Market Insight

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Securitized Assets:

An Untapped Market for Diversifying Credit Risk in LDI Portfolios

Executive Summary

- At this stage in the credit cycle, many plan sponsors seeking to de-risk have concerns about maintaining sizeable allocations to long corporate bonds
- While allocating to Treasury securities (the tool traditionally used to diversify credit risk) enables sponsors to maintain low tracking error to plan liabilities, it also forces plan sponsors to sacrifice the relative yield and total return potential offered by corporate credit
- Voya's analysis reveals that when properly sized and aligned with a plan's liabilities, allocations to securitized assets can help plan sponsors diversify their corporate credit exposure without sacrificing yield and total return potential.
- Allocations to securitized also provide investors with liquidity and minimize spread duration risk, allowing investors the potential to take advantage of credit volatility

Finding New Tools for Today's Challenges

Soaring equity prices are helping improve the funded status of many corporate pension plans, encouraging plan sponsors to de-risk their portfolios with increased allocations to fixed income. Traditionally, plans seeking to de-risk have turned to long duration investment grade public corporate bonds. However, massive growth in the corporate credit markets since the crisis and the corresponding inflated prices, compressed spreads, and looser underwriting standards are raising concerns among plan sponsors with large allocations to corporate credit.

Accordingly, many plan sponsors are seeking to diversify their corporate credit risk. Previously, we published research showing how incorporating Investment Grade Private Credit into an LDI framework can enhance downside protection and reduce issuer concentration risk. In this analysis we explore the effective role securitized assets can play in de-risking strategies.

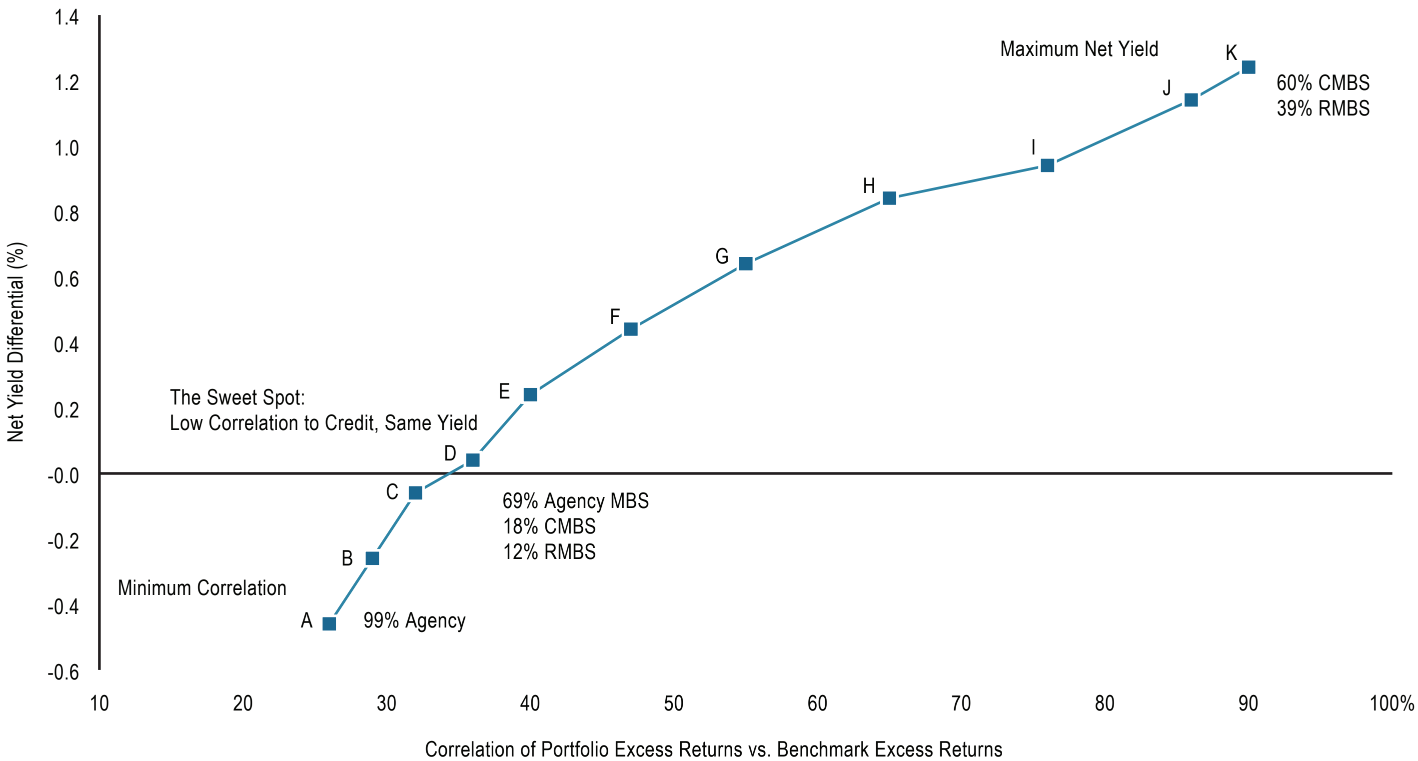
The Asset Allocator's Seat: Using Securitized Assets to Diversify Credit Risk without Sacrificing Yield

