

Investing in global bonds part III:

Global credit

In Parts I and II of our *Investing in Global Bonds* series, we showed how a global perspective presents investors with a richer opportunity set and diversification advantages, as well as how this has historically translated into a superior risk-adjusted return profile within the sovereign bond space. In Part III of our series, we examine the historical risk and return characteristics of the remaining component of the global fixed income landscape: global credit. Our first objective is to examine the investment grade corporate bond segment on a standalone basis, and in contrast to domestic markets. Our second objective is to analyze all components of the credit landscape (including emerging market and high yield debt) in relation to one another and in relation to global sovereign bonds. In forthcoming papers, we will address the role of global bonds in an objective-oriented investor's portfolio, as well as active management and implementation considerations.

INVESTING IN GLOBAL BONDS PART II: KEY TAKEAWAYS

Our second paper in this series, *Developed Market Sovereign Bonds*, examined the risk and return profile of developed market sovereign bonds, the largest subset of the global fixed income landscape. Key takeaways from that paper include:

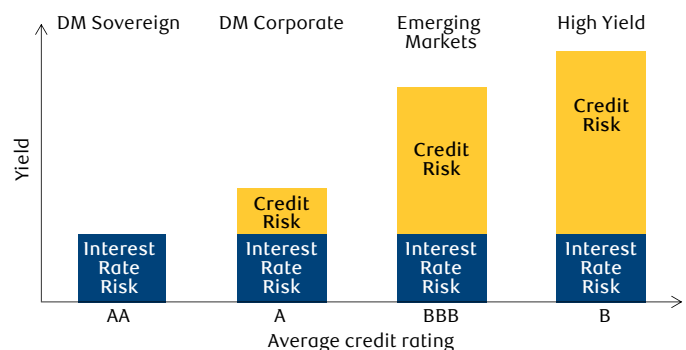
- A portfolio of global sovereign bonds has the ability to lower volatility and provide better capital protection during downside events than an individual allocation to any major domestic government bond market.
- Diversification and risk reduction benefits are only observable when the underlying foreign currency exposures are hedged.
- The long-term return of a global government bond exposure tends to be very similar to that of the domestic home base.

For more information, read *Investing in Global Bonds: Developed Market Sovereign Bonds*.

Background¹

In our last paper, we saw that the diversification inherent in a portfolio of global sovereign bonds can considerably reduce return volatility relative to a portfolio restricted to domestic government bonds; however, return enhancement is not a feature of this more diversified portfolio. Bonds with credit risk, on the other hand, will tend to offer varying spreads over government yields, as illustrated in Figure 1.

Figure 1: Credit risk premium by market segment



Source: PH&N Institutional, ICE Data Indices, LLC and JP Morgan. Average yield from December 31, 1997 to December 31, 2019. Average credit rating as at December 31, 2019. For illustrative purposes only.

¹Throughout this paper, securitized securities are included in the global investment grade corporate bond segment (DM Corporate), which is represented by the ICE BofA Global Corporate Index and ICE BofA Global Collateralized Index, weighted by their monthly historical market capitalization (58% and 42% respectively as at December 31, 2019). Individual countries are represented by regional subsets of this blended index. Developed market sovereign bonds (DM sovereign) are represented by the ICE BofA Government Bond Index. High yield bonds are represented by the ICE BofA Global High Yield Bond Index. Emerging market debt is represented by the J.P. Morgan EMBI Global Diversified Index, J.P. Morgan GBI-EM Global Diversified Index and J.P. Morgan CEMBI Broad Diversified Index weighted by the historical monthly market capitalization of each individual index (31%, 47% and 23% respectively as at December 31, 2019).

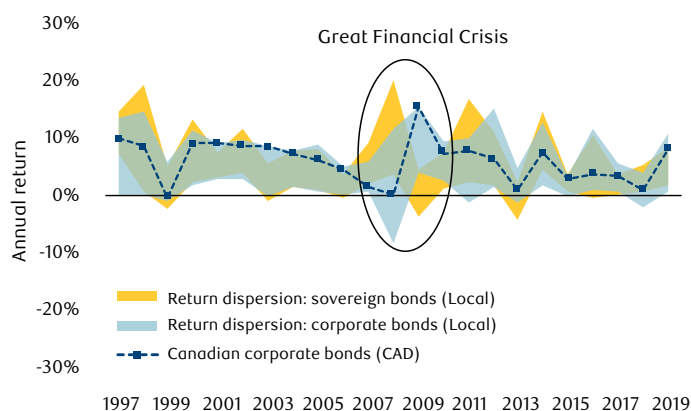
This characteristic of credit is related to an increased risk of issuers defaulting on their debt due to greater constraints on their ability to service the issued obligations. The three categories of credit we will examine in this paper are described below:

- **Investment Grade (IG):** Bonds issued by corporate entities considered to be stable, in good financial standing, with a healthy business and therefore at low risk of not being able to repay their obligations (“high quality”).
- **High Yield (HY):** Bonds issued by corporate entities considered to be less stable, potentially due to company immaturity, high levels of existing operating leverage, and other financial difficulties, thereby posing a greater chance of defaulting on their debt (“low quality”).
- **Emerging Markets (EM):** Bonds issued by governments or corporate entities from emerging market countries, usually with less developed economies prone to greater volatility, greater potential for political instability, and other socio-economic and political risks not typically associated with developed market countries. (We note that the spread component of local currency government issues is more driven by inflation/currency devaluation risk than explicit default risk).

Potential benefits of global investment grade corporate bonds

Each of the sovereign markets analyzed in our previous paper has a corresponding investment grade corporate bond market². Figure 2 illustrates the range of domestic returns achieved by investors for both sovereign and corporate bonds issued in their home countries. With the focus on the corporate bonds, we observe that much like sovereign bonds, there is significant dispersion in annual returns across countries. This is not an unexpected observation given that during normal market conditions, an important driver of corporate bond returns is the underlying interest rate exposure of the market in question. Of course, during stressed market conditions, the spread exposure takes on more significance, as illustrated in the chart during the Great Financial Crisis. Together, this suggests that there may also be benefits to adopting a global perspective in the corporate bond segment of a fixed income portfolio. However, as discussed in Part II, these return streams cannot be directly achieved by a non-domestic investor; thus, the impact of currency exposure/hedging needs to be assessed.

Figure 2: Dispersion of returns across corporate bond markets*



Source: PH&N Institutional, ICE Data Indices, LLC.

*Sovereign bonds are represented by the ICE BofA Global Government Bond Index, corporate bonds are represented by the ICE BofA Global Corporate Index and ICE BofA Global Collateralized Index, and Canada corporate bonds are represented by the ICE BofA Canadian Corporate Index which includes securitized issues.

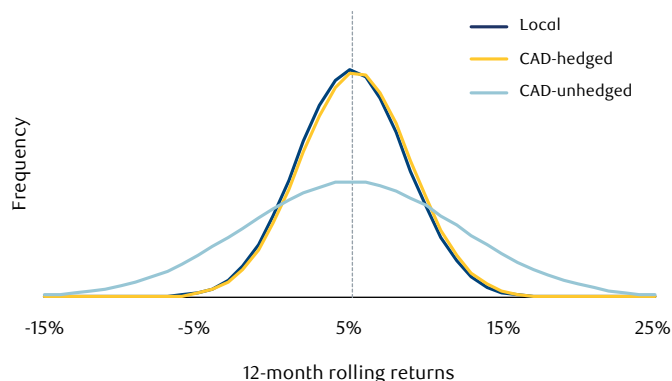
Currency hedging considerations for global investment grade corporate bonds

An investor in global markets always has the additional consideration of whether or not to hedge foreign currency exposure. In the case of sovereign bonds, the volatility of exchange rates is considerably greater than the volatility of the interest rate exposure. Consequently, in order to achieve the characteristics of the local return distribution and the associated benefits, hedging currency volatility when investing in global sovereign bonds is essential. When it comes to corporate bonds, credit spread volatility introduces an additional risk factor that interacts with rates and currency, potentially leading to a different conclusion with respect to currency hedging.

Figure 3 illustrates the three different distributions of 12-month rolling returns for global corporate bonds: the uninvestible local return stream, the currency exposed return stream, and the currency hedged return stream (for a Canadian investor). The results demonstrate that hedging the currency exposure produces a return distribution that is very similar to the local returns being sought, while currency exposure adds volatility and risk. Therefore, similarly to sovereign bonds, in the absence of any specific views on currency movements, global investment grade corporate bonds should also be currency hedged.

²For more details, refer to Investing in Global Bonds Part I: The Global Fixed Income Landscape [here](#).

