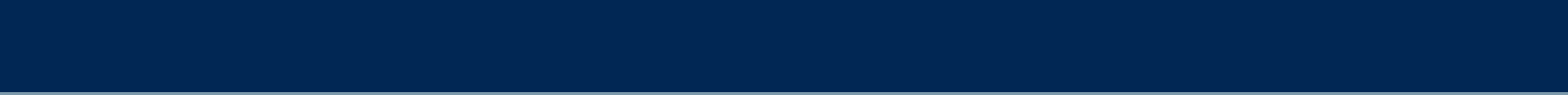


Fixed Income Overlay Strategies

An Introduction

Overlay strategies give investment managers flexibility to broaden the range of eligible solutions for a portfolio of physical assets and refine the aggregate precision of the strategies being deployed. At Phillips, Hager & North Investment Management, we monitor trends and issues that influence our clients' investment experience and periodically produce research articles and commentaries to help them address investment questions. In this article, we describe various overlay strategies that use derivative instruments and leverage with the objective of managing overall risk in a portfolio. A number of PH&N investment funds either use overlays or have the ability to do so and this introduction is intended for clients who are unfamiliar with these strategies. The overlays and related risks described are particularly relevant to pension plan investors but also apply to any institutional investor interested in pursuing term structure objectives, seeking value-added investment opportunities, and/or redressing exposures in a portfolio of physical assets.





What are Overlay Strategies?

Overlay strategies are investment strategies that use derivative instruments either to obtain, offset or substitute for certain portfolio exposures beyond those provided by the underlying physical investment portfolio.

When combined with a physical fixed income portfolio, overlay strategies can potentially broaden the range of investable instruments to more effectively enable an investor to achieve their overall fixed income investment objectives. They can also be used to indirectly modify the characteristics of an existing fixed income portfolio, providing the investment manager with greater flexibility to adapt to changing market views and conditions. This paper serves as a primer for investors who are interested in understanding the following:

- 1) Reasons for using overlay strategies
- 2) Benefits of overlay strategies
- 3) Potential derivative instruments used in overlay strategies, and how they are used
- 4) Practical considerations in the implementation of overlay strategies

Reasons for Using an Overlay Strategy

There are many ways in which overlay strategies can be used by investors. However, the objective of this primer is to describe three key motivations for pension plans to employ overlay strategies within their fixed income allocations – namely:

- 1) To effectively and efficiently achieve the intended term structure objective;¹
- 2) To create potential value-added opportunities that might not be available when constraining the portfolio to physical bond holdings;²
- 3) To offset some level of undesired exposures, or to augment desired exposures in the existing physical portfolio without disrupting an existing particular strategy.³

1. Using overlay strategies to manage interest rate risk

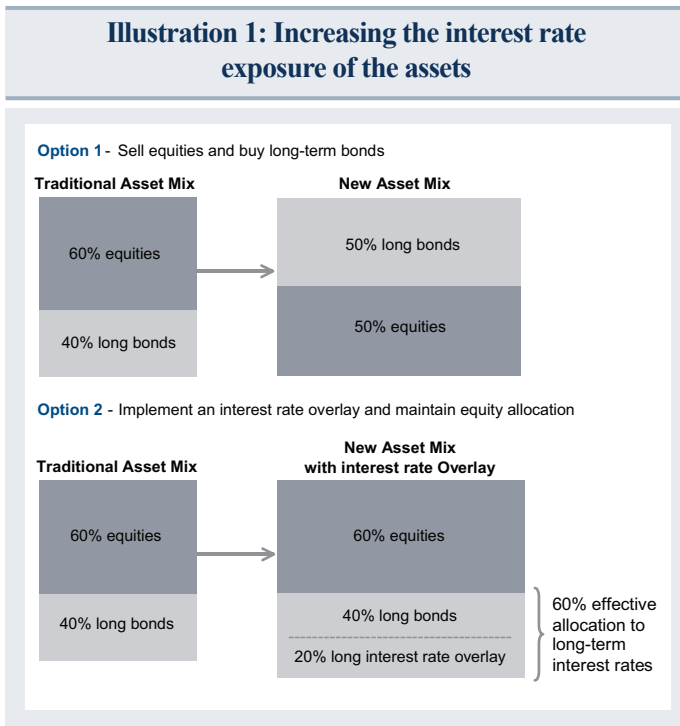
Most investors have traditionally managed the overall interest rate exposure of their bond allocation exclusively through the physical market. As an example, those looking to augment the

return contribution of their bond portfolio might have bought (in an upward sloping yield curve environment) long-term bonds offering higher yields than short-term bonds. More recently, the motivation for pension plan sponsors to buy long-term bonds has been to achieve a closer alignment of asset and liability interest rate risk. In either case, the investor has achieved the intended term structure risk by directly holding bonds. By permitting the use of fixed income overlay strategies in the investment program, investors need not be limited to the physical market in order to manage their overall term structure objectives.⁴

Example: Consider a pension plan with a traditional asset mix of 60% equities and 40% fixed income. Assume that the plan sponsor is looking to increase the interest rate exposure of the assets in order to help reduce the interest rate mismatch risk between the assets and the liabilities. One approach could be to alter the asset mix to, say 50% equities and 50% bonds. This would require an increase in the allocation to bonds at the expense of equities. Another approach is to increase the duration of the existing 40% allocation to bonds. Each of these changes can be easily accomplished. However, there may be several reasons why such changes in asset structure are not desired.⁵ The plan sponsor that does not want to disrupt the existing strategies may be able to achieve closer term structure matching through an overlay strategy. In our example, assume now that the plan “buys” an incremental 20% in bond exposure through an overlay. Both the existing equity allocation and the term structure exposure of the existing fixed income allocation are maintained. The resulting asset structure will then be: 60% allocation to equities (unchanged), 40% cash allocation to bonds (unchanged), and 20% allocation to bond derivatives. The resulting aggregate bond exposure can be structured through the use of the overlay program to achieve better term structure matching between the assets and liabilities.⁶

You have likely noticed that the allocations outlined in the above example (60% allocation to equities and 60% allocation to bonds total 120% relative to available investable cash.⁷ It is, therefore, reasonable to ask if this particular example involves the use of leverage. The short answer is yes.⁸ Despite its reputation, we encourage investors to think of leverage as a tool to reduce risk in pursuing intended investment objectives. In the example cited on the previous page, the plan sponsor has

increased asset exposure beyond 100% with the sole intention of increasing the interest rate exposure of the assets so as to more closely match the interest rate sensitivity of the pension liabilities. By using leverage in an interest rate overlay strategy, the sponsor appropriately modifies the interest rate exposure of the assets in an effort to reduce the surplus risk⁹ of the plan.



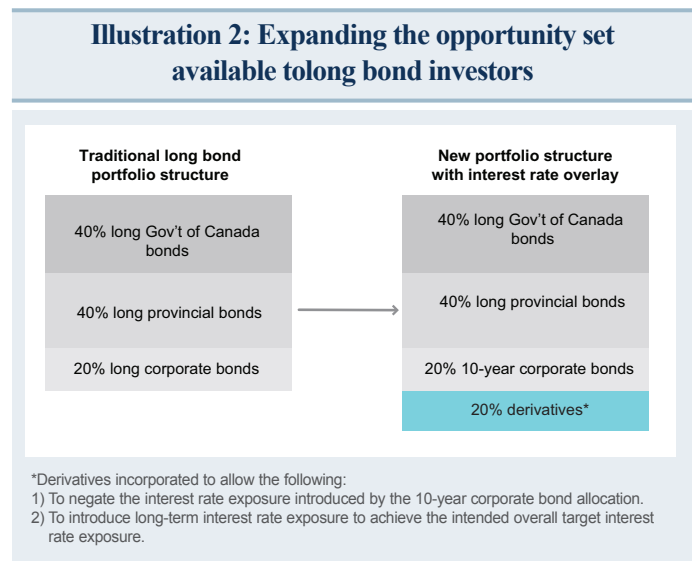
2. Using overlay strategies to expand the investment opportunity set

