A Comparison of Volatility Management Techniques

By Michael Augustine,
Vice President & Director, Portfolio Management,
TD Asset Management

Risk appetites have been redefined

The last several years of capital market volatility have redefined risk appetites across the institutional investor landscape. Many institutional investors, ranging from public disability plans and property casualty insurers to pension plans and life insurance companies, have either proactively implemented programs to de-risk their portfolios relative to their liabilities or are actively engaged in discussions about how to do so.

In its December 2012 Financial System Review, the Bank of Canada highlighted two types of Canadian institutional investors that are actively reducing their asset liability mismatches due to a lowered tolerance for volatility – life insurers and pension funds. While each is driven by different priorities, it is interesting to compare and contrast the two, as the liabilities each seeks to invest against are similar.¹ While a pension plan, for many reasons, need not operate as conservatively as a life insurer, plan sponsors seeking progressive solutions to help them better manage their plans’ volatility can incorporate some of the tools of these liability driven investment pioneers.

Controlling volatility through risk budgeting

Life insurance companies operate within a holistic risk management framework, with board approved earnings-at-risk tolerance policies and volatility budgets. Insurance companies that avoid surprises by adhering to these risk budgets are rewarded with higher credit ratings, more favourable borrowing terms and stronger equity valuations. Firms managing defined benefit pension plans can similarly benefit by creating a risk budget. However, when doing so they need

¹ Interestingly, the European Commission made such a comparison in its 2010 Green Paper on the future of European pension systems. The paper suggests that Solvency II, the life insurance risk-based capital framework, be applied to pension plans, which has sparked much debate.
to be sure to consider the portfolio as a whole. Plan sponsors must remember that incremental
degrees of precision with respect to any one part of their portfolio may be expensive, create a
false sense of security and add very little to mitigating the plan’s overall volatility.

The first step in creating a comprehensive risk budget is to determine how much plan volatility
the sponsor can tolerate, which is generally articulated as a maximum contribution level or one-
year funded status shortfall. Plan sponsors can loosely think of the risk budget as the number of
“units of volatility” they are comfortable being exposed to. Portfolio construction then becomes
about deciding how to best allocate these “units of volatility” to different asset classes so as to
maximize the portfolio’s expected outcomes. The key for the plan sponsor is to strike the right
balance between short-term downside risk avoidance and long-term upside return potential.

**Different ends of the risk spectrum**

Traditional pension plans and life insurers have the same broadly defined common goal:
ensuring their asset portfolios can sufficiently meet their long-duration liability obligations;
however, their priorities differ. Life insurers tend to place a high priority on minimizing short-term
earnings volatility, while pension plans primarily focus on maximizing long-term expected returns.
These differences drive each to opposite ends of the investment strategy spectrum and result in
very different portfolio construction processes.

For example, Canadian insurers are required perform periodic tests to ensure that the expected cash flows
from their investment portfolios will sufficiently meet their expected liability obligations. To the extent that
the insurers are not perfectly cash flow matched, they are exposed to costly reinvestment and/or
disinvestment risk. In addition, regulators require insurers to hold additional capital (surplus assets) to
ensure the company can remain solvent in future, potentially stressful environments.

To mitigate these risks, life insurers generally adopt strict cash flow matching (or slightly less onerous key-
rate duration matching) strategies composed of fixed income or liability-hedging assets only. Because
return-seeking assets, such as equities, do not have liability cash flow matching properties and
attract significant additional regulatory capital requirements, they are generally excluded from a
life insurer's asset mix. On the other hand, asset-only focused pension plans generally construct
portfolios using long-run expected returns and risk premium assumptions, typically allocating
60% of the portfolio to market cap-weighted equities and 40% to DEX Universe bonds.

Since insurance companies operate within smaller risk budgets, portfolios are constructed with
prudence and conservatism. As a result, this low tolerance for volatility may be passed along in
their product pricing. According to a Q3 2012 Canadian Institute of Actuaries survey of actual insurer quotes for a retiree group, the three most competitive annuity quotes averaged a yield of 2.86%. This represented a 64 bps spread over risk-free Government of Canada bond yields, roughly the same amount of credit compensation a plan sponsor would have expected to earn from a conservative portfolio of Canadian provincial bonds. For pension plans with very limited risk budgets, purchasing a buy-out annuity may make sense. And for some underfunded plans, the buy-in version of the annuity may provide the comfort level a particularly risk averse plan sponsor is looking for, in spite of the expense and the potential need to crystallize past losses.

