PGIM REAL ESTATE

PERSPECTIVES

Private Real Estate Debt

Improving Defined Contribution Outcomes

October 2022

Target date funds and auto features have driven meaningful improvements in the retirement readiness of many Americans since the passage of the Pension Protection Act of 2006. Yet in the current environment, defined contribution fiduciaries may be wondering where returns will come from given the outlook for traditional equities and fixed income.

As the defined contribution landscape continues to evolve, and particularly as income solutions are prioritized for both in-plan and decumulation strategies, accessing private real estate debt through multi-asset portfolios may be one lever fiduciaries can pull to help improve participant outcomes.

Bond yields today are still below historical long-term averages, and this presents a challenge for investors looking for returns in fixed income. In this piece we provide some historical perspective on the potential benefit of including private real estate debt as part of a fixed income portfolio.

We will explore potential benefits of private real estate debt against four other asset classes that are commonly used as diversifying strategies in the fixed income space, in addition to the Bloomberg US Aggregate Bond Index.

The asset classes considered, and respective proxies include:

1. **US Aggregate Bonds**:
   Bloomberg US Aggregate Bond Index
2. **Real Estate Debt**:
   Giliberto-Levy Real Estate Total Return Index
3. **Commercial Mortgage-Backed Securities (CMBS)**:
   Bloomberg CMBS Investment Grade Index
4. **High Yield Bonds**:
   Bloomberg US Corporate High Yield Index
5. **Floating Rate Debt**:
   Credit Suisse Leveraged Loan Index
6. **Emerging Markets Debt**:
   JP Morgan EMBI Global Diversified Index

Among the six asset classes considered in the analysis, Real Estate Debt has the highest historical Sharpe ratio. While a few other asset classes had higher returns over the period, they've exhibited significantly higher volatility (**Exhibit 1**).

Exhibit 1: Summary Return and Risk Differences

Annualized Geometric Returns, Standard Deviation (Annualized Based on Quarterly Returns), and Sharpe Ratios

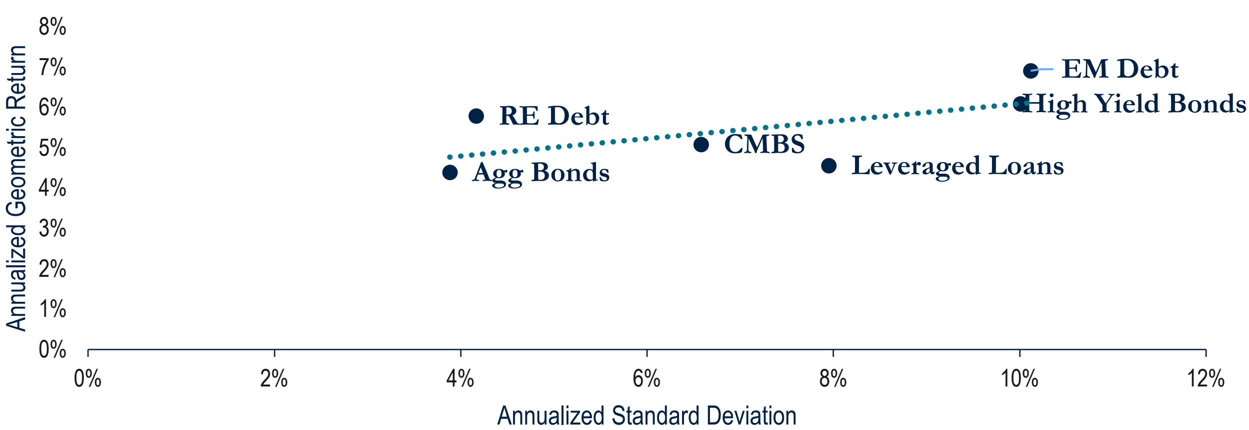
	Agg Bond	RE Debt	CMBS	High Yield	Lev Loan	EM Debt
Geometric Return	4.39%	5.79%	5.09%	6.10%	4.56%	6.91%
Standard Deviation	3.88%	4.16%	6.58%	10.01%	7.95%	10.12%
Sharpe Ratio	0.65	0.94	0.49	0.42	0.34	0.50

Note: Data for the analysis is obtained from Morningstar Direct for all but the Giliberto-Levy Real Estate Total Return Index, which is obtained directly from Giliberto-Levy. Data is available at quarterly frequency starting in the first quarter 1997 and goes through the second quarter 2022, for a total of 102 quarters or 25 years of returns.

We contrast the returns and risks of the different asset classes in **Exhibit 2**.