Overlay strategies can also enable a portfolio manager to expand the potential investment opportunity set of a given strategy. This can be important for a few reasons, including (but not limited to) the following:

- To construct potentially a more efficient¹⁰ portfolio
- To exploit the strengths of the portfolio manager’s ability to add value
- To allow for more flexibility in the implementation of the portfolio strategy

Example: Assume the plan in the earlier example has a long duration target for the fixed income allocation. A traditional approach to building a portfolio that achieves this duration objective is to purchase a diversified basket of longer-term

securities. If the manager’s mandate includes using corporate bonds to pursue additional yield for the portfolio, then they will likely include long-term corporate bonds in the portfolio.¹¹ However, factors such as supply and liquidity in the long-term sector of the Canadian corporate bond market may limit the manager’s ability to diversify the portfolio holdings appropriately, and may also negatively impact the pricing of available securities in the market. Therefore, constraining the investment set to long-term corporate bonds, in this case, may not result in the most efficient portfolio structure. An alternative approach to achieving a more efficient, broadly diversified portfolio, is to increase the spectrum of available bonds to include shorter-term issues, and to combine this with an interest rate overlay strategy that is designed to offset the duration impact of these shorter bonds. The resulting portfolio may offer a more efficient way in which to achieve the term structure objective, while still providing for incremental yield opportunities.¹²



Another potential benefit of using such an overlay strategy is that, by opening the long-term strategy up to a more comprehensive interest rate exposure profile, the breadth of the active strategy is enhanced. This increased breadth may provide the plan with a greater ability to capitalize on the active skill of the manager, as opposed to limiting potential value-adding opportunities to those available in the segment of the term structure implied by the overall strategy objective.

The expanded investment opportunity set also includes the derivatives that can be employed in the overlay strategy. A primary motivation for building an overlay framework that includes multiple derivatives instruments is to provide as much flexibility as possible to the strategy implementation. There are a number of derivative instruments that can be used in an interest rate overlay strategy, each of which can be effected differently during changing market conditions. As such, there are a variety of factors influencing the mix to be employed at any given time. Further in this paper, we discuss some of these influences, which include liquidity, implied financing costs, and counterparty risk.

3. Using overlay strategies to modify market exposures

Another reason for an overlay strategy is to establish a portfolio structure that takes into account all term structure exposures. If the pension plan has a number of fixed income managers, it might be worthwhile for an overlay manager to analyze the combined exposures of all the fixed income managers and then employ an overlay strategy to ensure that the aggregate portfolio exposures are consistent with the plan's investment objectives. This approach can be referred to as a "completion strategy", and is more comprehensive than considering each manager's portfolio in isolation in that it allows for the most complete hedging of interest rate mismatch risk between the assets and the liabilities. With this approach there is little, if any, disruption¹³ to the underlying fixed income managers. The advantage is that each manager can be left to focus on the style in which they demonstrate particular skill.

Example: Assume the plan has a skilled mortgage sector manager, and the sponsor would like to provide an allocation to that manager with the intention of focusing solely on potential added value through security selection (alpha) without specifically targeting term structure exposure (beta). An overlay manager can analyze the term structure exposures of the mortgage portfolio, and then augment any of these exposures required to meet the plan's overall objectives. Extending this example to include multiple specialist managers, we can appreciate the importance of the overlay manager in achieving the plan's asset-liability matching objective, while allowing the various managers to continue to more specifically pursue alpha (value-added) opportunities for the plan.

4. Additional applications of overlay strategies

Overlay strategies can also be used by an investor to make asset mix shifts - whether tactical or strategic in nature - without disrupting specific underlying strategies that make up the asset structure.

Example: Assume the pension plan has a strategic asset mix of 60% equities and 40% bonds, and that equities underperform bonds during a given period. In the traditional approach, in order to rebalance back to the policy mix, the plan would have to sell bonds and buy equities - both in the physical market. An alternative approach is to implement this strategic mix through the use of a multi-asset class overlay - by selling bond derivatives and buying equity derivatives (both in such a manner as to achieve the desired mix). With this approach, the underlying physical portfolios remain intact, but the plan has effectively rebalanced the overall exposures to ensure adherence to the policy asset mix. A variation on this approach is to use an overlay strategy to achieve tactical asset allocation calls. Assume that the sponsor believes that equities will outperform bonds, and they want to implement this view without disrupting the physical portfolio allocations (and, while still respecting their asset mix guidelines). Through the overlay, the plan can buy equity futures to create an overweight equity position in the asset mix, and can concurrently short sell bond exposures through the derivatives market, to reduce the bond exposure. By altering these exposures through the use of derivatives instruments, the investor has efficiently achieved the desired tactical asset mix efficiently without disrupting the underlying investments in the physical allocations.

Both strategic and tactical asset mix rebalancing through an overlay strategy warrants a more detailed strategy discussion that is beyond the scope of this article.

Regardless of the motivation, an overlay strategy can potentially provide a relevant and effective means towards meeting the policy objectives. As outlined above, an overlay solution could target term structure exposure, or free-up opportunities for adding value, without compromising the plan's desired level of interest rate hedging. Although not specifically referenced, interest rate overlay strategies can be implemented on the nominal as well as the real¹⁴ components of the fixed income market.

The Overlay Toolkit

In this section, we highlight some of the derivative instruments that can be used in the implementation of a fixed income overlay strategy. Recall that our emphasis has been on managing term structure exposures through the use of an overlay strategy and, thus, we recognize that our list here is not exhaustive.¹⁵

1. Total Return Swaps (TRS)

Total return swaps are designed to provide an investor with the total return of a pre-defined basket of securities. In the Canadian bond market, this basket has traditionally been represented by a broad market index known as the DEX Universe Bond Index.¹⁶ There have also been variations on this basket, the TRS is based on the DEX Long Bond Index and the DEX Real Return Bond Index. Also, TRS may be based on a basket of specific securities that can be customized to suit the investor.

How does a TRS work? In order to obtain the economic exposure of a basket of bonds, an investor “buying” a TRS achieves the total return of the underlying bonds within

the basket captured by the TRS. Since this is a derivative instrument, the investor achieves this exposure indirectly, (i.e., without deploying cash). In exchange for the receipt of this return stream, and in the absence of cash, the buyer of the TRS pays a financing rate to the seller.¹⁷ In other words, the investor swaps the return stream of the bonds underlying the TRS for a stream of payments representing the financing of the exposures. Please refer to Chart A for an illustration of how a TRS works.

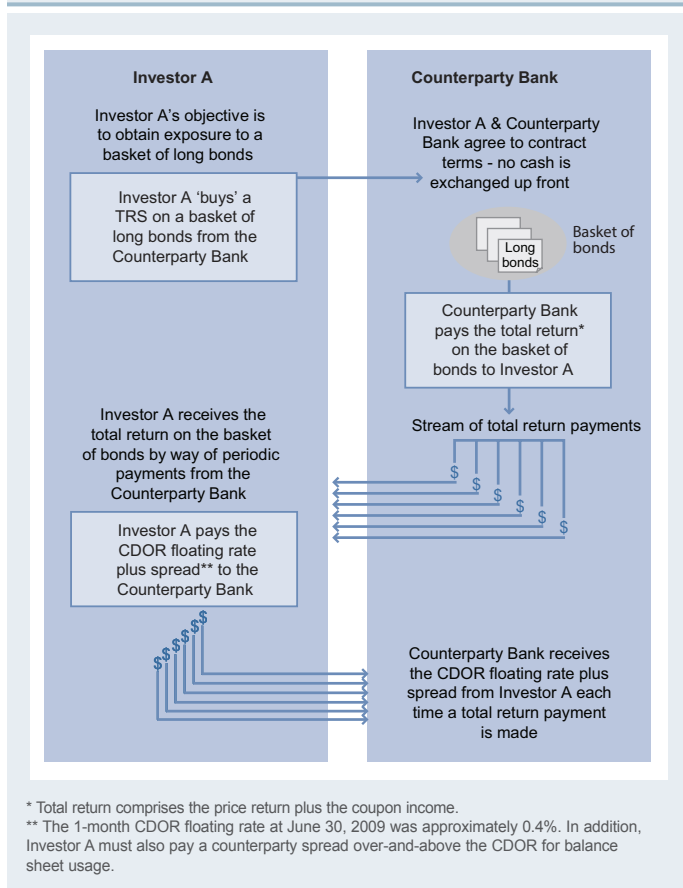
Financing costs for a TRS are driven by CDOR,¹⁸ plus a balance sheet spread charged by the seller to compensate for access to their balance sheet.¹⁹ The net return accruing to the TRS buyer is the total return received by the bonds within the TRS²⁰ less TRS financing costs.