Figure 3: Distribution of 12-month rolling global corporate bond returns

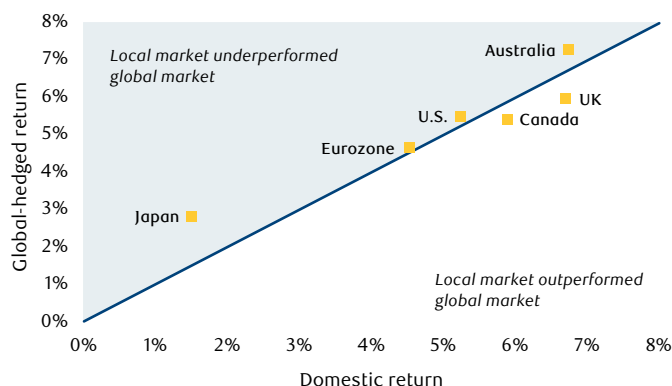


Source: PH&N Institutional, ICE Data Indices, LLC. Fitted normal distribution of the 12-month rolling return over the period from January 31, 1997 to December 31, 2019.

Risk/return profile of global investment grade corporate bonds

To determine whether there are benefits to moving from a domestic corporate bond portfolio to a global one, we consider in Figures 4 and 5 the respective return and volatility profiles of a currency-hedged global portfolio versus the major domestic corporate bond markets.

Figure 4: Return comparison: Domestic vs. global corporate bonds

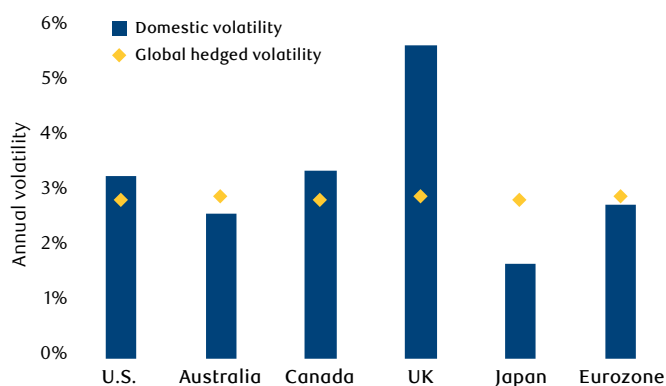


Source: PH&N Institutional, ICE Data Indices, LLC. Over the period from January 31, 1997 to December 31, 2019.

The results are variable both in terms of long-term returns and volatility – in some cases the domestic corporate bond portfolio realized higher returns than its global currency hedged counterpart, in other cases slightly lower. Likewise, the domestic portfolios experienced less volatility in some cases and more volatility in others. This observation is in contrast to what was observed in the sovereign bond space: extremely similar long-term returns but always with less volatility than any individual region, regardless of differing duration. While sovereign bond returns are almost entirely driven by interest rate risk, corporate bond markets can exhibit more heterogeneity through the varying nature of investment grade credit spreads, specifically:

1. **Credit Rating:** The amount of incremental yield attributed to the credit spread typically varies more significantly based on a bond's rating; a lower rating will often result in investors requiring a higher yield for bearing the additional credit risk and associated price volatility.
2. **Sector:** Certain sectors are more impacted by fluctuations in the global economy and therefore can exhibit greater price volatility (both helping and hurting returns depending on the point in the business cycle), regardless of underlying rating.
3. **Issuer:** Different issuers in the same sector with the same rating can face idiosyncratic risk, potentially affecting one region's risk/return but not another's.

Figure 5: Volatility comparison: Domestic vs. global corporate bonds

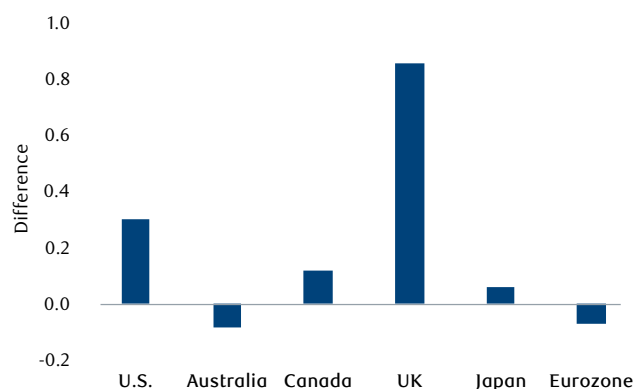


Source: PH&N Institutional, ICE Data Indices, LLC. Over the period from January 31, 1997 to December 31, 2019.

