

Expanding Horizons: The Case for Global Bonds in Liability-Driven Investing

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In brief

- Improved defined benefit (DB) funded status and lower liability durations provide an opportunity for sponsors to reduce derivative exposure and cover a higher portion of liabilities with physical bonds.
- Global investment-grade bonds can potentially complement traditional liability-driven investment (LDI) strategies, bringing the potential for attractive risk-adjusted returns while still maintaining critical liability-hedging characteristics.

The traditional approach to LDI

Over the past decade, LDI strategies have been widely adopted, with 77% of DB sponsors employing some form of them within their investment policy statement.¹ They have demonstrated their effectiveness over the years, with glide path strategies reducing risk as funded status improves and carefully constructed fixed income portfolios moving in line with plan liabilities as interest rates rise and fall.

Traditional LDI approaches use a combination of Treasuries and US investment-grade credit to create portfolios with duration and credit profiles comparable to the plan's liability. In many cases, derivatives are employed to extend duration beyond what is attainable with physical bonds and to fill gaps in the duration profile that cannot be covered easily with physical bonds.

DB plans have seen a marked change in their fortunes since the end of 2021 as rising rates have reduced DB plan liabilities, improving funded status, and many plans are now at or above 100% funded status after more than a decade of funded status hovering in the 80% to 90% range.² As DB plans mature and participant populations age, liability duration naturally decreases. Higher rates have also reduced durations on typical plan liabilities from where they stood at the end of 2021 by two to three years.³ Better funded status and lower liability duration profiles can potentially allow for more liability to be covered with physical bonds, which can potentially enable sponsors to reduce derivative exposure and associated liquidity and counterparty risks while also lessening the governance oversight that comes with derivatives.

While the first stop on the route to higher allocations of physical bonds is US Treasuries and US investment grade credit, we believe other asset classes, such as global investment-grade bonds, could also play an important role in LDI strategies.

Overview of the global bond market

A thorough understanding of the global bond market is an important first step in assessing the viability of this asset class. Exhibit 1 compares key attributes of the global bond universe with US and non-US investment-grade bonds.

Exhibit 1: Comparison of the global and US investment-grade bond universes

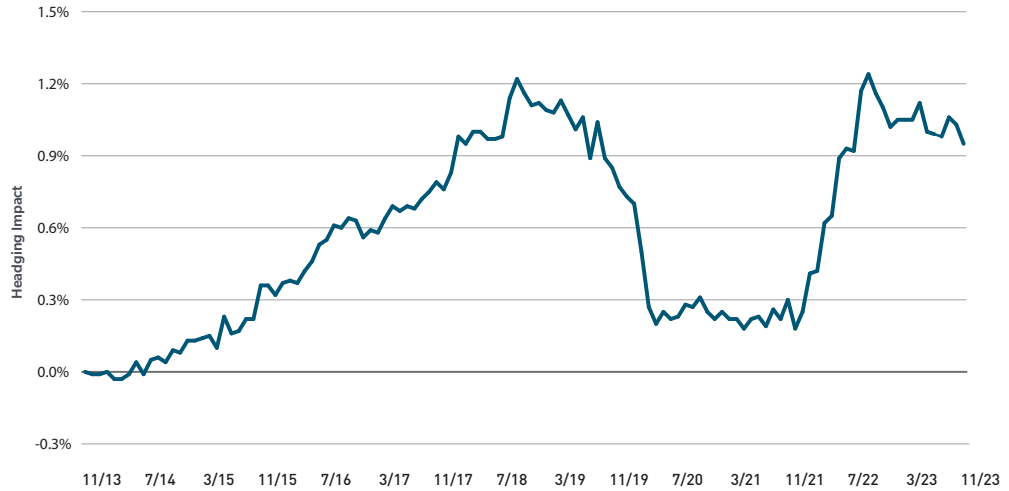
| | Global IG Bonds | US IG Bonds | Non-US IG Bonds |
|-----------------------------|-----------------|-------------|-----------------|
| Market Capitalization | \$61.9T | \$25.6T | \$34.8T |
| No. of securities | 29,613 | 13,380 | 12,987 |
| Yield to Worst | 3.93% | 5.05% | 2.97% |
| Duration | 6.6 years | 6.2 years | 7.1 years |
| Currency of Issuance | | | |
| USD | 45% | 100% | N/A |
| Euro | 22% | N/A | 40% |
| Yen | 11% | N/A | 19% |
| Sterling | 4% | N/A | 7% |
| Other | 18% | N/A | 34% |
| Quality Breakdown | | | |
| Aaa | 12% | 4% | 18% |
| Aa | 42% | 72% | 22% |
| A | 32% | 12% | 47% |
| Baa | 14% | 13% | 14% |
| Sector Breakdown | | | |
| Treasury | 53% | 41% | 65% |
| Gov't Related | 15% | 5% | 21% |
| Corporate | 18% | 25% | 11% |
| Securitized | 14% | 29% | 4% |

Source: Bloomberg as of 30 November 2023. Global Bonds are represented by the Bloomberg Global Aggregate Index, US Bonds are represented by the Bloomberg US Aggregate Index and non-US Bonds are represented by the Bloomberg Aggregate ex US Index.

