RBC Global Asset Management
PH&N Institutional

The case for Core Plus

Introduction

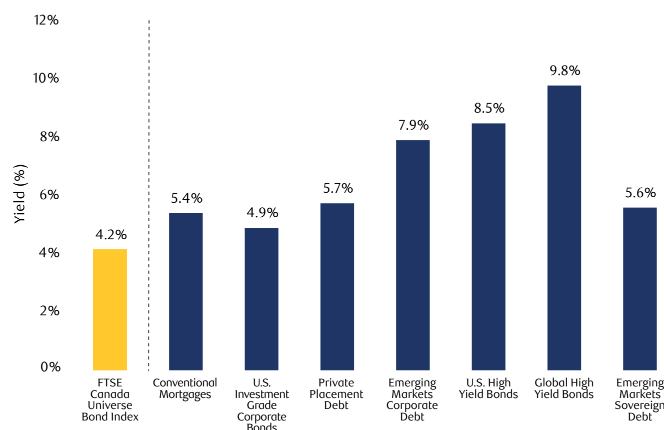
Following nearly 40 years of declining global bond yields that culminated in historically low levels, a sharp reversal beginning in early 2022 led to a period of significant negative fixed income portfolio returns. As accommodative monetary policy and low bond yields resulted in an environment that presented a significant challenge to fixed income investors seeking to earn meaningful income from their bond portfolios, many investors moved along the risk spectrum and away from "core" domestically focused fixed income portfolios. Many of the reasons for exploring strategies with greater return potential remain relevant today. The fixed income opportunity set is quite vast, and therefore combinations of asset classes within that opportunity set that would tilt a portfolio towards an investor's unique return and risk objectives are virtually unlimited.

In this paper we will explore how Core Plus bond strategies can increase the return of an investor's fixed income portfolio while offering the potential for an improved reward-for-risk trade-off relative to a core domestic bond portfolio. We will also illustrate the important role of active management and its potential to deliver additional return. Of course there is no free lunch, so we will also analyze some of the trade-offs of targeting higher returns and how they may impact the risk management properties that a core domestic bond portfolio typically provides.

Fixed income opportunity set

There is a vast range of potential investment opportunities available to meet a bond portfolio's unique return objective and risk tolerance. The FTSE Canada Universe Bond Index is comprised of a mix of core domestic federal, provincial, and investment grade corporate bonds. Broadening the scope of investment opportunities outside of core domestic fixed income – whether to less liquid segments of the market like private mortgages, or to sub-investment grade corporate bonds or foreign bonds – can deliver a significantly higher yield relative to the traditional domestic opportunity set, as can be seen in Figure 1. The overall expected return profile of a bond portfolio can be significantly higher when these additional strategies are employed.

Figure 1: Higher yields available outside of traditional core domestic bonds



As of September 30, 2022. Source: PH&N Institutional, Bloomberg, FTSE Global Debt Capital Markets Inc., ICE Data Services, JP Morgan. U.S. Investment Grade Corporate Bonds: ICE BofA U.S. Corporate Index, Conventional Mortgages: PH&N Conventional Mortgage Strategy, Emerging Markets Corporate Bonds: JP Morgan CEMBI Diversified Index, U.S. High Yield Bonds: ICE BofA High Yield Index, Global High Yield Bonds: ICE BofA Global High Yield Index, and Emerging Markets Sovereign Bonds: JPMorgan EMBI Global Diversified Index.

For investors seeking more yield, our view is that credit and liquidity risk premiums provided by non-government bonds should continue to deliver in the long run. However, passively holding corporate bonds may not be enough for many investors. Capitalizing on the risk premiums of credit and liquidity strategies is in many cases more important than ever in order to meet return objectives. Through active management, the amount of risk taken can be dynamically adjusted over a business cycle, enhancing the ability to generate alpha.

Of the trends we've seen over the past few years, the migration of client bond portfolios from core domestic to Core Plus has proven to be an incredibly persistent one. The premise of a Core Plus bond portfolio comes down to simply increasing the investment flexibility in a bond mandate in order to look beyond traditional core domestic strategies and access a broader range of investment opportunities in pursuit of higher returns, while also diversifying the sources of those returns.