The impact of these different factors can explain in part why different regions have produced different historical return and volatility profiles. For example, the UK corporate bond market has the highest duration and lowest average quality by rating when compared to the other markets, potentially explaining why this market has realized a higher return with considerably more volatility. On the other hand, the Japanese corporate bond market is tilted towards higher-quality issues with no BBB exposure, likely explaining why this market has underperformed the global market while exhibiting less volatility. However, since absolute return and risk measures can vary, a more meaningful comparison can be achieved by looking at return-to-volatility ratios, as illustrated in Figure 6. This chart demonstrates that in fact, region by region, the differences between a domestic and global currency-hedged corporate bond portfolio are generally negligible (with the exception of the UK), suggesting that the realized risk-adjusted return profile of a passive long-term global corporate bond portfolio would not diverge meaningfully from a domestic one.

Figure 6: Return-to-volatility ratios

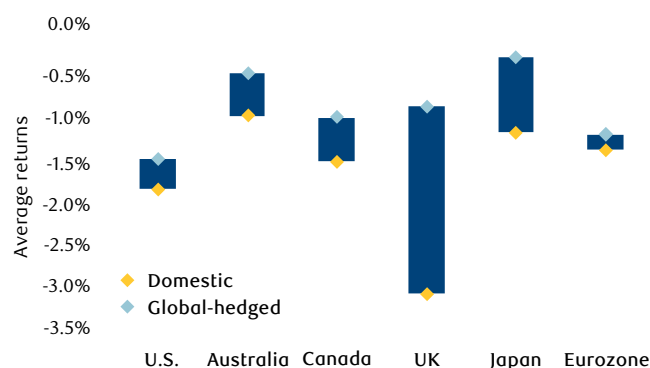
	U.S.	Australia	Canada	UK	Japan	Eurozone
Domestic	1.6	2.6	1.8	1.2	0.9	1.7
Global-hedged	1.9	2.5	1.9	2.0	1.0	1.6



Source: PH&N Institutional, ICE Data Indices, LLC. Over the period from January 31, 1997 to December 31, 2019.

Since different qualities, sectors, and issuers may end up performing better or worse across a long-term credit cycle due to the prevailing economic backdrop, being confined to a local market that exhibits certain biases with respect to these factors presents two potential disadvantages. Firstly, long-term local market performance may end up being inferior to that of the global market, an outcome that cannot be known before the fact, and one that can be especially disadvantageous for non-U.S. investors since the U.S. market represents an overwhelming proportion of the global opportunity set. Secondly, evolving economic conditions can generate significant short-term opportunities across markets that cannot be exploited when limited to a local market. Therefore, the advantage of a global perspective is diversification of opportunities, especially from an active management standpoint (a topic that will be discussed in detail in a forthcoming issue). This idea is perhaps best illustrated in Figures 7 and 8, where we look at the behaviour of the various markets during downside scenarios.

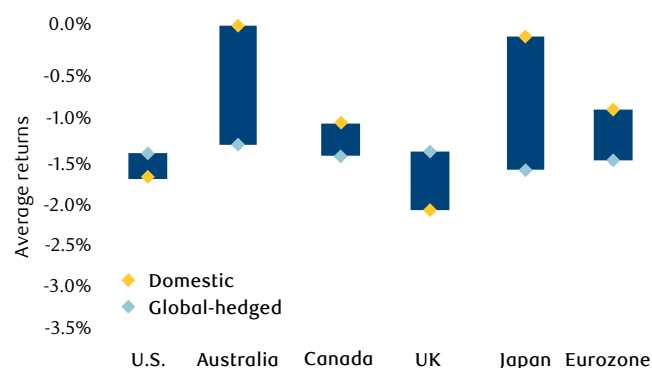
Figure 7: Global corporate bond performance during domestic down markets



Source: PH&N Institutional, ICE Data Indices, LLC. Worst 5% of observed monthly returns over the period from January 31, 1997 to December 31, 2019.

Figure 7 compares the performance of hedged global corporate bonds against domestic corporate bonds during extreme domestic downside events. We can observe that when each domestic market experienced its most negative monthly returns, a currency-hedged global exposure outperformed on average, **supporting the diversification benefits of a global exposure.**

Figure 8: Domestic corporate bond performance during global down markets



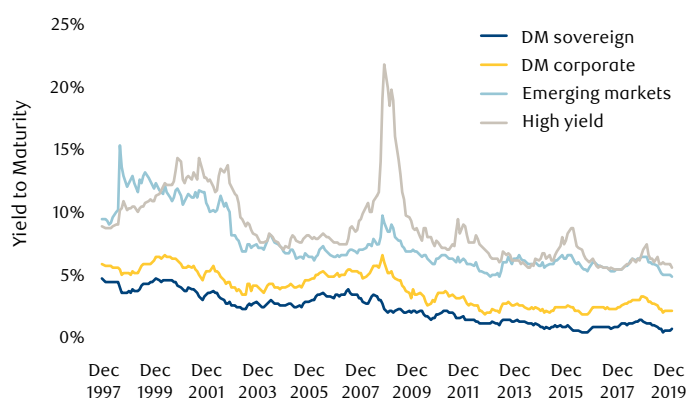
Source: PH&N Institutional, ICE Data Indices, LLC. Worst 5% of observed monthly returns over the period from January 31, 1997 to December 31, 2019.