As we witnessed in late 2007 and in 2008, capital markets can exhibit significant volatility. During this period, both CDOR and counterparty spreads increased and, therefore, a TRS solution became more costly to fund. Counterparty spreads increased as banks became more reluctant to assume balance sheet risk, given the tighter credit conditions in the market. This is reflected in the spread over CDOR at which the TRS is priced. For example, generally speaking, in late 2008 the spread increased by roughly 20-25 basis points, and approximate costs for a broad market TRS increased to 50 basis points above CDOR. Financing cost is an important consideration when choosing the appropriate combination of derivative instruments to use in a fixed income overlay strategy.

What determines the basket of bonds that is represented in the TRS? Ultimately, it is the investor’s objectives. In our plan example, where the key objective is to extend duration and manage term structure risk, an appropriate basket might simply consist of the DEX Long Bond Index. Alternatively, if customization of the bond exposures is more relevant, then a basket of long-term Government of Canada, provincial government, and possibly corporate and mortgage securities might be appropriate. Moreover as we discussed earlier in the document, we need not constrain the corporate and mortgage sector allocations to securities with long duration exposures.

Including non-Government of Canada bonds within the TRS has the potential to enhance the total returns of the bond portfolio (and defray some of the financing costs associated with the overlay) through the incremental (credit spread) yields offered by these bonds. However, as with a physical portfolio, it is

Chart A: Total Return Swap Example



important to consider the risks of the underlying securities when seeking incremental yields in any strategy.²¹ In this regard, the primary incremental risk that must be assessed is default/credit risk of these non-Government of Canada issuers. We discuss this in greater detail in the “Risk Considerations” section below, we discuss this in detail.

Despite the exposure to the bonds being obtained indirectly through the TRS, an active manager can still pursue value-adding opportunities through security selection of the basket within the TRS structure. In other words, the active manager determines the appropriate bonds that make up the basket in order to achieve the objective of return enhancement and/or to offset some of the financing costs of the overlay program. The basket of bonds need not be static in nature and can be modified from time-to-time. Altering the underlying basket of bonds can also ensure that the exposures are maintained in accordance with the overlay guidelines and objectives.

Total Return Swap (TRS) Profile	
Market Exposure	Broad Market Index/sub-index
Matching	Duration and term structure
Financing Cost	CDOR plus spread
Return	Government and credit
Liquidity	Limited
Counterparty	Bank
Typical Tenure	1-year

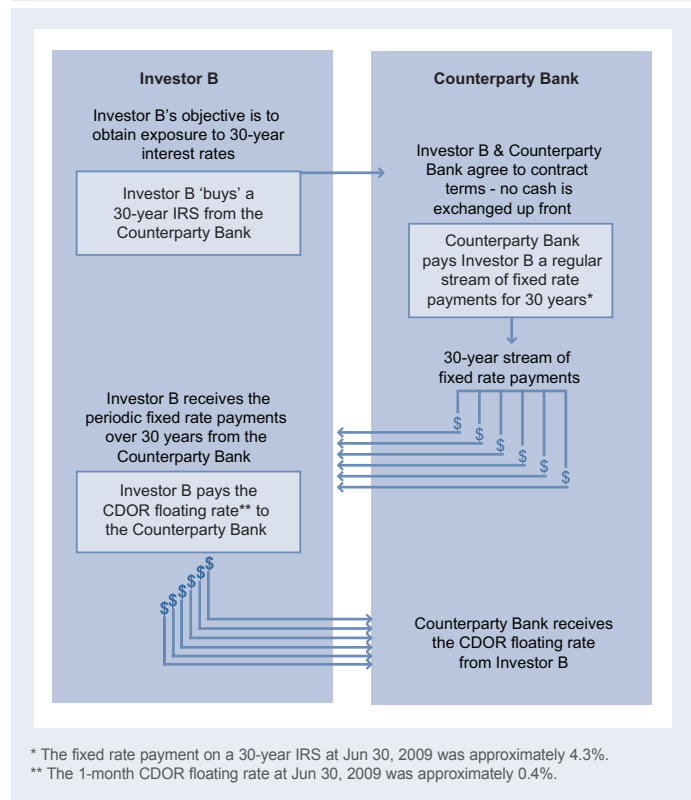
Incremental credit risk is introduced on the notional amount through TRS on any non-Government of Canada debt exposure that is represented in the underlying basket of bonds.

2. Interest Rate Swaps (IRS)

Interest rate swaps represent an exchange of fixed for floating interest rates for a specified period of time, which is determined by the tenure of the swap (please refer to Chart B for an illustration of the flows of an IRS).

IRS can be employed in an overlay strategy to modify both the interest rate sensitivity (duration) and the term structure of the fixed income assets. A series of IRS can achieve an intended term structure exposure. How does an IRS work? Continuing with our Plan example, we now look at two primary uses of interest rate swaps:

Chart B: Interest Rate Swap Example



1) to improve the term structure matching of assets to liabilities, and 2) to allow for a broader range of investment opportunities that are not constrained by the term objective of the overall fixed income portfolio objectives.

An investor who “buys” a 30-year IRS effectively receives a fixed coupon payment for the full 30-year tenure of the swap. This receiving component is akin to the coupon payments received if the investor simply buys a 30-year fixed-coupon bond. The actual fixed yield received on an IRS combines the yield of an equivalent-term Government of Canada fixed-coupon bond, plus a credit spread. The credit spread reflects the credit risk of the counterparty (i.e., an A- or AA-rated bank).²² Where the IRS buyer (receiver of fixed rate of interest) and the buyer of the actual bond differ is on the cash required to achieve this economic exposure. Unlike buying the 30-year bond, no cash outlay is required to obtain this economic exposure since the IRS is a derivative instrument.²³ As was the case with the TRS, in order for the plan to achieve this economic exposure without deploying cash, a counterparty bank is required to provide financing. The financing rate of an IRS is based on the

CDOR level (previously described for the TRS example).

Improving the term structure characteristics of the fixed income portfolio: Assume the plan’s term structure objectives can be mostly captured by extending the duration of the existing assets. Assume also that the sponsor does not want to disrupt the existing asset structure. The plan can enter into a 30-year IRS agreement and receive a fixed rate of interest for 30 years, in exchange for paying a floating financing rate for the same duration. In other words, the plan “swaps” a variable financing rate in order to receive a long-term fixed rate of interest.

Allowing for a broader investment opportunity set in the fixed income portfolio: This has been described earlier in this document, and here we will put some IRS context around how this might work. Assume the plan with a long duration objective allows for mortgage securities in the fixed income portfolio, but that the best opportunities in the mortgage market are in shorter-dated segments of the market. The plan has two choices – exclude these mortgages, since they do not fit into the long-term duration objective of the portfolio, or use an IRS strategy to pursue the value-added potential of these mortgage securities. With the latter option, a possible structure including IRS overlay might look like this:

- 1) Buy a 5-year mortgage.
- 2) Offset 5-year term structure risk with an IRS by paying a fixed rate of interest on a 5-year term and, in exchange, receiving a floating rate of interest.
- 3) Extend the duration through an IRS by receiving a fixed rate of interest on a 30-year term and, in exchange, paying a floating rate of interest

Result: The pension plan achieves mortgage exposure (potential value-added) while still allowing for duration matching.²⁴ (This example is similar to that depicted in Illustration 2 earlier in the document.)

