Profile

The strong equity market performance of the past few years combined with the pre-autumn 2018 increases in long-term rates swayed many DB plans to maintain a higher-than-necessary exposure to equities despite a significant improvement in their funding ratios.

However, taking this position does not come without hazard, as the risks embedded in a traditional DB plan are all skewed against the plan sponsor. These can be broken down into four types: truncated, compounding, complex, and disruptive.

- *Truncated Risk* – The upside benefit to a plan sponsor is increasingly limited as the plan's funding position improves, whereas the downside risk to the sponsor increases as the plan's funding position declines and contributions consequently increase.
- *Compounding Risk* – The plan's funding decline are driven by a decrease in long-term interest rates and/or a drop in equity markets, both of which tend to occur during recessionary periods. These are periods when the sponsor's core income typically declines and its ability to borrow becomes either more difficult or more expensive (or both).
- *Complex Risk* – The plan's liability hedging requirements and asset management solutions extend beyond the core area of expertise of most plan sponsors. Furthermore, actuarial assumptions and changes in pension regulations add complexity to the plan sponsor's management team and Board of Directors.
- *Disruptive Risk* – Potential increases in employee contribution due to the pension funding shortfall and/or the prospects of an underfunded plan guaranteeing future retirement benefits could have an effect on employees' morale. Furthermore, negative headlines related to an underfunded plan might affect the plan sponsor's corporate image.

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## The four types of risks embedded in a traditional DB plan are all skewed against the sponsor: truncated, compounding, complex and disruptive.

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The fact that a DB plan's risk profile is skewed against the plan sponsor should be an incentive for both sponsors and plan members to adopt a risk management strategy ensuring enough asset growth to support the plan's obligations, while avoiding swings in funding that are damaging, sometimes permanently, to the plan's balance sheet.

### De-risking Journey through Liability Driven Investing

Liability Driven Investing is a risk management discipline that incorporates a DB plan's liabilities into all of the plan's investment decisions, as opposed to a stand-alone investment strategy that applies solely to its assets. LDI establishes the DB plan's liability cashflows as the benchmark against which its assets are invested, ensuring the plan's asset portfolio has an investment objective to support its current and future liability obligations. This approach achieves two purposes:

1. Asset growth that, combined with annual sponsor contributions into the plan, will support the plan's obligations towards its beneficiaries, and
2. Minimized funding risks to the plan sponsor, including during periods of market stress, through an asset allocation that both correlates to the plan's liabilities and adapts to changes in the plan's funding ratio.

Interest rate risks matter in pension risk management. The effect of a 1% decline in the going-concern discount rate of a pension plan with 16-year duration has the effect of an approximately 16% increase in its liability values. Investing with an eye on the plan's interest rate risk is one way LDI removes unwarranted risk from the pension's balance sheet.

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This doesn't mean that LDI is a fixed income strategy that should rigidly match the pension's asset duration with its liabilities. Implementing an LDI strategy requires that a sponsor first establish its long-term plan to progressively reduce investment risks based on its funding level. If and when the plan's funding position improves, the LDI strategy adapts to reflect the pension sponsor's progression toward its de-risking end goal. For some plan sponsors, that de-risking end goal is a pension risk transfer to an insurance company or a hibernation portfolio with an asset manager.

*DB plans in a large underfunded position* typically seek to maximize growth by investing in equities. This, however, exposes the sponsor to volatility in its plan's funding levels which, as we have recently seen, might be severe in case of a significant equity market decline, and especially if it is accompanied by a drop in long-term interest rates. Furthermore, many provincial pension

reforms have recently imposed additional going-concern funding requirements based on a DB plan's equity allocation. Capital-efficient LDI strategies could remove unwarranted risks from these DB plans by replacing a portion of its equity allocation with an equity replication strategy, thereby managing the plan's liability risk and still allowing exposure to growth assets.

*DB plans approaching full funding* may begin to de-risk their investment strategy. The plan will probably need to continue holding growth assets at this stage, albeit through a more traditional LDI strategy, and/or reduce its allocation to the equity replication strategies.

*DB plans exceeding full funding* will pick up the pace of their de-risking strategy. This may include progressively selling growth assets to invest in a liability-matching strategy. For those sponsors seeking full de-risking through an off-balance sheet solution, the LDI strategy will progressively evolve with the DB plan, through systematic annuitization or portfolio hibernation, until it reaches the required funding levels that allow it to transfer the pension risk to an insurance company.

### **The Pension Regulatory Considerations**

As a sponsor progresses through the de-risking journey, it is important for its LDI manager to incorporate the relevant regulatory parameters in its investment decision-making. As we briefly mentioned above, recent provincial regulatory changes can affect the DB plan's going-concern funding level, either through its asset allocation between "fixed income" and "non-fixed income" or its level of duration-matching between assets and liabilities.

Furthermore, the DB plan's asset allocation will determine its actuarial going-concern discount rate, which in turn affects the value of liabilities on which the plan's funding is based. An extremely low-risk asset allocation might decrease the plan's going-concern funding requirement, but only at the cost of lowering the going-concern discount rate and increasing the present value of liabilities.

*Stay tuned for our next article in the Spring 2019 Edition of Institutional Quarterly in which we discuss insurance-based pension de-risking strategies and how they can fit with a DB plan's risk management implemented through a Liability Driven Investing*

**An award-winning<sup>2</sup> provider of LDI solutions with LDI industry endorsements globally, BMO Global Asset Management brings its LDI expertise and innovation to more than 485 clients, managing over \$167 billion in pension liabilities.**

<sup>1</sup> Mercer Canada, "Defined Benefit Plans end 2018 on a sour note," January 3, 2019.

<sup>2</sup> Provider of the Year (2017, 2016, 2015, 2014, 2013 and 2012), Pension and Investment Awards; Risk Management Provider of the Year (2017 and 2015), Irish Pensions Awards; UK Manager of the Year (2017), Professional Pensions Investment Awards; Manager of the Year (2016), LAPF Investments Awards; Manager of the Year 2013, 2012 and 2011, European Pensions.

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