Overview of "Plus" strategies

As stated above, the range of investment opportunities outside of core domestic fixed income is very broad, and as a result there is a myriad of "Plus" investments that can be used within a Core Plus bond strategy. The following segment summarizes the specialty asset classes that are typically included among "Plus" strategies; they consist predominantly of fixed income instruments ranging from less liquid segments of the market like private placement corporate debt and commercial mortgages, to sub-investment grade corporate bonds, and emerging market debt.

1. Private placement corporate debt

The investment grade private placement debt market includes Canadian corporate issuers, infrastructure, and project financing bonds. Issuers in the private debt market tend to offer strong credit protection, while allowing the smaller group of managers that invest in private placement debt to have greater influence over the structure and pricing of bonds than they would in the public debt market. The yield advantage from this asset class is enhanced by an "illiquidity premium" as many of these securities do not have an active secondary market.

2. Commercial mortgages

Similar to private placement corporate debt, a large part of the higher yield received for investing in commercial mortgages comes from an "illiquidity premium." Getting paid for this risk is one of the more attractive return/risk strategies available in the credit markets. Mortgages provide regular long-term, fixed income returns that (as is typically the case in Canada) cannot be called away or prepaid at the expense of the lender. Measures such as minimum loan-to-value and debt service coverage ratios are important to consider, and diversification by geography and property type can further mitigate overall risk. Importantly, in distressed situations, a mortgage has a direct claim to a specific underlying asset.

3. High yield bonds

There tends to be low correlation between high yield bonds and core domestic bonds such as government and investment grade corporate bonds, which implies that while adding high yield modestly increases the absolute volatility of a portfolio, the inclusion of these bonds presents a more favourable reward-for-risk profile when compared to investing in a traditional core domestic bond portfolio. Investors often compare the risk profile of high yield bonds to that of equities, but the absolute volatility associated with high yield bonds has traditionally been about half that of equities[1]. This is largely due to the fact that bonds rank higher in the capital structure of companies than equities, and consequently have more downside protection in an adverse environment.

4. Emerging market debt

Exposure to emerging market debt (EMD) enables a bond portfolio to participate in global economic growth. At over USD$25 trillion, the EMD market is more than ten times the size of the Canadian bond market as represented by the FTSE Canada Universe Bond Index[2]. The potential benefits of investing in this asset class include diversification across regions, credit quality, and sectors while generating higher absolute yields than are available within developed markets. Emerging markets comprise approximately 85% of the global population, and their economies represent over 40% of global GDP[3]. More than 50% of emerging market sovereign issuers are rated BBB or higher, up from only 3% in 1994, and emerging market corporate bonds have strong credit fundamentals compared to developed markets alternatives with, on average, lower leverage in every rating category[4]. EMD has historically been modestly more volatile than high yield bonds, but less correlated with other asset classes that are often present in a traditional core bond portfolio. This low correlation results in a diversification benefit that can improve the reward-for-risk profile at the overall portfolio level.

Why "Plus" strategies?

There are three key reasons an investor should consider "Plus" strategies within their bond portfolio:

1. The potential to earn higher returns.

"Plus" strategies such as those presented in this paper typically offer better yield opportunities than those strategies found in a traditional core domestic bond portfolio, thereby providing the potential to increase returns. However, these "Plus" strategies generally come with higher volatility. As such, a yield enhancing strategy should be considered if the expected additional reward matches or outweighs the expected increase in risk. This will be modelled in more detail in the following section of this paper.

2. Diversification in the sources of incremental returns.

"Plus" strategies can have low levels of correlation with domestic government bonds, which helps diversify the potential sources of value-added for a portfolio. In addition to these low levels of correlation, different specialty

[1] 10-year annualized volatility of S&P 500 Index vs. ICE BofA Global High Yield Index. Source: RBC GAM, S&P, ICE Data Services, as at September 30, 2022.
[2] Source: JP Morgan, FTSE Debt Capital Markets, as at September 30, 2022. FTSE Canada Universe Bond Index is CAD$1.8 trillion.
[3] IMF as of September 30, 2022.
[4] Source: JP Morgan.

asset classes, such as EMD or high yield bonds, provide opportunities for skilled managers to exploit inefficient markets and diverse credit cycles. As can be seen in Figure 2, with lower correlations at play, the inclusion of yield-enhancing strategies creates a more efficient structure on a reward-for-risk basis.