Non-US-dollar-denominated bonds represent over half of the Bloomberg Global Aggregate Index, with over \$34 trillion of bonds issued in euros, yen and other currencies, providing a broader opportunity set for investors to consider. Non-US bonds are more evenly spread across quality sectors, with a higher percentage of A-rated securities, and also have a higher proportion of government and government-related issues as compared to US bonds.

With non-USD-based investments, investors must consider currency risk. A US DB typically hedges non-USD exposure so assets and liabilities are denominated in the same currency. In the current market environment, hedging non-USD exposure can benefit US investors, as there is a negative cost to hedging many foreign currencies, including the euro and the yen. While the impact of hedging on yields varies over time, we estimate that hedging currency exposure in a broad global bond portfolio would increase the effective yield by roughly 100 basis points, as shown in Exhibit 2.

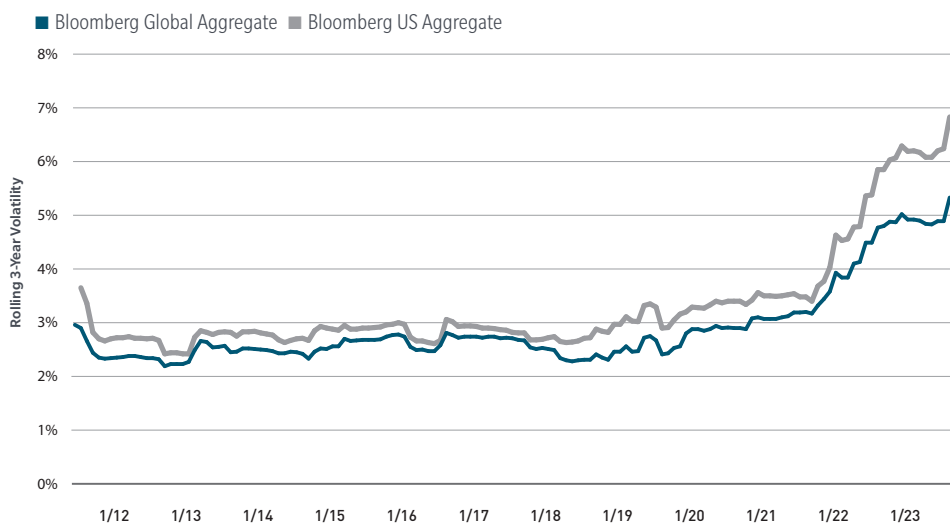
Exhibit 2: Historical impact on yields from hedging global bonds to USD



Source: Bloomberg from 29 November 2013 through 30 November 2023. Based on 3-month forward currency rates for a basket of currencies composed of 45% USD, 22.5% euros, 10% JPY, 5% GBP and 2.5% CAD, which are approximate weights of those currencies in the Bloomberg Global Aggregate Index (note that 15% of the index is denominated in other currencies that were not assumed to be hedged for purposes of this illustration.)

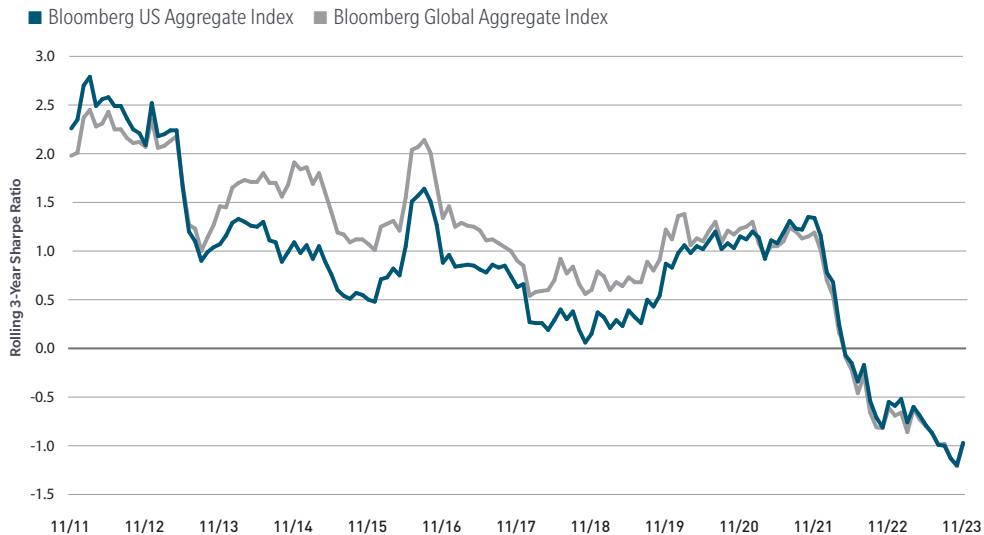
Considering the benefits of hedging, global bond yields today are comparable to their US counterpart, at about 4.9%. But yields tell only part of the story. When hedged to USD, global bonds have exhibited lower standard deviation and higher Sharpe ratios than US bonds over the past decade, as shown in Exhibits 3 and 4.

