STEP 1

Back TO Basics

An overview of fixed income products and new trends.

BY MARLENE K. PUFFER

Ask some Canadian plan sponsors about the value that bonds add to a pension portfolio and you might get the following response: "Bond managers don't add much value, so there's not much to be gained by paying attention to that part of our portfolio. Besides, I glaze over with all the technical detail of bonds. The fixed income allocation of my investment portfolio is there to hedge liabilities anyway, so we are better off focusing on alternative investments and equities to add value."

But this is wrong. It is true that many top-quartile domestic bond managers add only about 30 basis points (bps) over their benchmarks, leaving even less net of fees. However, they leave money on the table because they ignore opportunities to add value through more innovative fixed income strategies. Foreign pension plans have long recognized the value of accessing global bonds and credit strategies on a tactical basis, reaping alpha rewards well over 100 bps versus domestic benchmarks with a similar risk profile. Fees may be slightly higher for some of these strategies, but a net addition of 70 bps for a $500 million-dollar fixed income portfolio adds up to $3.5 million every year. This extra return potential is well worth the investment of some time and effort to learn more about the opportunities and understand the risks.

The fixed income world is indeed technical, and many sectors require specialized expertise to find profitable trading and investment opportunities and to skillfully monitor and manage risk. Plan sponsors have much to gain from becoming educated consumers of this sector and investigating new strategies to add value in this significant portion of their portfolio. To help them along the way, this section of the Fixed Income Primer will outline the latest trends and topics in domestic bonds and some of the more complex foreign fixed income securities.

KEY TERMS

Government of Canada Bonds – The government regularly issues money market, 2- 5- 10- and 30-year bonds in the public market through an auction process. Fiscal surpluses have eliminated the need for net new financing, but maintaining a liquid government market across the yield curve is important for financial market health and future market access. To support the size and liquidity of new benchmark issues, the government began buying back less liquid bonds by reverse auction. The Government of Canada is currently reviewing how they will issue bonds and continue to maintain a liquid bond and money market.

Federal Agency Bonds – In Canada, these are bonds issued by agencies and they are fully guaranteed by the Government of Canada. Examples are Canada Mortgage and Housing Corporation (CMHC), Farm Credit Corporation, and Export Development Corporation. Despite the full guarantee, these bonds have higher yields than Canadas, so the government is considering rolling these debt programs into general funding.

Canada Mortgage Bonds (CMB) are a new category of Federal Agency bonds and make up the bulk of this issuance. The CMB program began in 2001 and consists of five-year bonds issued by the Canada Mortgage Trust,

Marlene K. Puffer is managing director, Twist Financial Corp.

which holds residential mortgages issued by banks and other financial institutions as backing assets. These bonds are fully guaranteed by the Government of Canada and, from an investor perspective, are large semi-annual coupon bonds with no prepayment risk (that risk is retained by the originating banks). They yield about 13 bps higher than Government of Canada bonds for the same AAA credit quality and similar liquidity. This market has limited the issuance of other prepayable mortgage-backed securities in Canada. Overweighting these bonds is an easy, low-risk way to add value.

Provincial Bonds and Guarantees – The biggest provincial issuers are Ontario and Quebec, which make up nearly 70% of the provincial market, and are the only issuers with significant issuance of long-term bonds. There is some disagreement about how "quasi-provincial" issuers without guarantees, such as school boards, should be classified for Index purposes. Provincial spreads are tight and relatively stable, driven primarily by overall credit market fundamentals and liquidity, with minimal differentiation by province, particularly since political risk in Quebec has subsided. Active strategies within provincials have limited value added capacity.

Municipal Bonds – Municipal bonds (munis) are under 2% of the Index in Canada. Many municipalities now combine forces and issue debt through trusts for cheaper funding with greater liquidity. The B.C. municipal finance authority has a higher rating than the province, while others are guaranteed by their province to improve their ratings.

Many munis are issued as serial bonds, whereby a series of maturities, each with a small amount outstanding, are issued simultaneously. The small individual issue size limits liquidity and usually excludes these from bond indexes. Yield spreads on munis are correlated with provincial spreads, and opportunities for active strategies are limited.