Plan sponsors have historically turned to U.S. Treasuries to diversify the credit risk in their LDI strategies. Treasuries are an effective way to diversify credit risk without increasing tracking error to plan liabilities. However, allocations to Treasuries also force plan sponsors to sacrifice yield and total return potential relative to long corporate allocations. With a properly sized allocation to securitized assets, plan sponsors can diversify credit risk and maintain the yield/total return potential of corporate credit allocations.

The analysis in Figure 1 illustrates the efficacy of securitized assets as a tool to diversify credit risk in liability-hedging portfolios. We added differently sized securitized allocations to a hypothetical pension portfolio in an attempt to minimize the correlation of portfolio excess returns with a high quality corporate bond index (the BofAML 10+ Year AAA-A US Corporate Constrained Index). As Figure 1 shows, a securitized allocation consisting primarily of long duration agency CMOs maintained the same yield as the credit index.

Figure 1. Efficient frontier: Optimizing the potential risk/reward benefits of Securitized Assets

Efficient Frontier: Net Yield Differential vs. Correlation



Portfolio & Benchmark Composition		Asset Class Statistics				Asset Class Contribution			
Asset Class	MV%	Yield	Duration	Spread Duration	Convexity	Contrib. to Yield	Contrib. to Duration	Contrib. to Spread Duration	Contrib. to Convexity
Agency MBS	69%	4.0%	10.4	10.6	-0.5	2.8%	7.2	7.4	-0.3
Non-Agency RMBS	12%	4.5%	2.6	5.4	-0.0	0.5%	0.3	0.6	-0.0
CMBS	18%	6.0%	3.0	3.1	0.2	1.1%	0.5	0.6	0.0
Cash & Cash Equivalents (Tsy/Futures)	1%					0.3%	5.8	–	2.7
Portfolio	**100%**					**4.7%**	**13.9**	**8.6**	**2.4**
Benchmark	**100%**					**4.6%**	**13.9**	**13.7**	**2.7**
Active	**100%**					**0.0%**	**0.0**	**-5.1**	**-0.3**

Source: Voya Investment Management, Bloomberg Barclays. As of 10/31/2018.
Notes: Statistics reflect 10/31/2018 figures. Benchmark is 100% ICE BofAML 10+ Year AAA-A US Corporate Constrained Index

When a plan sponsor's goal is to match the yield of a high-quality (A-rated or above) long corporate bond benchmark, the excess returns from a portfolio of securitized assets are expected to have a relatively low correlation to the excess returns of such benchmark due to a high allocation to long duration agency CMOs. As the return target increases, the diversification benefit of securitized assets decreases as the securitized asset allocation shifts from long duration agency CMOs to CMBS and non-agency RMBS, which have a higher correlation to credit risk.

For many plan sponsors, this analysis likely prompts the question: What are agency CMOs and what makes them appropriate for de-risking strategies?

Agency CMOs have a Similar Risk Profile to Treasuries

In an LDI context, agency mortgage securities offer similar credit risk diversification as Treasuries. Due to the nature of the agency guaranty in agency securities, there is little to no exposure to the credit component of the underlying mortgage loans, making them attractive options for plan sponsors concerned about credit migration or worse, default risk. However, while agency mortgage securities have a similar risk profile as a U.S. Treasury Bond, Agency CMOs also offer increased yield to compensate for the added prepayment and convexity risk inherent to the asset class, a feature that has contributed to the sector's historical outperformance versus Treasuries (Figure 2).

Figure 2. The historical outperformance of Long Agency CMOs vs Treasuries

	1 Year	3 Year	5 year	10 Year	Duration	Yield to Worst
Long Agency CMO Total Return	2.49	3.98	5.95	6.29	11.1	3.65
Custom Long U.S. Treasury[1]	-0.21	2.62	5.38	3.89	11.1	2.78

Source: Voya IM, Bloomberg Barclays, and ICE Bank of America/Merrill Lynch for the period ended 12/31/2018.
[1] Custom Long U.S. Treasury consists of 62.4% Bloomberg Barclays Long U.S. 10-20 Year Treasury and 37.6% Bloomberg Barclays Long U.S. Treasury Index. This index was constructed to match the duration of the Long CMO Index in order to neutralize duration between the two asset classes. Long CMO Total Return is represented by the ICE Bank of America Merrill Lynch 10+ Year US Agency CMO Excluding IO & PO Index total return. Numbers greater than 1 year are annualized. Past performance is no guarantee of future results.