3. The potential to cushion the fixed income portfolio during periods of rising interest rates.

As yields declined to ultra-low levels over the past several years, many investors introduced additional strategies – and with them, additional complexity – into their overall asset mix in order to sustain total portfolio returns. This additional complexity has taken many forms including dedicated allocations to a number of public and private market fixed income asset classes, and as well the introduction of a number of alternative asset classes such as infrastructure and private equity. As a result, the governance burden on plan sponsors and trustees has increased significantly. These relatively newer strategies remain relevant and beneficial to investors; however, the return prospects from fixed income have increased fairly materially since the beginning of 2022.

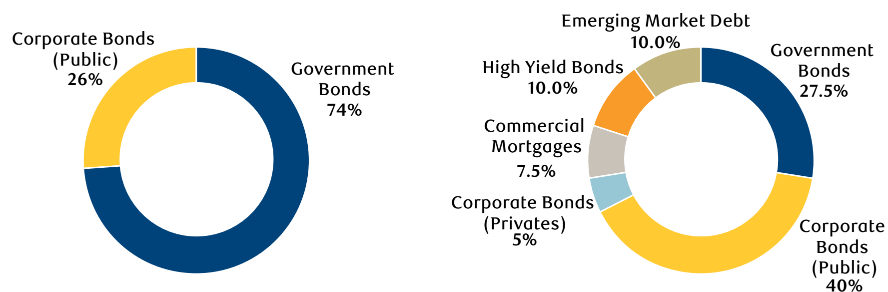
These improved fixed income return prospects, coupled with the value added opportunities available from Core Plus fixed income strategies, may provide investors with the opportunity to ease their governance burden by reversing some of the additional complexity that has been introduced in recent times, while sustaining return expectations at acceptable levels. An allocation to Core Plus fixed income can reduce or eliminate the need for fiduciaries to determine which fixed income asset classes are appropriate for their plan as well as allocation sizes, and then hire and monitor managers for each asset class. In this case, the fiduciary need not hire more than one manager, nor change their benchmark. Further, by providing a single manager with the flexibility to allocate between different fixed income asset classes based on the prevailing investing environment, the opportunities for higher returns through active management are increased. Indeed, investors have made policy allocations to many of the same fixed income asset classes that Core Plus accesses on a tactical basis in order to augment portfolio returns. Going forward, tactical allocations to these sectors when the opportunities are sufficiently attractive may be a more attractive option than structural allocations, once governance considerations are taken into account.

Figure 2: Correlation of core domestic bonds and "Plus" strategies

	Government Bonds	Investment Grade Corporate Bonds	Private Placement Corporate Bonds	Commercial Mortgages	High Yield Bonds	Emerging Market Debt
Government Bonds	**1**					
Investment Grade Corporate Bonds	0.8	**1**				
Private Placement Corporate Bonds	0.9	1.0	**1**			
Commercial Mortgages	0.8	0.8	0.9	**1**		
High Yield Bonds	0.2	0.5	0.4	0.1	**1**	
Emerging Market Debt	0.4	0.6	0.5	0.4	0.8	**1**

As of September 30, 2022. Source: Bloomberg, FTSE Russell, ICE Data Services, JP Morgan, PH&N Institutional. Government Bonds: FTSE Canada All Government Bond Index; Corporate Bonds: FTSE Canada All Corporate Bond Index; Private Placement Corporates: 93% FTSE Canada Mid Term Federal Bond Index and 7% FTSE Canada Long Term Federal Bond Index + 50% FTSE Canada Short Term Corporate Bond Index (spread return) and 50% FTSE Canada Mid Term Corporate Bond Index (spread return); Commercial Mortgages: PH&N Commercial Mortgage Strategy; High Yield Bonds: 50% ICE BofA U.S. High Yield Master II Index (CAD-Hedged) and 50% ICE BoA Global High Yield Index (CAD-Hedged); Emerging Market Debt: JP Morgan Emerging Market Bond Index (CAD-Hedged).