As is central to any asset market, supply and demand dynamics affect the “price” of the fixed interest rate. For example, Canadian banks are large participants in the IRS market, with much of their activity determined by balance sheet hedging requirements. If the banks need to pay fixed interest rates, then, all else constant, the yield on the IRS will move higher. Conversely, should they need to receive fixed for floating rates of interest, then the fixed yield on IRS will fall. In late 2008 and early 2009, the IRS

market experienced more receivers of fixed for floating, which pushed IRS yields sharply lower. This means that an investor looking to receive fixed rate payments through an IRS was, all else constant, receiving lower relative compensation fixed interest rate than before.²⁵ So, it is important to consider the implications that the market environment has on the pricing of an IRS when incorporating into an overlay program.

Derivative Instrument: Interest Rate Swap (IRS) Profile

Market Exposure	Government of Canada plus swap spread
Matching	Duration and term structure
Financing Cost	CDOR
Return	Government plus changes in swap spread
Liquidity	Limited
Counterparty	Bank
Typical Turnure	Term of swap

Incremental credit risk exists on the net exposures of fixed vs. floating cash flows.

3. Bond Forwards/Bonds with Delayed Settlement (BDS)

A BDS is another effective way to achieve bond market exposure in an overlay program. As with the TRS and IRS, a BDS achieves bond market exposure without an initial outlay of cash, and therefore a financing aspect exists. We describe this aspect below, and highlight how it differs from the funding implied in the TRS and IRS. Exposures to an underlying basket of bonds through a BDS structure will allow for a customized approach, and close matching of interest rate exposures.

Here is how a BDS works: The investor desiring bond market exposure buys a bond, or a basket of bonds, but since no cash is available for conventional settlement (exchange of cash for bonds), the settlement date is extended to a date beyond standard settlement convention.

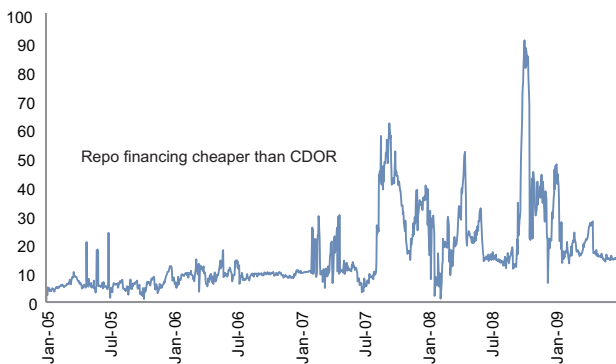
When this extended settlement date nears, a new trade is established that eliminates the original exposure and simultaneously substitutes it with a new, longer dated settlement position. The process of extending the settlement out at maturity is called the “roll” process. During this roll, market exposure must be maintained at all times. The analogy to currency forwards is often referenced to conceptualize how BDS work.

The trades are not intended to be “settled”, meaning that the market exposure can be maintained under the BDS overlay program, without requiring cash movement that would be required under conventional settlement.

Continuing with our example, the plan can manage the term structure objectives through the BDS overlay in a manner similar to using a TRS. That is, the plan can achieve exposure to a basket of bonds that can modify the term structure to meet the overall portfolio’s objectives.

The financing cost of a BDS differs from the cost of the TRS and IRS.²⁶ With BDS, the financing cost is driven by Government of Canada repurchase²⁷ rates (repo), as opposed to CDOR. Repo is generally lower than CDOR and reflects a secured borrowing rate, whereas CDOR reflects the credit risk of banks/corporate issuers.²⁸ The relationship between repo and CDOR is also driven by market conditions, and therefore fluctuates over time. This price relationship is highlighted in Chart C which outlines the difference between CDOR and repo rates.

Chart C: One-month CDOR versus Repo

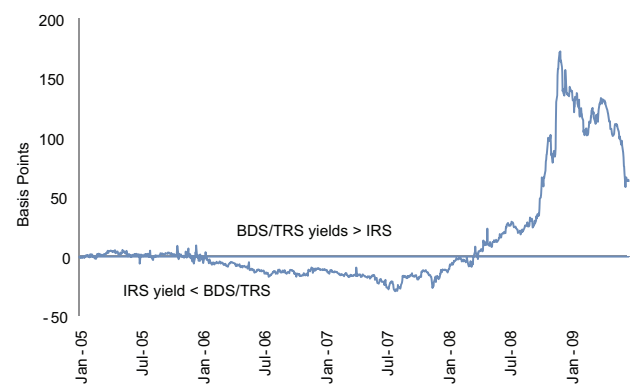


The financing cost of BDS tends to be more favourable and the differential can be significant. However, as shown by the chart, the relationship can change meaningfully in different market environments. Therefore, the funding difference between the CDOR and repo rates must be considered in the decision as to which derivative instruments to employ in such an overlay strategy.

At the present time, BDS are currently only traded on federal and provincial government bonds. Therefore, if the plan is looking for incremental credit exposure beyond the provincial government sector, they must look beyond BDS. As is the case

with TRS, any non-Government of Canada bond exposure achieved through BDS must be considered on a look-through basis and, in particular, with regard to the incremental credit risk.

Chart D: 30-year Government of Ontario bond versus Interest Rate Swap



In Chart D, we compare the yield spread of a 30-year Government of Ontario bond, which can be achieved through BDS, with a 30-year IRS. As we noted above, IRS spreads fell considerably in late 2008. At the same time, yield spreads on Ontario bonds were increasing dramatically. So, all else constant, if the plan sponsor were looking for 30-year interest rate exposure and were comparing the potential yield difference between a IRS and a BDS, they might look to chart as it highlights this yield differential. For example, in late 2008, the yield advantage to the plan of using a 30-year Ontario BDS versus a 30-year IRS increased to more than 150 bps.²⁹ Despite this significant yield differential, the IRS may still be an appropriate instrument for achieving the desired exposures in the portfolio.³⁰

Bond Forwards/Delayed Settlements (BDS) Profile

Market Exposure	Government various terms
Matching	Duration and term structure
Financing Cost	Repo
Return	Government
Liquidity	Very good
Counterparty	Bank
Typical Tenure	3-month

Incremental credit risk is introduced on the notional amount through TRS on any non-Government of Canada debt exposure that is represented in the underlying basket of bonds.

Illustration 3: Comparing traditional physical bond trade with bond forward trade

	Traditional bond trade	Bond forward trade
T+3 date		
Trade/economic exposure	Buy \$100m market value CAN 5% December 2037	Buy \$100m market value CAN 5% December 2037
Settlement	T+3	T+3
Cash movement	\$100m cash wire custodian to dealer	None
Movement of securities	\$100m market value of CAN bond sent through to client account	None
T+3 date		
Cash movement	None	Mark-to-market ³¹ ("m-t-m")*
Trade required	None	Roll position another 30 days or substitute for new bond and roll
Economic exposure	Maintained	Maintained

* If yields increase, then plan has negative m-t-m and must send cash or securities to dealer.
 * If yields decrease, then plan has positive m-t-m and dealer must send cash or securities

4. Government of Canada Bond Futures (CGBs)³²

Buying Government of Canada bond futures enables an investor to achieve exposure to specific term segments of the Government of Canada bond market. An investor buying a CGB receives the total return of the Government of Canada bond underlying the futures contract, without deploying cash up front.³³ Since cash is not required, the investor must pay a financing rate in exchange for the economic exposure provided by the contract. CGB costs are driven by the repo rate (like BDS) and, therefore, are typically lower than for TRS and IRS. For the plan to extend duration, it can buy CGBs. The ability to do so, however, may be constrained by liquidity conditions of the CGB market.³⁴ CGBs might also be employed in the overlay in broadening the investment opportunity set. Referring back to

the IRS section, the plan may substitute the use of a 5-year IRS (where the plan paid a fixed rate of interest in order to offset the term structure risk of the 5-year mortgage security), with a short position in a 5-year Government of Canada futures contract,³⁵ and then extend duration with a 30-year CGB.