Exhibit 2: Asset Class Comparison

Annualized Standard Deviations and Annualized Returns (%)



Private Real Estate Debt vs. CMBS

The assumption that private real estate debt is simply a less liquid version of Commercial Mortgage-Backed Securities (CMBS) is not the full story. Private mortgage debt generally offers several advantages that CMBS do not, including:

- greater exposure to more stable property types such as multifamily and industrial
- no exposure to subordinate debt
- optionality to manage loan default risks if and when they emerge

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Next, we seek to understand how the various asset classes would have potentially improved the efficiency of a fixed income portfolio by running a series of surplus optimizations. Surplus optimizations are an extension of the more traditional mean variance optimization framework, where the efficient frontier is based on the difference in the risk and return of the portfolio and the assumed liability, which is US Aggregate Bonds. Surplus optimizations are commonly used by defined benefit plan sponsors, endowments and foundations and insurance companies that must design portfolios in the presence of a specific liability. For defined contribution plans, surplus optimizations can be used when constructing portfolios that have a specific benchmark or goal, and can be used in the context of a retirement income liability.

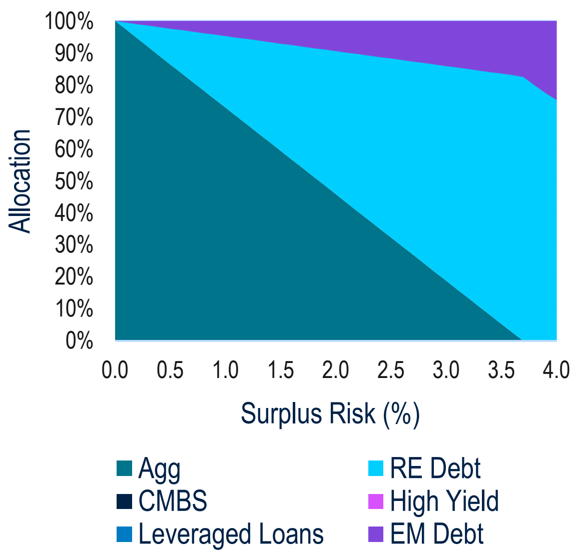
Within the context of this analysis, we define the liability for the surplus optimizations as the returns of the Bloomberg US Aggregate Bond Index. Therefore, the results of the optimization will provide context as to the optimal weights among the considered asset classes for investors who are interested in moving away from a traditional core bond exposure (i.e., US Aggregate Bonds) by introducing, or increasing the potential weights to, other fixed income asset classes.

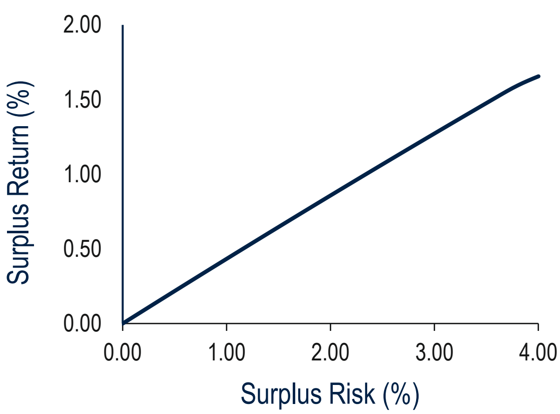
For our analysis we use returns for the entire period and solve for the portfolio weights, among the six possible asset classes, that maximize the return for a given level of surplus risk. We test surplus risk levels of 0.0% to 8.0% in 0.1% increments, which means we perform 81 separate optimizations.

Exhibit 3 provides context on the allocations to the respective asset classes for varying levels of surplus risk, as well as information about how the return impact (i.e., surplus return) varies for each of the efficient portfolios.

Exhibit 3: Surplus Optimizations

Asset Class Allocation vs. Surplus Risk (%) and Surplus Return vs. Surplus Risk (%)





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For an investor desiring no surplus risk versus the Bloomberg Aggregate Bond Index, he or she would allocate 100% to US Aggregate Bonds, which is consistent with expectations. Moving into the positive surplus risk space, the allocations increase to Real Estate Debt and Emerging Markets Debt. For example, with a 2% surplus risk target, the allocation is 45.8% US Aggregate Bonds, 44.8% Real Estate Debt and 0.09% Emerging Markets Debt. For surplus risk levels above 4%, the optimization suggests no allocation to US Aggregate Bonds and an increasing allocation to Emerging Markets Debt. While allocating away from US Aggregate Bonds into Real Estate Debt and Emerging Markets Debt introduces surplus risk into the portfolio, it has a notable positive impact on expected (surplus) return, which would have resulted in higher risk-adjusted performance for investors.

Conclusions

Overall, this analysis provides strong evidence for the historical benefits of including Real Estate Debt as part of a fixed income portfolio, especially for investors interested in moving into asset classes that have the opportunity to generate higher returns at marginally higher risk levels. What is the optimal way to include private real estate debt in defined contribution portfolios? Professionally managed multi-asset solutions, such as stable value, white label fixed income and/or target date funds, provide access without offering an illiquid asset class on a standalone basis. Professional management, combined with strong risk-adjusted returns and enhanced yield potential, creates an attractive proposition for consideration within defined contribution plans.

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Important information

Important information *(continued)*

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