Agency CMOs in an LDI Framework: Cash Flow Suitability

In traditional agency mortgage-backed securities (aka pass-through securities), investors receive a pro-rata share of principal and interest payments (net of servicing costs) made by the homeowner, which exposes them to prepayment risk and in turn affects the average life of traditional pass-through securities. The cashflow uncertainty makes traditional pass-through securities incompatible with an LDI investment framework.

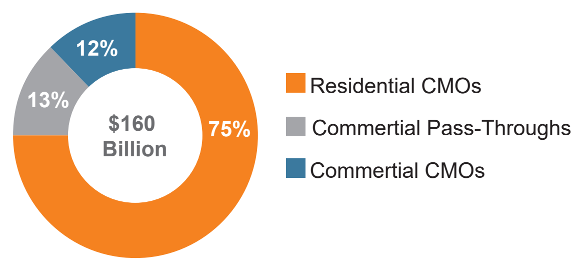
Agency CMOs can be different. Although they derive their cash flows from the same collateral types as traditional pass-through securities, agency CMOs are structured to offer a broader range of expected final maturities and average lives, making certain investments more compatible with an LDI investment framework.

Many agency CMOs have a priority schedule among tranches for principal payments. Each group of bonds issued in a CMO deal is referred to as a tranche. CMOs utilize the cashflows of long-maturity mortgages to create securities with short, intermediate and long expected average lives. Moreover, certain tranches of CMOs have a stable average life, the primary example being "Planned Amortization Classes" ("PAC") bonds. PAC bonds are tranches of CMOs designed to receive their scheduled payments within a window of certainty. This structure enhances their degree of cashflow certainty and minimizes the negative convexity experienced by other CMO tranches. The consistency of cashflow combined with PAC bonds' long expected average-life make these instruments a compelling option for investors seeking to diversify long-duration portfolios.

Agency CMOs: Market Overview

The U.S. Agency mortgage market is one of the largest, most liquid markets in the world. The agency CMO and Agency CMBS markets combined total over $1.7 trillion in outstanding debt. While market estimates vary, we believe that the long (>8 years) tranches equal ~10% of the universe, totaling over $160 billion in securities.

Figure 3. Long duration agency MBS market size



Source: SIFMA. As of 06/30/18

While Commercial Agency CMOs are all linked to the multi-family mortgage sector, the market offers exposure to a broad array of sub-sectors that each present different opportunities and risks (Figure 4).

Figure 4. The different flavors of Agency CMBS

	Freddie Mac K Deals	Fannie Mae GeMS/ACES	Fannie Mae DUS and Megas	Ginnie Mae Project Loans
Size and Liquidity	**Outstanding: $229B** **2018 Issuance: $61B** Benchmark eligible 'Level 2A' LCR	**Outstanding: $62B** **2018 Issuance: $10B** Benchmark eligible 'Level 2A' LCR	**Outstanding: $231B** **2018 Issuance: $56B** 'Level 2A' LCR	**Outstanding: $106B** **2018 Issuance: $16B** 'Level 1' LCR
Collateral	Focus on completed, occupied MF properties	Focus on completed, occupied MF properties	Focus on completed, occupied MF properties	Construction to Completed MF and Healthcare/assisted living properties
Structure	Multi-Tranche, Sequential, Subs	Multi-Tranche, Sequential	Individual Loans and Single-Tranche, Pass-Throughs	Multi-Tranche, Sequential
Guarantee	Freddie on Senior Classes; Timely interest, ultimate principal	Fannie; Timely interest and principal	Fannie; Timely interest and principal	Full faith and credit of US government; timely P&I
Call Protection	Lockout period followed by defeasance/YM	Lockout period followed by yield maintenance/def/fee	Lockout period followed by yield maintenance/def/fee	Lockout period followed by prepayment fee

Source: Voya Investment Management

The differentiated alpha sources inherent to the MBS universe make a compelling case for adding long agency CMOs to traditional long duration portfolios that focus primarily on long corporate bonds (Figure 5).