Derivative Instrument: Interest Rate Swap (IRS) Profile

Market Exposure	Government of Canada various terms
Matching	Duration
Financing Cost	Repo
Return	Government of Canada
Liquidity	Limited to 10-year contract
Counterparty	Clearing corporation
Typical Tenure	3-month

Incremental credit risk: There is effectively none since Government of Canada risk is assumed to be.

An important distinction between a CGB and the other derivatives described earlier lies in the counterparty risk assumed. Since CGBs are exchange-traded, the counterparty is the relevant clearing corporation rather than a financial institution.³⁶

Although their applicability may be limited, CGBs may still have a role in an overlay strategy that looks to manage term structure risk or provide for a broader investment opportunity set.

Summary of Instruments 1-4
As of June 2009*

	Yield Derived From	Yield Estimate	Financial Cost
TRS	Assume: Long Bond Index	5.0%	CDOR of 4.0% plus 0.5% spread = 0.9%
IRS	30-year IRS	3.9%	CDOR of 4.0%
BDS	Assume: Long Govt Bond Index	4.5%	repo = 0.25
CGB	10-yea ^r	3.2%	repo = 0.25%

* This is an illustration, and not intended to be precise evaluation, as certain aspects have not been defined, such as: duration adjustments, sector allocations, security specific allocations, etc.

5. Global Government Bond Futures (GGBFs)

Global government bond futures are another derivative instruments that may be useful in an overlay program, particularly when capacity constraints present themselves in the Canadian market. These futures offer access to other markets that usually include more liquid term structure coverage than the CGBs. However, GGBFs introduce basis risk³⁷ and the overlay manager must consider whether this additional risk is appropriate for the plan's portfolio, particularly if the liabilities are domestic in nature and are valued using Canadian interest rate assumptions.

As in any overlay program, the key to success using these instruments is understanding and managing all risks and costs specific to these instruments.

Derivative Instrument: Interest Rate Swap (IRS) Profile

Market Exposure	Foreign Sovereign Government various terms
Matching	Duration
Financing Cost	Repo
Return	Sovereign governments
Liquidity	Very good
Counterparty	Clearing corporation
Typical Tenure	3-month

Incremental credit risk: Potentially introduced, depending on degree of sovereign credit risk.

Influence of Yield Curve Shape on Overlay

It is also worth mentioning that the shape of the yield curve has an important influence on an overlay strategy like the duration extension strategy discussed above. As described earlier, this type of overlay generally involves obtaining long-term market exposure via short-term variable rate financing. When the yield curve is “normal”, the plan finances at lower rates than it invests.³⁸ The greater this positive differential between long-term and short-term interest rates, the more favourable the environment for the overlay. Conversely, if short-term rates are higher than long-term rates, then the financing aspect of the duration extension program becomes more costly to the plan.

Documentation Requirements

Any overlay strategy involves the use of derivatives, which will require specific documentation to implement. Investors establishing overlay strategies in their own proprietary segregated account are ultimately responsible for the negotiation of any documentation required. For this account structure, the investor will also have direct counterparty risk to the specific derivatives counterparties. For over-the-counter derivatives, this typically means having ISDA³⁹ agreements in place with potential counterparties, which would likely be further supported by a Credit Support Annex (CSA). For exchange-traded derivatives, a futures account with the clearer is required.

For some fixed income solutions, a pooled fund trust structure (Trust) might be established, with the overlay strategy being embedded in the Trust itself. Although the investor will have their pro-rata share of market and counterparty risk through ownership of units of the Trust, the Trust is the actual counterparty to any trade therein. Also, the Trust assumes all the operational and management aspects of the overlay strategy implementation. As with any pooled fund trust structures, the investor would need to be satisfied with the Trust's investments and strategies, including the permitted use of derivatives in the pooled approach.

Risk Considerations

There are several considerations influencing the decision as to which over-the-counter (o-t-c) instruments should be used in a fixed income overlay program. Some of these factors have been described above, while others are outlined below. Responsibility for understanding and managing the risks of the overlay program should rest with the asset manager hired to manage the overlay structure, and these should be well communicated to the client whose portfolio employs such strategies. Since market conditions change, the manager must continually monitor the risks and rewards associated with the derivatives instruments available to the client's overlay program. As a result, the structure and investment policy should give the investment manager enough flexibility to use appropriate instruments at any time, while still respecting the client's risk tolerance and preferences. It is important, therefore, to consult with the asset manager when defining or refining the investment policy of the portfolio.

Given the market conditions that prevailed in late 2007 through mid 2009, it is appropriate to dedicate some discussion to counterparty risk and leverage.

Counterparty Risk

The value of a derivative depends not only on the performance of the underlying asset but also on the ability of the counterparty to deliver on the promised cash flows for the duration of the contract. Therefore, an investor in an o-t-c derivatives instrument has to undertake credit analysis of both the underlying corporate credit and the counterparty.

Counterparty risk can be controlled by two factors:

- a) structuring the contract so that there are regular payments – both in terms of market-to-market (m-t-m) and margin/collateral adjustments; and b) choosing and maintaining high quality counterparties.

An overlay manager should have a process to undertake rigorous credit assessment of potential counterparties. Within this framework, there should be specific criteria that all potential counterparties must meet in order to remain on an approved list. In addition, pre-specified m-t-m limits for each counterparty should be monitored and managed. This generally includes terms within a CSA, but can also incorporate an established collateral/margin posting procedure in order to further mitigate counterparty risk.

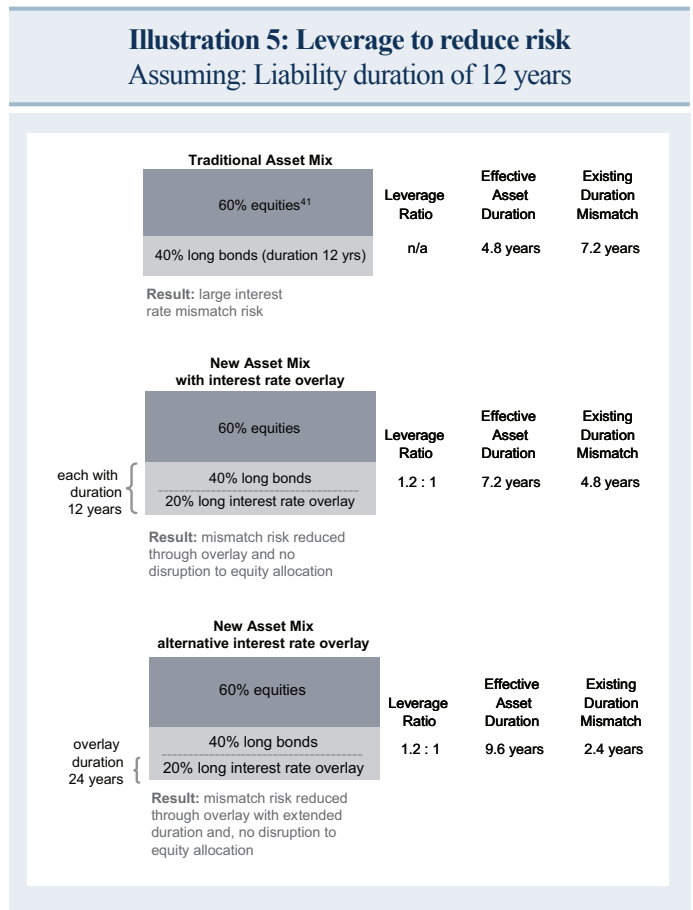
Leverage

Leverage is an important component of any overlay strategy. As such, it is necessary for an investor using overlay strategies to be comfortable with the degree to which leverage is employed in the strategy. Traditionally, leverage has been synonymous with incremental risk – and less-than-desirable outcomes have resulted from the excessive use of leverage by less-than-prudent managers. However, leverage can also be used to improve the risk/reward profile of investments and, even, to reduce the relative risk of the asset portfolio.