Figure 3: Return and risk comparison – Core Domestic vs. Core Plus bond portfolio



Return and Risk Statistics	Core Domestic Bond Portfolio	Core Plus Bond Portfolio
Long-term expected return	4.0%	5.5%
Annual volatility	4.4%	5.1%
Sharpe ratio	0.35	0.58
Duration	7.5 years	7.5 years

Refer to appendix for modelling assumptions and disclosures. Hypothetical performance analyses are for illustrative purposes only and there is no guarantee that hypothetical returns or projections will be realized. As of September 30, 2022. Source: PH&N Institutional.

Comparing a core domestic bond portfolio vs. a Core Plus bond portfolio

Above we compare two model bond portfolios. On the left hand side is a traditional core domestic bond portfolio comprised of domestic government and investment grade corporate bonds. On the right hand side is a Core Plus bond portfolio, which utilizes the same core strategies, but also employs “Plus” strategies comprised of private placement corporate bonds, commercial mortgages, high yield bonds, and emerging market debt.

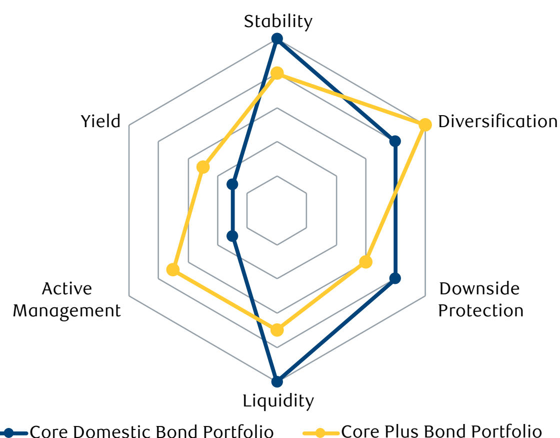
This chart demonstrates that enabling latitude in a Core Plus bond portfolio has the potential to deliver a significantly higher return. The Core Plus bond portfolio’s long-term expected return is meaningfully higher (5.5% vs. 4.0%), while its annual volatility is only modestly higher (5.1% vs 4.4%) because it benefits from having superior diversity. The higher expected return for a Core Plus bond portfolio is based on the higher potential returns derived from including the modelled allocations to Plus strategies. In addition, these returns have the potential to be even higher with the opportunity for value added from active management of individual sectors and securities. Furthermore, the sacrifice of the protective aspects of a bond portfolio are minimal as illustrated by the modest increase in volatility. This reward-for-risk trade-off ultimately translates to the more attractive level of risk-adjusted returns for the Core Plus bond portfolio, as measured by the Sharpe ratio (0.58 vs 0.35).

Potential trade-offs when accessing “Plus” strategies

In this section we will analyze some of the trade-offs of targeting higher returns, and how they may potentially impact the “insurance” component that a core domestic bond portfolio typically provides.

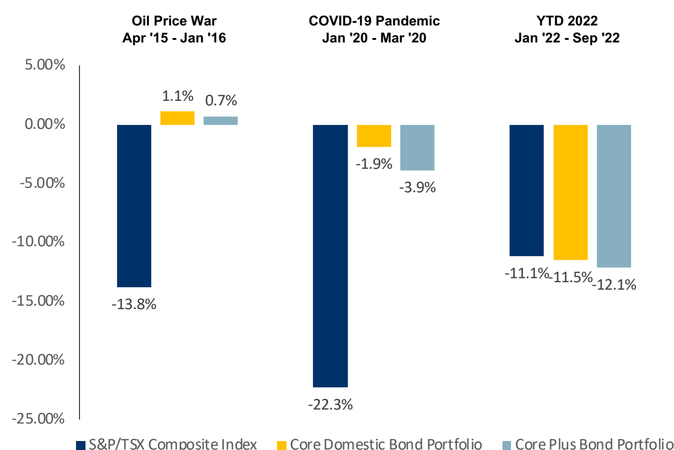
Figure 4 illustrates how the core domestic bond portfolio and the Core Plus bond portfolio emphasize six various return and insurance dimensions in a bond portfolio. The two dimensions on the left – yield and active management – represent the return features of the bond portfolio, while the remaining four dimensions – stability, diversification, downside protection, and liquidity – are insurance qualities. Those points that are further out on each dimensional axis represent the characteristics that are of greater emphasis to a portfolio, whereas a point closer to the center is of less significance to the portfolio. When comparing the two portfolio types, the migration to a Core Plus bond portfolio in pursuit of higher yield and a higher degree of active management would entail shifting the strategic footprint from predominantly insurance characteristics toward a more balanced footprint including more return features.