Corporate Bonds – In Canada, corporate bonds have grown from about 10% of the market in 1990 to nearly 30% as government issuance has shrunk and investors have become more receptive to corporate credit to add yield to their portfolios. Diversification in this sector is still poor, with financials representing a full 48% of the market, made up of only a handful of bank and insurance issuers along with a few financing companies. The long end is also poorly diversified, dominated by a few major non-financial issuers such as Trans Canada Pipelines, GTAA, Bell, and Enbridge.

The BBB sector has expanded to 4% of the market (mainly under 10 years), but is still small in Canada.

FIXED INCOME FUNDAMENTALS AND STRATEGIES

Price/yield relationship
As yields, or interest rates, rise, the price of a bond falls. For a simple pure discount bond, this formula shows the relationship between price and yield.

$$\text{Price} = \frac{\textit{Face Value}}{(1 + \textit{yield})^T}$$

Yield curve
The relationship between Government of Canada bond yields and maturity. The yield curve is usually upward sloping, so rates are generally higher for longer maturity bonds. This makes the "carry trade" possible, where investors can borrow short-term and invest long-term and make a profit as long as rates don't rise too much.

In Canada the difference between 2-year and 30-year rates has averaged about 150 bps (or 1.5%) over the past 10 years. This is currently only a few bps, and so the curve is flat. An "inverted" yield curve means short rates are higher than long rates, which usually signals a recession and does not last very long.

Duration
Sensitivity (% change) of a bond's price to changes in yield. A bond with nine years to maturity has a duration of about 6.4 years (which is the Canadian Index duration). When rates rise by 1%, the bond's price will fall by 6%. Longer duration bonds outperform as rates fall. Duration can also be defined as a weighted average time until cash flows are received. Duration measures sensitivity to parallel yield curve movements.

Longer-term bonds have longer duration. For the same maturity, lower coupons mean longer duration. This is illustrated in Chart 1, on page 25. For strips, duration and term to maturity are the same. For callable bonds, "option-adjusted" duration is the relevant measure, which accounts for changes in the value of the option to call the bond when rates move in various ways.

Yield curve steepener/flattener
A steepener is a trade that pays off if the yield curve steepens. It can involve selling, or underweighting, long-term bonds and buying, or overweighting, short-term bonds. This trade is usually implemented duration neutral so that it pays off as long as the curve steepens, no matter what happens to the level of interest rates. A bullet usually has a steepening bias.

A flattener pays off if the yield curve flattens, i.e. if short rates rise relative to long rates, or if long yields fall more than short-term rates. Sell short bonds, buy long bonds to implement.

A barbell usually has a flattening bias, but can be a negative carry trade (one that gives up running yield) when the yield curve is very steep. If managers are wrong about the timing of a flatter curve, and have to wait too long, they can underperform even if their view is correct.

Bullet/barbell
A bulleted portfolio is overweight the belly (mid-term 5- to 10-year maturities) vs. the benchmark, and underweight the wings (short and long maturities). This portfolio generally outperforms if the curve steepens (short rates fall and long rates rise, or both rise but the short end goes up less etc.).

A barbelled portfolio is overweight the wings, and underweight the belly. This generally outperforms if the yield curve flattens, but depends on the specific holdings in the short end and the exact change in the curve shape.

Credit spread
The difference between the yield on a non-Government of Canada bond and a Government of Canada bond with similar term to maturity or duration. The decision to invest in provincials or corporates is driven by the view of whether spreads are expected to tighten or widen.

When credit spreads widen, corporate bond yields go up relative to Canadas, so corporates underperform government bonds. When credit spreads tighten, corporates outperform governments.

Sector allocation
The decision to over or underweight specific sectors (such as Provincials, Corporates) vs. the benchmark.

If managers believe corporate bonds will outperform, so corporate spreads will tighten, they will overweight corporate bonds vs. the benchmark, and/or select corporate bonds with longer duration (which will have greater sensitivity to spread movement) than the benchmark.

Canadian pension plans are increasingly allowing BBB-rated bonds since corporate credit analysis by money managers has improved. This trend has contributed to tight credit spreads in all global markets.