For discussion purposes in the context of overlay strategies, we can define leverage as the use of the same dollar more than once in a portfolio. We can further distinguish between two common interpretations – accounting leverage versus economic leverage – and acknowledge that within any classification of leverage, there can be different outcomes for different investors.

The distinction is important because an investor can increase accounting leverage without a corresponding increase in relevant economic risk, or can increase economic leverage in order to reduce relevant risk (hedging).

Recall our plan that wants to reduce interest rate mismatch risk between its assets and its liabilities (surplus risk) without disrupting its existing 60% equities / 40% bonds asset mix. The plan sponsor implements an interest rate swap overlay to accomplish this goal. More specifically, using derivatives, the plan obtains a further 20% in long bond exposure. The resulting asset mix then is as follows: 60% allocation to equities, and 60% fixed income allocation, suggesting that accounting leverage of 120% of capital (accounting leverage ratio of 1.2:1) has been introduced through the overlay strategy. Absolute risk/exposure has been increased because of the incremental interest rate exposure. However, the relevant risk measure, being surplus risk, is actually reduced, since the interest rate mismatch between assets and liabilities has been further reduced with the introduction of leverage through the overlay.⁴⁰



Credit Risk

A Canadian bond investment strategy that includes non-Government of Canada debt will have exposure to credit risk (i.e., the risk that the issuer will default on their debt obligations). When assessing credit risk in an overlay strategy, it is important to consider not only the counterparty risk, as described above, but also both the default risk and market-related spread risk as well. We illustrate each of these risks in the context of an overlay strategy by way of examples:

Example 1 - Default risk:

Assume that an overlay strategy includes a Province of Ontario BDS position. This exposure will provide the investor with a yield level that exceeds the risk-free (Government of Canada) rate (yield spread) in order to compensate the investor for the default risk assumed. Specifically, in the context of credit risk, with this BDS position, the portfolio is exposed to the risk that Ontario defaults on this debt obligation.

Example 2 – Spread risk:

The yield compensation discussed in Example 1 can fluctuate from time-to-time based on changes in perceived default risk of Ontario, or other factors (such as liquidity) that more broadly affect the credit markets. Also, with regards to the latter, assume now that the overlay strategy includes an IRS position. In this case, the investor is subject to changes in these spreads at any time until the maturity of the contract. For IRS positions that are designed to achieve economic exposure to bonds, any interim increase in spreads may dampen the m-t-m return of the overall strategy. This would also be true for the Ontario BDS exposure as well.

As highlighted above, with these strategies, it is necessary to fully assess any exposures gained through the overlay. Therefore, for any non-Government of Canada exposures achieved through an overlay strategy, the credit risk must be deemed additive and must be managed with full regard to the plan's investment policy restrictions. Also, as highlighted in Example 2, the risk of changes in the credit spreads of the various instruments used must also be incorporated in the overall risk analysis.

Roll Risk

Each of the derivatives instruments discussed has an expiry date. This finite term aspect is also a key characteristic of bonds in that they have maturity dates at which time the loans to the issuers are to be repaid in full. For both types of investments, the investor must be mindful of the holding period. In order to maintain the desired market exposure at all times, the investor must in effect re-invest at one point in time or another. In the physical market, an investor owning a 10-year bond holds the bond to maturity until 10 years after its issue date⁴² – at which time they will need to achieve the intended market exposure with the purchase of another bond. For many derivatives contracts such as TRS, BDS, and CGBs, the contract lives are typically 3-months, while for an IRS the lifespan is dictated by the term of the IRS itself. This re-investment process for derivatives with shorter contract lives is often referred to as “rolling” and is determined by the specific parameters of the contracts themselves. As an example, an investor buying a BDS on a 30-year bond may agree to a 3-month expiry date on the contract, or similarly, the expiry term on a CGB is 3-months as well. At some point in time prior to the 3-month maturity date of the contract, it must be rolled to a new 3-month term to expiry. The key risk that needs to be managed by the overlay manager during this roll process is to ensure that intended market exposure is maintained at all times through the roll.

In implementing overlay strategies, there are other risks that must also be monitored and managed, and may include: market risk, operational risk, roll risk and liquidity risk – each of which may be unique to the particular instrument used.

We have included a summary (Table 6) highlighting the different characteristics of the derivative instruments used in the interest rate overlay strategy discussed here.

Table 6: Comparing costs of select overlay instruments

	Financial Rate	Economic Exposure	Flow	Yield to Investor
TRS	CDOR + counterparty spread highest	Basket of bonds	Receive total return of income plus price change* of basket of bonds in exchange for CDOR floating rate plus counterparty spread	Dependent on basket of bonds underlying the TRS**
IRS	CDOR	Fixed interest rate	Received fixed rate of interest for tenure of IRS Pay CDOR floating rate of interest	Government of Canada yields plus counterparty risk premium Normally less than TRS corporate component, but greater than government component
BDS	Repo	Basket of bonds	Receive total return of income plus price change* of basket of bonds in exchange repo floating rate	Dependent on basket of bonds underlying the BDS** Normally less than IRS and TRS corporate component

*Prices can increase or decrease, so as with physical bonds, the total return of the basket can be either positive or negative.

**TRS basket may include corporate bonds, which may offer higher yield premiums.

***BDS basket will consist of government bonds only.

Implementation

The trade-off between opportunity risk and transaction costs/market impact must be managed with regards to the prevailing market environment at the time of implementation. This is particularly relevant in illiquid market environments. Liquidity, or lack thereof, must be factored into the implementation strategy. The pension plan sponsor should work with an overlay manager to establish appropriate parameters for implementation. For larger fixed income portfolios, for example, it may be prudent to adopt a phased-in approach to implementation.

Monitoring of Positions – Policies & Procedures

In order for an overlay manager to be effective, it is critical that this manager have pre-established rigorous controls for managing and monitoring derivatives exposures within the overall portfolio being managed. A risk management framework that encompasses two key components is a strong starting point:

1. Sound policies and procedures for using derivatives

As derivatives are used in any overlay strategy, it is important that their use be guided by well-established, sound, and disciplined policies and procedures that are specific to the unique incremental considerations that derivatives require. These policies and procedures should be determined by risk and compliance professionals and systems, and with appropriate input from the investment professionals implementing derivatives strategies. It should incorporate all aspects of monitoring, measuring and reporting of derivatives positions and transactions, including description of checks and balances and outlining responsibilities and accountabilities.

2. Integrated portfolio analytics and risk management

An interest rate overlay manager should also have a portfolio management system designed to measure and monitor all the risks and opportunities for all fixed income portfolios, whether the exposures incorporate physical or derivatives positions (or both). This system should have the ability to analyze the cash flows of a derivative instrument in the same way as it analyzes the cash flows of a traditional cash bond, including the ability to model optionality. There are several important elements of policies and procedures for derivative investing that an investor should demand from their overlay manager. They are not described here, as they are more suitably covered in discussions between the investor and the manager.

Valuation and Pricing

Pricing of derivatives positions held within any overlay strategy should follow an established, prescribed process. This process is consistent with that for cash market (physical) securities, with the pricing being provided by the custodian to ensure independence. The overlay manager should also conduct price verification and reasonableness tests to mitigate the risk of inaccurate pricing of any derivative security. This pricing function should be independent from the portfolio management and trading process, to help mitigate potential conflicts of

interest. For mark-to-market (“m-t-m”) purposes on o-t-c derivatives, the relevant counterparty provides the pricing. The overlay manager’s accounting group should also check the prices for reasonableness, since this process may impact potential interim cash flows within an overlay strategy.