Figure 4: Trade-offs between return and insurance components



Source: RBC GAM. For illustrative purposes only.

Figure 5: Historical drawdowns



Source: PH&N Institutional, eVestment Allliance LLC, Bloomberg. Core Domestic Bond Portfolio represented by the eVestment Canadian Core Fixed Income (Median Manager), Core Plus Bond Portfolio represented by the eVestment Canadian Core Plus Fixed Income (Median Manager).

As can be seen above, a Core Plus bond strategy maintains many of the insurance characteristics of a core domestic bond portfolio. This is because the "core" of the Core Plus bond portfolio is very similar to a traditional core domestic bond portfolio, while the "Plus" entails moderate, dynamically managed allocations to sectors that can provide increased sources of return and diversification.

To illustrate the integrity of the insurance characteristics of a Core Plus bond portfolio relative to its core domestic bond portfolio counterpart, Figure 5 examines three recent periods of market distress. Over the past decade, we've experienced at least two major equity market drawdowns – the oil price war of 2015/2016 and the recent COVID-19 pandemic. During these two crisis periods, the Canadian equity market, represented by the S&P/TSX Composite Index, witnessed drawdowns of -13.8% and -22.3% respectively, as shown in Figure 6. During the same periods, the Core Plus bond portfolio provided meaningful downside protection and stability, broadly in line with that of the core domestic bond portfolio, reflecting the notion that the addition of "Plus" strategies to a core domestic bond portfolio does not meaningfully change its insurance characteristics. During the period of rapidly rising interest rates and risk-off sentiment during the first 9 months of 2022, the S&P/TSX Composite Index experienced a drawdown of -11.1%. Bond portfolios generally experienced meaningful drawdowns in this environment as well, however the Core Plus portfolio performed broadly in line with a core domestic bond portfolio. This further illustrates that a Core Plus portfolio does not necessarily underperform a core portfolio during a challenging environment for returns.

The importance of active management

Active management gives an investment manager the potential to add value above benchmark returns by adjusting both security selection and sector allocations based on the prevailing market environment and levels of risk premia. An important motivation for investors to consider Core Plus is the higher expected value-added return relative to a core bond portfolio.

However, as discussed earlier in this paper, the ability to earn incremental value added returns relies on accessing a number of higher yielding sectors of the global bond markets, which introduce additional credit and liquidity risk. So, an important question for investors to consider is whether they are simply accepting more risk in order to pursue these higher value-added return targets. We have already addressed the diversification benefits that Core Plus introduces relative to a core domestic bond portfolio and demonstrated that Core Plus portfolios offer the potential of reasonable downside protection in weak market environments. In other words, Core Plus portfolios seem to retain many of the "insurance" qualities of a core domestic bond portfolio. In this section we consider the efficiency of Core Plus vs. core bond portfolios by examining the reward for risk that these two classes of strategies have delivered historically.

Note that within a Core Plus bond portfolio, a sector within the "Plus" component may be added when the manager believes market conditions are favourable. In other words,

asset allocations within a Core Plus bond portfolio are dynamic – they are based on market conditions and are assessed based on the reward-for-risk profile of any strategy prior to implementation to ensure the compensation received for assuming any additional unit of risk is attractive. As such, there are points during market cycles when a Core Plus bond portfolio could theoretically have minimal to no investment in these higher yielding "Plus" strategies.

When looking at the ten-year performance of the median investment manager on eVestment, we can see that the Core Plus Fixed Income manager has been able to successfully outperform both the Core Fixed Income manager and the FTSE Canada Universe Bond Index over the period, by 0.19% and 0.57%, respectively. But as we have discussed throughout this paper, it is the risk-adjusted return that is most relevant to consider. The Sharpe ratio in Figure 6 illustrates that higher returns can be achieved in a Core Plus bond strategy, that are similar on a risk-adjusted basis to a core bond portfolio.