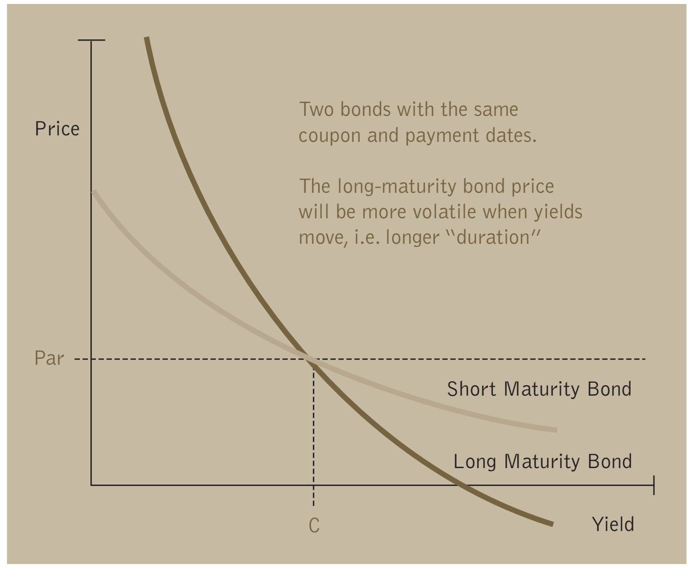
Many managers follow a simple strategy of overweighting short-term corporate securities since spread volatility in that sector is relatively limited and investment-grade default rates are very low. But this strategy can backfire in severe credit environments, as was the case in 2001.

Maple Bonds – Maples are foreign (corporate or sovereign) bonds issued in the Canadian market, in Canadian dollars. Approximately half of new corporate issuance in Canada in 2006 has been Maple bonds, a major trend since the removal of the Foreign Property Rule. These bonds eliminate foreign interest rate and currency risk and offer some credit diversification versus domestic issuers. So far, however, high-quality financial issuers dominate Maples. Manager understanding and monitoring of foreign credit risk are essential despite the fact that most of these issuers are highly rated. Secondary market liquidity can be a concern since only the lead dealer supports some deals, with little or no syndicate participation. Other concerns include extra custodial fees for bonds not settled by Canadian Depository Services (CDS), and legal structure since many deals are private placements and investors are subject to a foreign jurisdiction in the event of default.

Foreign Investment Grade Credit – Foreign currency and interest rate risk, but this sector offers much better diversification. Manager expertise in credit and derivatives markets is important, and some players can effectively translate their domestic experience into foreign markets. One surmountable barrier to managing currency and interest rate risk through asset swaps or other strategies, is that pension plans must implement a derivatives policy and International Swaps and Derivatives Association (ISDA) agreements.

High Yield – The junk bond market started in the 1980's and has evolved into a large, liquid marketplace with over 1600 issues and nearly $600 billion outstanding in the U.S. alone. That is about the same size as the entire Canadian bond market. Typical U.S. pension plan allocations remain modest, with hedge funds being the most active players. Some Canadian plans are strategically active in the speculative market. The best risk and reward tends to be in the BB-rated sector.

A Closer Look at Duration **CHART 1**



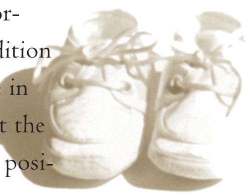
Mortgage-backed Securities (MBS) – These are pools of mortgages whose payments are securitized in a trust structure and passed through to bond investors. They usually have monthly coupons and most have prepayment risk. The AAA rating comes from guarantees by CMHC in Canada (i.e. the Federal Government) or Ginnie Mae or Fannie Mae in the U.S. (private agencies, not government-guaranteed). The U.S. MBS market is 20% of the global bond market and is bigger than U.S. Treasuries, so U.S. MBS are highly liquid. The behaviour of this market and hedging by major mortgage players is well recognized as a driver of bond market movements, but specialized expertise is required to successfully invest in MBS on a tactical basis. Prepayable MBS effectively allow managers to bet on interest rate volatility, which is the main driver of relative value in this market and is a diversifying exposure for Canadian bond portfolios. This market can be an excellent substitute for expensive Canadian corporate bonds, with comparable yields for higher-quality credit. However, it may not be attractive in some environments once currency hedging is taken into account.