Conclusion

A pension plan sponsor may consider using an overlay strategy in order to manage the overall risk, term structure or asset exposures of the plan’s portfolio, or simply to expand the range of value-adding investment opportunities available to the manager. The choice of overlay will be determined by the specific need being addressed within the portfolio, the prevailing market conditions for the underlying physical assets and for the derivative instruments used in the overlay, and the availability of a qualified counterparty, as well as the willingness of the sponsor to assume the risks associated with the chosen strategy and bear the cost of implementation. In many ways, overlay strategies offer plan sponsors the ability to manage their managers, potentially giving managers additional latitude and scope to use their respective area of investment expertise to the benefit of the plan, while the overlay manager maintains the aggregate portfolio’s adherence to the plan’s investment policy and objectives. This is equally true for plans with one manager as it is for those with multiple managers. There are many more types of overlay strategies than the five cited in this paper, but we chose to focus on those of particular relevance to pension plan portfolios and of immediate relevance within the context of the PH&N investment funds that are able to deploy overlays. We hope this report serves as a helpful reference for fiduciaries interested in developing a sufficient understanding of the instruments and issues that they are comfortable permitting their investment manager to use overlay strategies.

End Notes

- ¹ We focus our discussion here on ways a plan can use overlay strategies to more closely align the interest rate risk of the fixed income portfolio with the liabilities (i.e., the liability benchmark).
- ² In our discussion on how to use overlay strategies to allow for additional potential value-added strategies, our focus is on fixed income strategies with long duration targets. The strategies that we describe are not designed to “gear up” returns through explicit and/or excess leverage. Using overlay strategies to make tactical portfolio adjustments, as well as strategies that separate market and pure value-added exposures (known as portable alpha strategies) are beyond the scope of this paper.
- ³ For investors with multiple fixed income managers, it may be most efficient to have a single overlay manager who incorporates the aggregate relative exposures of all managers to ensure that the combined overall strategy is structured in an appropriate manner. “Master manager” is a term that has recently emerged in the market to describe this approach.
- ⁴ By term structure objectives, we are referring not only to the desired interest rate exposure from the perspective of duration (which generally measures the sensitivity of the bond portfolio to small changes in interest rates), but also to the sensitivity of the bond portfolio to changes in the shape of the yield curve. An example contrasting the physical and overlay approaches on the duration extension objective is illustrated as follows: the plan may extend duration in the physical market by using strip securities with long-dated maturities. This might cause the plan to have unintended exposure to changes in the shape of the yield curve, since the maturities may be concentrated on the long end of the yield curve (referred to as “bullet” exposure). In contrast, with an overlay approach, the plan can replicate the term structure desired through the use of derivatives (in exchange for a floating financing rate – described in more detail later in this paper).
- ⁵ The plan may prefer exposure to equities and other asset classes in the asset portfolio in order to capture potential incremental returns offered by these non-fixed income asset classes.
- ⁶ As we will discuss in the Overlay Toolkit section, the use of various instruments within the overlay can be quite specific so as to target term structure exposures at the overall asset portfolio level.
- ⁷ In our discussion of overlay strategies, we reference a financing component. In order to put this into context, we make the following analogy. Assume that the plan investor has existing investments, and would like to increase their bond allocation to reduce the interest rate mismatch of their assets and liabilities but does not want to change the existing investments. In this case, there are basically two choices – borrow the money and buy bonds, or use an overlay strategy to achieve this bond exposure indirectly. If the plan borrows to buy the bonds, then they will receive the return stream of those bonds, and will be obligated to repay the loan over the term of the loan (assume that the borrowing rate is a variable rate of interest). Alternatively, the plan does not borrow the funds required to buy the bonds, but instead uses derivatives within an overlay strategy, whose prices incorporate and therefore are adjusted to reflect an implied typically variable financing rate. Section 8502(i) of the Regulations to the *Income Tax Act (Canada)* limits the ability of pension plans to borrow and, therefore, the former option is likely not feasible. However, since the latter option does not involve explicit borrowing, it may be an appropriate approach. Nonetheless, we recommend that plans looking at these types of strategies obtain tax advice prior to implementation.
- ⁸ Leverage is in the eye of the beholder, so to speak. There are multiple interpretations of the use of leverage, including accounting leverage, economic leverage, and “using the same dollar twice”. We caution against a generalized dismissing of leverage and recommend instead that clients focus more on how the leverage is used in the control of this portfolio risk.
- ⁹ Surplus risk refers simply to the risk that the growth in plan assets will be insufficient to meet the promised pension payments.
- ¹⁰ Through the article, we refer to the concept of improving the “efficiency” of the asset structure. What we mean by a more efficient structure is one that exhibits a better risk/reward profile i.e., either a lower level of (expected) risk for a given level of (expected) return, or a higher level of (expected) return for a given level of (expected) risk.
- ¹¹ We acknowledge that in managing fixed income allocations in a surplus risk framework (as opposed to asset-only), the use of corporate bonds may be influenced by the plan’s liability valuation methodology. We are also aware that some investment professionals believe that corporate bonds ought not to play a role in this surplus risk approach, and that the risk is better taken elsewhere in the asset structure. Here, we neither accept nor refute these opinions. Instead, we assume that corporate bonds (and other “risky” bonds offering a credit yield premium, for that matter) do play a role in the fixed income allocation and within an overlay fixed income structure.
- ¹² As an example, in an environment where the credit curve is flat (i.e., incremental credit spread yields across the maturity spectrum are similar), then owning a 10-year corporate bond will provide the same compensation through credit spread as would a 30-year corporate bond from the same issuer. One can argue that, in this instance, there is no need to assume the incremental default risk associated with the extra 20-year maturity profile. As such, in buying the 10-year bond, the investor assumes less risk for a similar return profile, thereby improving the risk/reward (efficiency) of the portfolio. Of course, we still need to recognize the higher degree of credit leverage in the 30-year corporate bond versus the 10-year corporate bond and the implications on potential returns should the shape of the credit curve flatten (better for 30-year corporate bonds) or steepen (better for 10-year corporate bonds).
- ¹³ Rebalancing is an important element of managing asset mix to ensure that policy objectives are met. However, it can be disruptive to asset managers in that it results in the need for trading activity. This trading activity may lead to unnecessary transaction and operational costs but, perhaps more importantly, may also cause underlying managers to make undesirable portfolio modifications, resulting in opportunity costs as well.
- ¹⁴ Real = Inflation-adjusted.
- ¹⁵ We have focused mostly on the role of overlays in term structure management. As a result, fixed income derivative instruments such as credit default swaps (CDS) and inflation swaps, while having their own merits in a potential overlay strategy, are not discussed. Similarly, options, swaptions, caps, collars, and other interest rate derivatives are beyond the scope of this discussion.
- ¹⁶ The term often used to describe generic market exposure is “beta”. In our example, a traditional Canadian bond market beta has been the DEX Universe Bond Index. However, beta can also refer to a given basket of securities representing the intended exposures customized to the investor’s investment objectives.
- ¹⁷ The “seller” refers to the counterparty, who is contracted to pay the investor the total return stream of the bonds in exchange for financing payments. The counterparty is typically a major financial institution.
- ¹⁸ CDOR stands for Canadian Depository Offered Rate, which is an average daily fixed benchmark interest rate at which Canadian banks borrow funds, in marketable size, from each other, for tenures of up to three months.
- ¹⁹ This financing provided by the counterparty is basically for balance sheet facilitation (“rental”) in that the plan uses the counterparty’s balance sheet capacity to effect the trade. With the overlay strategies that we are describing, the plan is not explicitly borrowing from the counterparty. However, in order to achieve the exposure without cash, the derivative instrument used must incorporate a financing element.
- ²⁰ With physical bonds, the total return of an overlay strategy includes interest income as well as price appreciation or depreciation resulting from changes in interest rates and/or yield spreads.
- ²¹ Any non-Government of Canada bond exposure in the TRS should be considered on a “look-through” basis when assessing its contribution to credit risk at the overall portfolio level. By “look-through”, we mean that when analyzing the exposures, we treat the bonds in the TRS basket as if they were actual physical positions held in the portfolio.
- ²² In theory, the IRS should provide compensation (in the form of yield) that combines the yield of a risk-free bond (Government of Canada), plus an extra yield spread for assuming the counterparty risk of the IRS. However, as we have seen in past markets, the extra yield compensation for assuming counterparty risk may not always be positive.
- ²³ In fact, the IRS buyer is like a bond investor who borrows cash to buy the actual bond.
- ²⁴ To add a bit more detail, the plan is economically exposed to the yield spread offered by the mortgage allocation, but has effectively offset the 5-year term risk that accompanied the original mortgage purchase. Receiving a fixed rate of interest on the 30-year IRS provides the desired economic exposure to long-term interest rates to more closely match the term of the liabilities. Note that the floating financing payment on the 30-year IRS is offset by the receipt of the floating financing rate on the 5-year IRS.