Figure 8 compares the performance of domestic corporate bonds against hedged global corporate bonds during extreme global downside events. We can observe that when each currency-hedged version of the global market experienced its most negative monthly returns, some domestic markets outperformed while others underperformed, suggesting that the **ability to actively move across markets can be beneficial.**

Completing the global landscape with emerging market and high yield debt

So far in our series, we have examined the differences between global and regional exposures to both sovereign and investment grade corporate bonds for developed markets. In both of these cases, we have identified the main advantage of adopting a global fixed income perspective to be increased diversification that can benefit risk-adjusted returns. The remaining two components of the global fixed income landscape are emerging market and high yield bonds. Our objective here is to highlight the risk and return considerations that will be most relevant to investors when they think about broad portfolio construction, rather than to delve deeply into the details or nuances. For example, while USD-denominated emerging market debt will tend to exhibit different return dynamics than local currency issues, for our purposes, we consider the aggregate representation of the emerging market subcomponent.

Figure 9: Historical yield to maturity of the global bond constituents



Source: PH&N Institutional, ICE Data Indices, LLC and JP Morgan.

Figure 9 illustrates the historical yield profile of the four components comprising our global opportunity set, with the following observations:

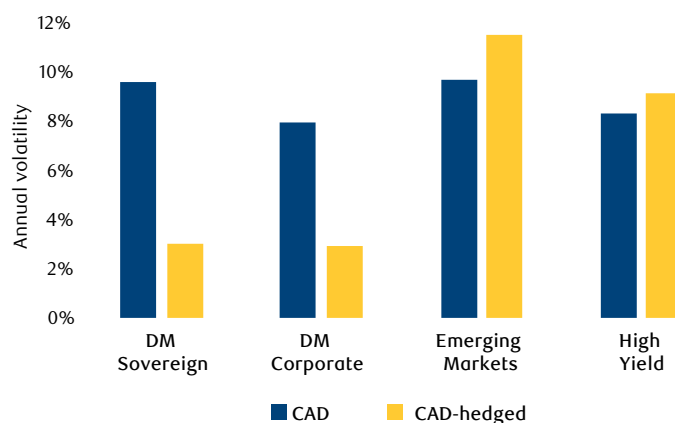
1. Emerging market and high yield debt have historically offered **significantly higher yields**.
2. There has been a **downtrend in yields** that is particularly pronounced in the developed market sovereign and investment grade corporate bond markets.

3. The yield profile of emerging market and high yield debt exhibits **significantly higher volatility**.
4. Yield movements in emerging and high yield markets can be **very different** from those in the developed sovereign and investment grade corporate bond markets, which tend to follow each other quite closely.

Taken collectively, these observations suggest a potentially different risk/return profile for emerging market and high yield debt, as well as implications on diversification and currency hedging.

As previously demonstrated, it is reasonable for an investor to expect no reward for passively bearing currency risk over a very long horizon, and that hedging currency is necessary to achieve the desired volatility profile of global sovereign and investment grade corporate bonds. When it comes to emerging market and high yield debt, however, the benefits of hedging currency are less obvious. In these cases, currency volatility will end up representing a smaller proportion of total volatility. Thus, depending on an investor's domestic currency and its correlation with the inherently higher credit risk in emerging market and high yield debt, the impact of hedging can have different effects. For example, consider Figure 10, which shows that the volatility for a CAD-hedged investor in emerging market or high yield debt is in fact slightly higher.³

Figure 10: Comparing unhedged and hedged volatilities



Source: PH&N Institutional, ICE Data Indices, LLC and JP Morgan. Over the period from January 31, 1998 to December 31, 2019.

³Note on hedging emerging market debt: We do not consider the impact of passively hedging the local EM currency exposure. While this is possible, the cost of hedging is not only higher from a transactional standpoint, but the hedger must pay the interest rate differential which will tend to be significant given the substantially higher yields. Consequently, a full passive hedge of the local currency risk would remove the majority of the yield benefits being sought through an exposure to emerging market debt.