However, for most pension plans, moving from an asset-only framework all the way across the risk spectrum to the life-insurer framework is too much of a change, and perhaps even sub-optimal as it would require the pension plan shed all of its return seeking assets. What is becoming increasingly clear is that a prudent approach is one that falls somewhere between the ultra-low risk tolerance insurance company portfolio and the typical highly volatile, market sensitive pension plan portfolio. Striking the right balance by creating a customized volatility risk budget and maximizing that budget through the use of progressive solutions is the key.

**Progressive solutions that maximize the volatility risk budget**

Progressive solutions don’t simply replace equities with bonds or extend the duration of an existing bond portfolio. Rather, they seek to maximize expected outcomes relative to a set of liabilities while operating within a customized volatility risk budget. Thus, the risk budget is the starting point to constructing a customized progressive solution. Once the risk budget has been created, plans can choose from a number of solutions to help them achieve their goals, including active fixed income management, synthetics and low volatility equities.

Carefully managed credit portfolios are the hallmark of a life insurer’s risk mitigation strategy. The insurer allocates almost all of its “units of volatility” to actively managed credit and, absent a market-based benchmark, manages its credit portfolio directly to the liability cash flows, reducing volatility while maximizing expected returns. Much like the insurer, a pension fund should look for a seasoned active fixed income manager with a good track record of adding value. The manager will construct and manage the liability hedging assets so that the credit component itself can be viewed as an additional source of returns. The credit allocation can be diverse, and may include global bonds, emerging market debt, high yield and inflation linked bonds. This sort of customized active management could be further tailored to suit plan diversification, sector limit and quality constraint guidelines.
Acknowledging the often un-investible nature of the obligations they seek to hedge, many plans recognize the need to introduce leverage into their portfolios. Using synthetic strategies, such as bond overlay, can enhance their liability hedging portfolios (similar to an insurance company’s use of interest rate swaps). An overlay strategy provides a plan with additional exposure to bonds and lowers interest rate volatility relative to plan liabilities. By optimizing the liability hedging portfolio, more “units of volatility” can be allocated to the return-seeking assets.

Within the return-seeking asset part of the portfolio, low volatility equity investments are a popular progressive solution. Traditional benchmarks include stocks based on their market value or capitalization, without regard to volatility, correlation or other risk factors. Contrast this with an equity benchmark that includes stocks based on their level of risk (volatility). That’s the essence of a progressive equity solution. Investing in a portfolio of low volatility equities can produce market-like returns with up to 30% less risk, allowing plan sponsors to maximize their risk budgets without sacrificing the upside potential of equity market exposure.

**De-risking will continue**

As Canadian pension plan sponsors continue to focus on de-risking and better managing volatility, they can look to the risk budgeting, key-rate duration matching, active credit and synthetic interest rate risk management tools used by their institutional investment counterparts. Plan sponsors who stretch their risk budget dollars by embracing progressive solutions will be rewarded with customized portfolios that meet their unique needs and priorities. They will also gain the peace of mind that comes from knowing their strategies are in line with leading edge institutional investment best practices.

The statements contained herein are based on material believed to be reliable. Where such statements are based in whole or in part on information provided by third parties, they are not guaranteed to be accurate or complete. The information does not provide individual financial, legal, tax or investment advice and is for information purposes only. TD Asset Management Inc., The Toronto-Dominion Bank and its affiliates and related entities are not liable for any errors or omissions in the information or for any loss or damage suffered. TD Asset Management Inc. (TDAM) is a wholly-owned subsidiary of The Toronto-Dominion Bank (TD Bank). All trademarks are the property of their respective owners. ©/ The TD logo and other trademarks are the property of The Toronto-Dominion Bank or a wholly-owned subsidiary, in Canada and/or other countries.