Credit Default Swaps (CDS) – CDS are like an insurance policy where the buyer of default protection pays a premium, and receives a specified notional value in the event of default of the reference asset (usually corporate bonds or loans). Alan White's article on page 37 provides a detailed description. These liquid contracts isolate credit or spread risk, with no interest rate risk. Currency risk is minimal, or can be eliminated cheaply if CDS is denominated in Canadian dollars. In Canada, relatively few large Canadian names are actively traded, with the majority of trades being in global ones. The benefit of this sector for Canadian portfolios comes from the diversification, liquidity, and the pure credit play with limited currency exposure.

Structured Finance – This category includes asset-backed securities (ABS), commercial mortgage-backed securities (CMBS), and collateralized debt obligations (CDOs). Portfolios of fixed income assets, pooled in a trust structure, are tranched into pieces (senior, mezzanine, and equity which bears the first to default risk), with varying levels of protection from default of the underlying assets. Some structures have enhancements to improve credit ratings, such as overcollateralization. Each tranche is rated AAA and below. Underlying assets may include credit card or loan receivables (ABS), commercial mortgages (CMBS, where mortgages are not federally guaranteed), bonds (CBOs), loans (CLSs), and/or credit default swaps (synthetic CDOs), and other assets, ABS, and CDOs made of CDOs (CDO-squared). ABS are the simplest structures, but other structured finance investments require specific expertise, especially when investing in lower-rated tranches.

Structured finance markets are growing in Canada and globally. Investors must carefully assess the risk and diversification of underlying assets. Ratings depend on quantitative modelling and simplifying assumptions. The CDO market was tested in 2000 and 2001 with high yield bond defaults, and structures were strengthened, but model risk remains relatively untested.

Global Government Bonds and Related Derivatives – Duration and yield curve strategies can be expanded into global government markets by domestic or global managers. Limiting managers to a long-only approach restricts relative value strategies to those where the foreign market is expected to outperform Canada. Allowing short positions boosts potential returns without necessarily increasing risk. Derivatives such as futures and swaps can also be used to implement these strategies, freeing up cash for other value added strategies, such as enhanced money market (a relatively low-risk, yield-enhancing strategy investing in very short-term credit, or extending to six to 18 month maturities to take advantage of an upward-sloping yield curve).



Implementation of these strategies is straightforward and can be done well by small teams. In addition to evaluating a manager's expertise and experience in these markets, plan sponsors should inquire about the manager's tools for monitoring the risks of short positions or derivatives.

Emerging Markets – This sector includes most markets outside the G10 countries. The credit quality of many issuers has improved dramatically in the past few years as major issuers like Russia and Mexico and others are now investment grade. Contagion among markets has also decreased, which enhances diversification benefits. Corporate issuance is expanding rapidly as government supply dwindles. Most bonds are traded in U.S. dollars, but increasing issuance of local currency debt raises the spectre of managing the currency risk, which may be difficult in some markets. Spreads in emerging market debt have tightened in recent years along with all credit markets, but opportunities remain due to improving credit quality.

Strips – Bonds can be stripped into coupons and residuals (the par amount due at maturity). Each piece is then traded as a separate security. The strips can be reconstituted into bonds at any time. As long as a coupon has the same date (e.g. June 1st), it can be used to reconstitute any bond from the same issuer with that same coupon date. A strip has much more interest rate risk (longer duration) than a bond of similar maturity. Convexity risk, or sensitivity to the shape of the curve, differs from bonds. In Canada, only a handful (10 or so out of nearly 600 securities) of strips trade actively. The remaining ones tend to be purchased and held long-term to directly hedge liabilities.

Inflation-linked bonds – Linkers, or real return bonds, have a coupon and principal that increase with inflation and earn a real yield that protects purchasing power. Prices of inflation-linked bonds reflect investor opinions about the direction and magnitude of inflation, but in Canada's small, illiquid market, the relative value is also subject to severe market demand forces. The Canadian market is limited to only four Government of Canada issues, all in the long end, and a few provincials. That is small compared to the U.S. and the U.K., where these bonds are issued with a wide range of maturities and trade more actively. ∎