Exhibit 3: Rolling 3-year volatility



Source: FactSet based on monthly returns from 30 November 2008 through 30 November 2023 for the Bloomberg Global Aggregate Index (hedged to USD) and Bloomberg US Aggregate Index.

Exhibit 4: Rolling 3-year Sharpe ratio



Source: FactSet based on monthly returns from 30 November 2008 through 30 November 2023 for the Bloomberg Global Aggregate Index (hedged to USD) and Bloomberg US Aggregate Index. Risk free rate assumed to be the FTSE 3-month US T Bill Index.

Global bonds in an LDI context

When considering the application of global bonds in an LDI context, we must consider the duration characteristics and correlation with plan liabilities and other assets commonly used in DB plans, as shown in Exhibit 5.

Exhibit 5: Correlation of global bonds with other asset classes

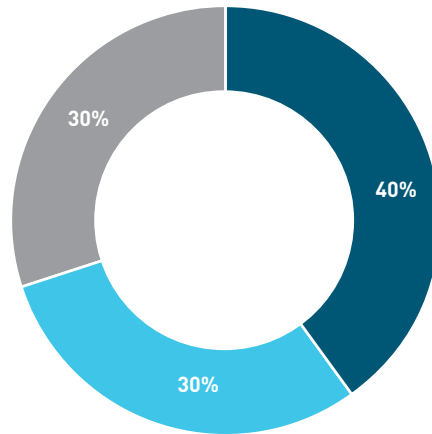
| | Global Bonds (hedged to USD) | US Aggregate Bonds | US Intermediate Credit | US Long Government Credit | US Treasuries |
|------------------------------|------------------------------|--------------------|------------------------|---------------------------|---------------|
| Global Bonds (hedged to USD) | 1.00 | - | - | - | - |
| US Aggregate Bonds | 0.96 | 1.00 | - | - | - |
| US Intermediate Credit | 0.88 | 0.89 | 1.00 | - | - |
| US Long Government Credit | 0.93 | 0.96 | 0.85 | 1.00 | - |
| US Treasuries | 0.88 | 0.93 | 0.70 | 0.89 | 1.00 |

Source: FactSet. Correlations based on monthly returns from 30 November 2013 through 30 November 2023 for the following indices: Bloomberg Global Aggregate Index (hedged to USD), Bloomberg US Aggregate Index, Bloomberg US Intermediate Credit Index, Bloomberg US Long Government Credit Index, Bloomberg Global US Treasury Index.

We see a high correlation between global bonds and typical assets found in LDI portfolios. Taking this a step further, we looked at the correlation between global bonds and a portfolio of assets that might be used to hedge a hypothetical liability with a duration of about eight years, as shown in Exhibit 6.

Exhibit 6: Hypothetical liability-hedging portfolio

■ US Treasury ■ US Intermediate Credit ■ US Long Govt/Credit



DURATION

7.8 years

0.96

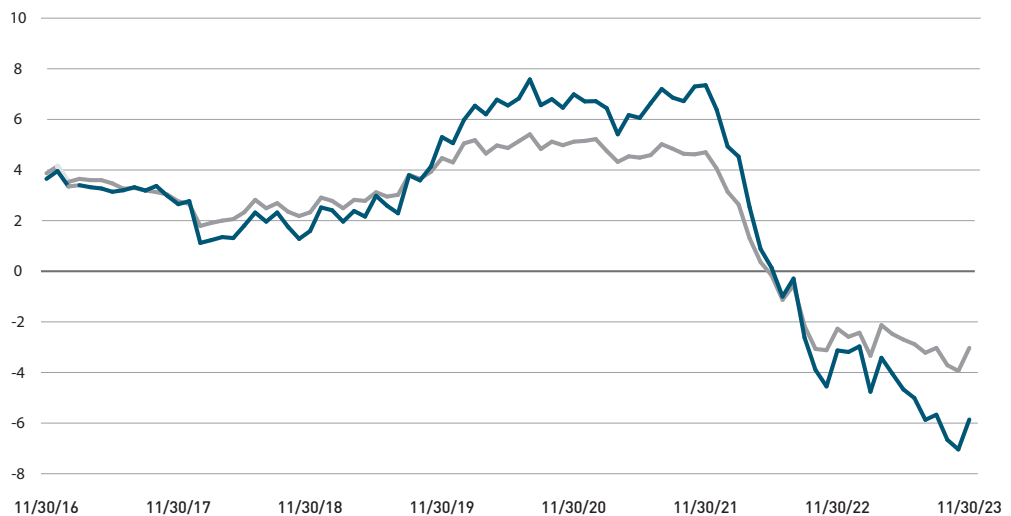
CORRELATION WITH GLOBAL BONDS

For illustration purposes only.