In this case, the credit risk is negatively correlated with the CAD/USD exchange rate (since USD is considered a safe-haven currency that tends to appreciate during periods of risk aversion). The result is therefore that the unhedged currency exposure improves volatility slightly from a diversification standpoint for the Canada-based investor. Of course, depending on an investor's domestic currency and its correlation with credit risk, the reverse could also occur. Furthermore, the applicability of hedging may be different when it comes time to implement, especially with active management (a topic that will be addressed in a later article).

the global fixed income opportunity set. While developed market investment grade corporate bonds have produced the best risk-adjusted returns, both high yield and emerging market debt have delivered superior absolute returns, albeit with more risk on a standalone basis. That said, the realized long-term return premium may not be as substantial as one might have expected given the spread profile of these markets. This is attributable to the different duration characteristics of the various segments, which are important drivers of the realized returns. For example, sovereign bonds have a modified duration of 8.4 years versus high yield bonds at 4.2 years.⁴ Thus, even though high yield has exhibited substantial spreads, the higher sensitivity of sovereign bonds to interest rate movements has been a tailwind to the performance of that market segment during the secular decline in interest rates. If the opposite trend were to occur, then the return premium of lower duration credit would likely be significantly larger.

The interest rate exposure underlying investment grade corporate bonds will typically be a material driver of total return (despite the presence of a credit spread), explaining why we observe a high correlation with sovereign bonds (0.75). However, it is the spread exposure underlying emerging market and high yield debt that is the main driver of their total returns, and this factor tends to be negatively correlated with interest rate risk. For example: during turbulent market periods, investors tend to move assets into investments perceived as being safe – e.g., developed market government bonds – and away from higher risk exposures. Conversely, during normal conditions, riskier instruments tend to be favoured over lower-yielding safe-haven assets. Consequently, as credit spread exposure increases along the spectrum, the correlation decreases. This implies that while those strategies exhibit greater standalone risk, there is a diversification effect that occurs when they are combined with lower-risk strategies such as investment grade corporate and especially sovereign bonds from developed market countries. Each component of the global fixed income landscape, even those with significantly higher risk profiles, therefore has the potential to work together and contribute differently to a fixed income portfolio, whether through risk reduction, return enhancement, and/or diversification.

Figure 11: Historical risk, return and correlations of the global bond constituents

	Return	Volatility	Return to volatility	Downside risk	Correlations			
					DM Sovereign	DM Corporate	Emerging Markets	High Yield
DM Sovereign (CAD-H)	5.0%	3.0%	1.7	-0.7%	1			
DM Corporate (CAD-H)	5.3%	2.9%	1.8	-1.2%	0.75	1		
Emerging Markets (CAD)	7.4%	9.5%	0.8	-4.2%	0.25	0.33	1	
High Yield (CAD)	6.2%	8.2%	0.8	-10.8%	0.01	0.25	0.51	1

Source: PH&N Institutional, ICE Data Indices, LLC and JP Morgan. Over the period from December 31, 1998 to December 31, 2019.

⁴ As at December 31, 2019. Source: ICE Data Indices, LLC.

Conclusion

When we consider the implications of adopting a global perspective on a credit component comprised of developed market investment grade corporate bonds, emerging market and high yield debt, we observe the following:

- The long-term risk/return profile of a long-term strategic exposure to *hedged global corporate bonds* may not end up being materially different than that of a domestic market.
- The heterogeneous nature of *investment grade credit spread* implies that a global exposure likely presents an opportunity for investors from an active management standpoint that would not otherwise be accessible when confined to their domestic market.
- Higher yielding instruments such as *emerging market debt and high yield bonds* can enhance long-term returns while introducing greater diversification with interest rate risk.

With respect to currency, while developed market investment grade corporate bonds (similarly to sovereign bonds) benefit meaningfully from currency hedging, the benefits of hedging higher volatility fixed income such as emerging market and high yield debt are less obvious. The impact of hedging will ultimately depend on how the investor's domestic currency interacts with the higher volatility spread component inherent to these asset classes, in addition to other implementation considerations.

Based on our analysis of the historical risk/return profile of the global fixed income landscape, we believe there is strong evidence to suggest that adopting a truly global perspective is the optimal approach when it comes to building a fixed income portfolio. In the next installment of our ***Investing in Global Bonds*** series, we will move into a forward-looking framework and evaluate whether these observations hold at a total portfolio level, and in the context of different institutional investor objectives.

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