Figure 5. Agency CMOs have delivered historical diversification benefits

Correlation Based on Total Return	Long U.S. Corporate	Long U.S. Credit	Long U.S. Gov't/Credit	Long U.S. Treasury	Long Agency CMO
Long U.S. Corporate	**1.000**				
Long U.S. Credit	0.997	**1.000**			
Long U.S. Gov't/Credit	0.899	0.918	**1.000**		
Long U.S. Treasury	0.672	0.703	0.925	**1.000**	
Long Agency CMO	0.510	0.536	0.645	0.644	**1.000**

Source: Aladdin and Bank of America/Merrill Lynch for the period 01/01/97–12/31/2018. Index characteristics are as of 12/31/2018. Correlations were calculated using Monthly Total Returns: Bloomberg Barclays U.S. Long Corporate Index, Bloomberg Barclays U.S. Long Credit Index, Bloomberg Barclays U.S. Long Government/Credit Index, Bloomberg Barclays Long U.S. Treasury, and ICE BofA/Merrill Lynch 10+ Year ex-IO & PO Agency CMO Indices.

Incorporating the Full Spectrum of Securitized Assets

While agency CMOs have characteristics most suited to lower a portfolio's correlation to credit risk, plan sponsors can also benefit from incorporating additional sub-sectors of the securitized market.

As the securitization market has evolved, market participation has broadened, building the depth of liquidity across a growing range of asset types. As a result, securitized credit offers a diversified menu of exposures, including the residential housing market, U.S. consumer, and commercial real estate market. Securitized investments also offer a spectrum of structural protections, yield profiles and coupon structures, making the broader asset class an attractive alternative to corporate credit.

Evaluating risk and opportunity among the sub-sectors requires investors to focus on the underlying collateral, structure and third parties. As figure 6 highlights, the importance of each dimension varies across securitized sub-sectors.

The weighted average life of securitized credit investments is also relatively short, meaning plan sponsors using securitized assets in an LDI framework would need to overlay a derivative strategy to match the duration of plan liabilities.

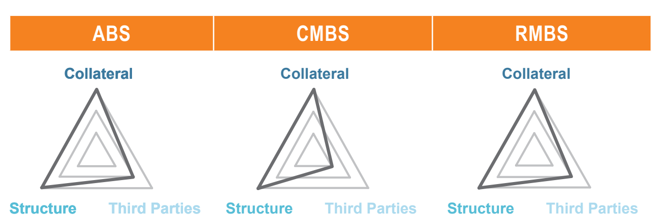
As the efficient frontier in figure 1 highlighted, the combination of securitized assets will vary based on the objectives of each plan sponsor. If a plan sponsor's goal is to simply lower correlation to credit risk without sacrificing yield, allocations will primarily include agency CMOs. If a plan sponsor is less concerned with correlation to credit risk and is seeking higher yield, allocations will include more non-agency RMBS and CMBS.

Conclusion

In the current environment, liability-hedging portfolios have significant allocations to corporate credit, exposing plans to higher levels of risk with less compensation for that risk, especially considering recent spread levels. We believe the flexibility afforded by including the full spectrum of the securitized asset class is an effective way for plan sponsors to combat this challenge. When properly sized and aligned with a plan's liabilities, allocations to securitized assets can help plan sponsors diversify their corporate credit exposure without sacrificing yield and total return potential. However, given the complexity of the securitized space and the idiosyncrasies of each sub-sector, we recommend plan sponsors think about using securitized as a separate allocation that is part of the de-risking glide path.

Figure 6. Deep expertise needed to underwrite the different flavors of securitized credit

Collateral	■ Underlying real property or other asset a borrower pledges to secure a loan from a lender.
Structure	■ Legal and contractual framework for allocation of fees, payments and shortfalls/losses. ■ Typical structures have multiple tranches with varying risk/return profiles with credit enhancement a key dimension. ■ Structure also includes documentation prescribing actions of related third parties.
Third Paries	■ Loan servicers, asset originators, trustees, loan managers, risk retention providers, rating agencies, broker-dealer, et al.



Source: Voya Investment Management

Investment Risks

All investments in bonds are subject to market risks. Bonds have fixed principal and return if held to maturity, but may fluctuate in the interim. Generally, when interest rates rise, bond prices fall. Bonds with longer maturities tend to be more sensitive to changes in interest rates.

All investing involves risks of fluctuating prices and the uncertainties of rates of return and yield inherent in investing. High Yield Securities, or "junk bonds", are rated lower than investment-grade bonds because there is a greater possibility that the issuer may be unable to make interest and principal payments on those securities. As Interest Rates rise, bond prices may fall, reducing the value of the share price. Debt Securities with longer durations tend to be more sensitive to interest rate changes. High-yield bonds may be subject to more Liquidity Risk than, for example, investment-grade bonds. This may mean that investors seeking to sell their bonds will not receive a price that reflects the true value of the bonds (based on the bond's interest rate and creditworthiness of the company).

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