This high correlation is further illustrated when we compare rolling and cumulative returns for global bonds versus the liability-hedging portfolio, as shown in Exhibits 7 and 8.

Exhibit 7: Rolling 3-year returns for global bonds vs. hypothetical liability-hedging portfolio

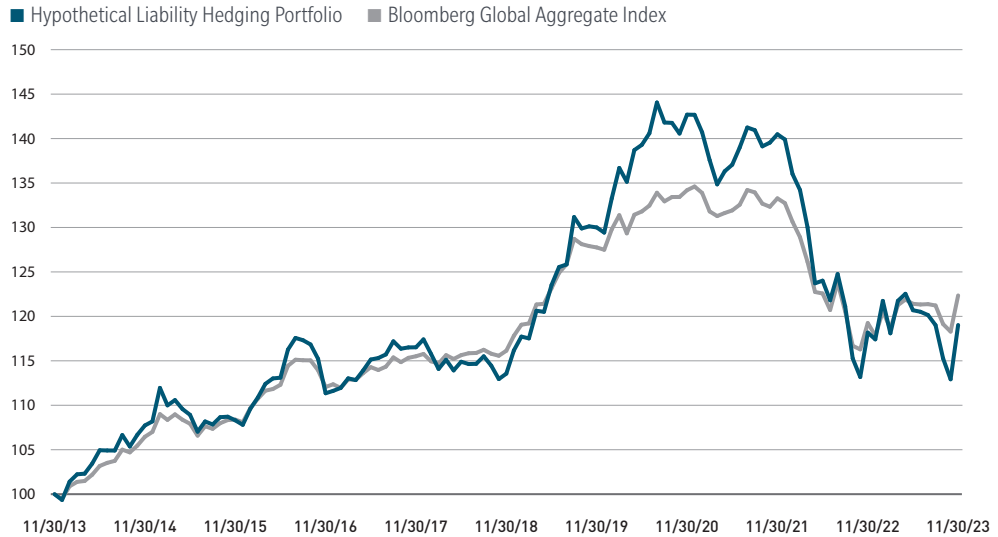
■ Hypothetical Liability Hedging Portfolio ■ Bloomberg Global Aggregate Index



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Source: FactSet based on monthly returns from 30 November 2013 through 30 November 2023 for the Bloomberg Global Aggregate Index (hedged to USD). To simulate a liability with a duration comparable to that of the Global Aggregate Index, returns for the "Hypothetical Liability" are based on a liability with a duration that is 70% of the FTSE Pension Discount Curve Short Index.

Exhibit 8 – Cumulative return for global bonds versus hypothetical liability-hedging portfolio



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We see that global bonds have generally kept pace with the hypothetical liability-hedging portfolio over rolling 3-year periods, and for the past 10 years, global bonds have slightly outperformed the hypothetical liability-hedging portfolio, with an annualized return of 2.04% versus 1.76%.

What types of entities could benefit from global bonds?

Global bonds may be a good fit for well-funded DB plans that are well along their glide paths and are seeking to increase their allocation to physical bonds. Our analysis has found that global bonds, when hedged back to USD, can be highly correlated with existing LDI portfolios, and over time have done a good job of tracking liabilities with a comparable duration profile.

DB plans may not be the only entities that can potentially benefit from global bonds. Any entity currently employing a US-centric bond portfolio to hedge interest-sensitive liabilities such as insurance companies, endowments and foundations might find global bonds an attractive complement to traditional US Treasuries and credit.

While our analysis has focused on the beta case for global bonds, we believe an active approach to the asset class provides the opportunity to generate additional return through asset allocation, geographical bias, quality, and sector and security selection within the context of a larger universe of issues. We will explore this theme further in a forthcoming piece. ▲

Endnotes

¹ Source: Vanguard 2022 Pension Sponsor Survey.

² Source: Milliman 2023 Corporate Pension Funded Study, April 2023, and Pension Funding Index, November 2023.

³ Source: FTSE Pension Discount Curve data as of 30 November 2023. Discount rate for “Intermediate” plan increased from 2.74% on 12/31/2022 to 5.28% on 11/30/2023, while duration decreased from 16.83 years to 13.41 years over the same period. Discount rate for “Short” plan increased from 2.63% to 5.26%, and duration decreased from 13.42 to 10.96 over the same period.

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