Figure 6: Ten-year performance of median managers

As at September 30, 2022	10-Year Return	10-Year Sharpe Ratio
Core Plus Fixed Income (Median Manager)[7]	2.22%	0.26
Core Fixed Income (Median Manager)[8]	2.03%	0.26
FTSE Canada Universe Bond Index	1.65%	0.17

[7]Core Plus Fixed Income (Median Manager) is represented by the eVestment Canadian Core Plus Fixed Income (Median Manager) - 23 strategies. Gross of fees returns.
[8]Core Fixed Income (Median Manager) is represented by the eVestment Canadian Core Fixed Income (Median Manager) - 58 strategies. Gross of fees returns.

Conclusion

Fixed income markets continue to offer diverse investment properties and return opportunities, and there exists a vast opportunity set of fixed income solutions that can be customized in order to meet an investor's unique return and risk objectives. A Core Plus bond portfolio is able to access much of this opportunity set to target enhanced returns and increased portfolio diversification – an increasingly important consideration in an environment of heightened interest rate volatility.

Appendix – Capital market assumptions

The RBC Global Asset Management Long-Term Expected Return (LTER) Committee is ultimately responsible for approving best estimate return assumptions. The LTER Committee is led by the Chief Investment Officer (CIO) and comprised of senior members of the CIO's office, as well as both fund managers and a representative from the Institutional Portfolio Solutions group. Volatilities and correlations are estimated from historical data and adjusted as required to reflect expected future conditions. The forward-looking annual volatility assumptions are calibrated using a dual-state regime switching lognormal model and downside risk estimates are adjusted for the influences of excess skewness and kurtosis, if applicable.

Capital market assumptions

The capital market assumptions and data sources used in the modelling analysis are presented below:

Asset classes	Representative data series	Expected long term return	Expected annual volatility	Expected annual downside risk
Government Bonds	FTSE Canada All Government Bond Index	3.7%	4.7%	-6.2%
Corporate Bonds (Public)	FTSE Canada All Corporate Bond Index	5.0%	4.2%	-5.9%
Corporate Bonds (Private)	Custom Index[1]	5.8%	4.7%	-6.7%
Commercial Mortgages	PH&N Mortgage Pension Trust	4.9%	3.1%	-1.4%
High Yield Bonds	Custom Index[2]	6.8%	9.3%	-15.4%
Emerging Market Debt	J.P. Morgan Emerging Market Bond Index (CAD-Hedged)	8.7%	9.7%	-13.5%

As of September 30, 2022.
[1] 98% FTSE Canada Mid Term Federal Bond Index and 2% FTSE Canada Long Term Federal Bond Index + 50% FTSE Canada Short Term Corporate Bond Index (spread) and 50% FTSE Canada Mid Term Corporate Bond Index (spread).
[2] 50% ICE BofA BB US High Yield Index (CAD-H) and 50% ICE BofA Single-B US High Yield Index (CAD-H).

Correlations

	Government Bonds	Investment Grade Corporate Bonds	Private Placement Corporate Bonds	Commercial Mortgages	High Yield Bonds	Emerging Market Debt
Government Bonds	1					
Investment Grade Corporate Bonds	0.8	1				
Private Placement Corporate Bonds	0.9	1.0	1			
Commercial Mortgages	0.8	0.8	0.9	1		
High Yield Bonds	0.2	0.5	0.4	0.1	1	
Emerging Market Debt	0.4	0.6	0.5	0.4	0.8	1

Capital market assumptions represent the views of PH&N Institutional for the purposes of illustrating and understanding the potential risk-reward trade-off of different portfolio decisions and are established by considering a variety of qualitative and quantitative sources of information including: different forecasting models; internal and external research; existing and implied future conditions as priced by capital markets; and internal views of our fund managers. Expected long-term annualized returns are for a 10-year forecast time horizon. Volatilities, downside risk and correlations are estimated from historical data and adjusted as required to reflect future market conditions. Investors should be aware of the limitations using forward-looking assumptions in that there is absolutely no guarantee that future performance will occur according to any ex-ante expectation.

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