- ²⁵ As an example, IRS spreads became negative across the term structure in late 2008. In fact, 30-year IRS declined to a low of about -50bps, meaning that an investor “buying”/receiving fixed rates on 30-year IRS, received a yield that was 0.50% lower than the yield on an equivalent 30-year Government of Canada bond.
- ²⁶ The main reason for this is due to the difference in the counterparty’s balance sheet treatment of the different instruments.
- ²⁷ The Repurchase Rate (“repo”) represents a short-term borrowing rate at which banks and investment dealers can lend/borrow government securities to/from each other on a secured, and usually on an overnight, basis. A repo is an agreement to sell a security and simultaneously buy it back (repurchase it) at a pre-determined date and price. This type of transaction allows banks to effectively manage short-term balance sheet cash requirements.
- ²⁸ We indicate “generally” here since, due to credit risk implications, theory suggests that CDOR will always exceed repo. However, there is a possibility (albeit, remote) that market conditions could result in a reverse of this relationship.
- ²⁹ As we noted earlier, there is incremental credit risk associated with an Ontario BDS versus the IRS, however we ignore it in this example simply to isolate the yield differential aspect. In other words we leave out the discussion of credit quality differential between Ontario and the potential AA/A-rated counterparty risk. The yield advantage widened in 2008 and early 2009 due to a confluence of widening long provincial spreads and significant supply/demand imbalances in the IRS market.
- ³⁰ Beyond the yield differential, there may be additional factors influencing the decision to include any of these instruments, such as liquidity, diversification, credit risk, and counterparty risk.
- ³¹ Mark-to-market means the derivatives are valued at market (which, for the instruments discussed within this document is a daily process). If the value of the derivative security increases, then the plan investor will have a positive mark-to-market, meaning that the counterparty bank owes the plan the amount of the change in this value. In such a case, the counterparty may be required to post margin/collateral in order to provide the plan with some level of security on the m-t-m owing to them, should the counterparty become unable to meet this contractual payment (i.e. default). In the instance where the market movement is opposite to that just described, the plan would have a negative m-t-m and would thus owe the counterparty an amount of the decrease in market value of their derivative security. Here, the plan would be required to provide margin/collateral to the counterparty. Parameters around this collateral exchange process are pre-defined and governed by the contractual terms negotiated between the two counterparties. For investors in pooled fund trusts that employ such strategies, the trust itself is the counterparty facing the bank, rather than the plan.
- ³² We refer generically to the various Government of Canada bond futures as “CGBs”. Although the contracts that are currently available in the market (traded on the Montreal Exchange) include 2-year, 5-year, 10-year, and 30-year Government of Canada bond futures, for practical purposes trading remains limited primarily to the 10-year contract.
- ³³ We ignore margining requirements for sake of simplicity.
- ³⁴ For example, using 30-year contracts to extend duration might be challenging until liquidity picks up considerably. An alternative, which has its own pros and cons, is to leverage up the 10-year contract 3 times to achieve a crude duration equivalent to the 30-year contract.
- ³⁵ In this approach, the plan achieves the mortgage spread exposure and then manages term structure risk through the futures. Of course, liquidity constraints may mean that instead of extending the duration with 30-year contracts, we use a 30-year BDS or IRS. In this regard, we use the CGB market simply to offset the 5-year term structure exposure introduced by the 5-year mortgage.
- ³⁶ In the capital market environment of 2007-2009, the relevance of counterparty risk has been elevated. Since the clearing corporation provides less counterparty risk than the financial institutions that are counterparties to over-the-counter derivatives, some investors are contemplating a greater use of exchange-traded derivatives than in the past.
- ³⁷ Basis risk, simply defined here, is the potential difference between changes in direction, speed, and magnitude of foreign and Canadian interest rates. For example, if monetary and fiscal policies vary from country to country, this may result in differences in nominal and real rates may also differ, as may the shape of the yield curves and changes in the shapes of the yield curves.
- ³⁸ This is referred to as “positive carry” and the implication here is that there is a cushion for the plan in the amount of the yield differential. In other words, the plan is obtaining exposure to long-term interest rates in order to protect against the impact of adverse interest rate movements on the asset-liability match, and in return pays a premium. In the case of a positive carry, the plan effectively receives a rebate in order to put the protection in place. When short-term interest rates are higher than long-term interest rates (negatively sloped yield curve), a “negative carry” environment exists, resulting in the plan paying a premium to put the protection in place. We also note that it is important for the plan to consider the potential behaviour of this duration extension overlay in changing interest rate environments. For example, if long-term rates rise, and short-term rates rise to a greater degree, then the value of the assets would fall (because the market value of the long-term bond exposures fall with rising interest rates) and the financing costs would increase. Having said all of this, it is important to keep in mind the benefits of the duration extension strategy, which is that the liabilities will also be falling in value as a result of the rise in long-term interest rates, and the intended matching of asset and liability interest rate sensitivity will have been effective. To illustrate this point, assume interest rates are falling across the term-to-maturity spectrum. In this scenario, the plan’s short-term financing costs are falling, plus their asset values are rising as a result of the falling long-term rates and, more importantly, the increase in their asset values ought to keep pace with the resulting increase in liability values which are also caused by the fall in long-term interest rates.
- ³⁹ The International Swaps and Derivatives Association, Inc. (ISDA) is among the largest global financial trade associations. Its members include most of the world’s major institutions, government entities and businesses that deal in privately negotiated derivatives. Since its inception in 1985, ISDA has pioneered efforts to identify and reduce the sources of risk in derivatives and risk management. An ISDA Master Agreement is one such initiative. It is a template agreement that covers the standard administrative provisions (including payment netting, tax gross-up, tax representations, basic corporate representations, basic covenants, events of default and termination) but leaves details of the specific derivatives transactions to a customized schedule that forms part of the overall agreement between the relevant parties. The benefit of this approach is that it expedites the negotiation process between the counterparties: i.e., the investor may have a pre-established standing ISDA Master Agreement with a counterparty which paves the way for an instrument-specific schedule to be added to the agreement at any time. Each investor must negotiate their own ISDA agreements, but can look to their overlay manager to provide some assistance in structuring agreements on their behalf. Alternatively, pooled funds can relieve clients of the burden of ISDA negotiations, as this would all be taken care of by the pooled fund Trust.
- ⁴⁰ The role of equities has arguably changed slightly for the incremental 20% in long interest rate exposure achieved through the overlay. Simply put, this 20% portion of the equity allocation needs to (at least) match the financing rate embedded in the overlay structure, as opposed to (implicitly) beating the liability return.
- ⁴¹ We recognize that equities do not necessarily have a duration of 0-years, however we have made this assumption to simplify the illustration. While we would recommend that the investor assess the duration contribution of their equity allocation, we trust that assuming a zero duration here does not compromise the intent of the illustration.
- ⁴² The investor may, of course, sell the bond prior to maturity and replace it with another bond. At the time of sale, gains or losses are realized and the investor must ensure that the delay in time to purchase the new bond is minimal in order to ensure that appropriate market exposure is maintained.

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Publication date: January 31, 2014 IC1401086



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