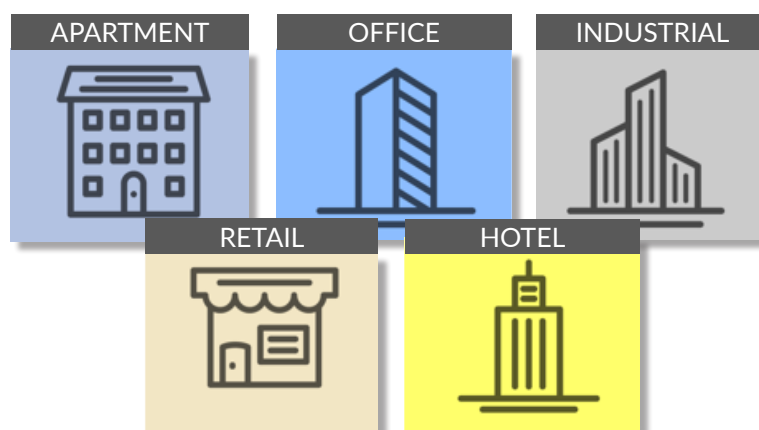


Introduction to Commercial Mortgage-Backed Securities (CMBS)

March 2023

Key Takeaways

- CMBS provide exposure to Commercial Real Estate (CRE) without direct investment in properties.
- CMBS are designed to allow investors to customize risk and return by choosing where in the capital structure to invest.
- Active management of property-type exposure can potentially enhance returns through a variety of economic cycles.



The commercial real estate (CRE) market consists primarily of multifamily, industrial, retail, lodging and office properties. Each property type offers unique characteristics that provide investors a wide range of opportunities. CRE debt outstanding is nearly \$4.5 trillion, of which there is approximately \$730 billion in outstanding private-label CMBS debt across conduit, single asset/single borrower (SASB) and CRE collateralized loan obligation (CLO) structures.¹

What are CMBS?

CMBS are bonds whose cash flows are derived from a loan or pool of loans secured by CRE properties. There are three main subsectors of CMBS:

1. **Conduit:** Backed by a pool of mortgage loans secured by multiple properties that are stabilized and owned by multiple borrowers. These bonds consist of five- and 10-year fixed-rate loans. Investment in conduit offers property-type and sponsor diversification.
2. **SASB:** Backed by a single loan secured by a single property or a group of cross-collateralized properties owned by the same borrower. Bonds can be fixed or floating rate with loan terms ranging from five, seven or 10 years and provide borrowers with increased prepayment flexibility. Investment in SASB offers the ability to target investments in a specific property type.
3. **CRE CLOs:** Backed by a pool of short-term, floating-rate bridge loans. Borrowers typically have business plans to add value, improve or reposition their properties. Loan collateral pools can be static or managed, which allows the manager of the transaction to change the pool over time similar to corporate CLOs. CRE CLO issuers typically retain 15%-to-25% first-loss risk as well as agree to covenants that offer downside protection to bond buyers.

CMBS Structures

CMBS structures are typically sequential pay, meaning any loan principal and scheduled interest payments received are allocated to tranches in order of seniority. Conversely, any losses and interest shortfalls incurred due to defaults are allocated in the opposite manner, reverse sequential. A typical structure would have a senior tranche rated AAA, which carries the highest levels of credit enhancement. Like corporate bonds, ratings then would follow the traditional scale of AA, A, BBB and so on. (Figure 1) The various tranche ratings are based on the underlying collateral quality, probability of default and projected losses, and subordination levels assigned by the rating agencies.

CMBS in a Property's Capital Structure

CMBS deals are secured by nonrecourse first mortgages on income-producing properties.² The borrower's equity interest in the property sits below the first mortgage loan and provides additional credit support to the issued bonds. There could also be a mezzanine loan that sits between the first mortgage and the equity interest. The mezzanine loan is typically secured by the borrower's equity to avoid a conflicting claim on the senior mortgage loan. (Figure 2)

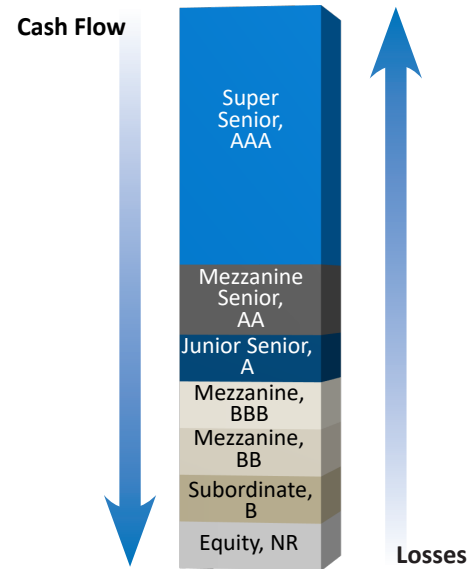


Figure 1
Source: DoubleLine

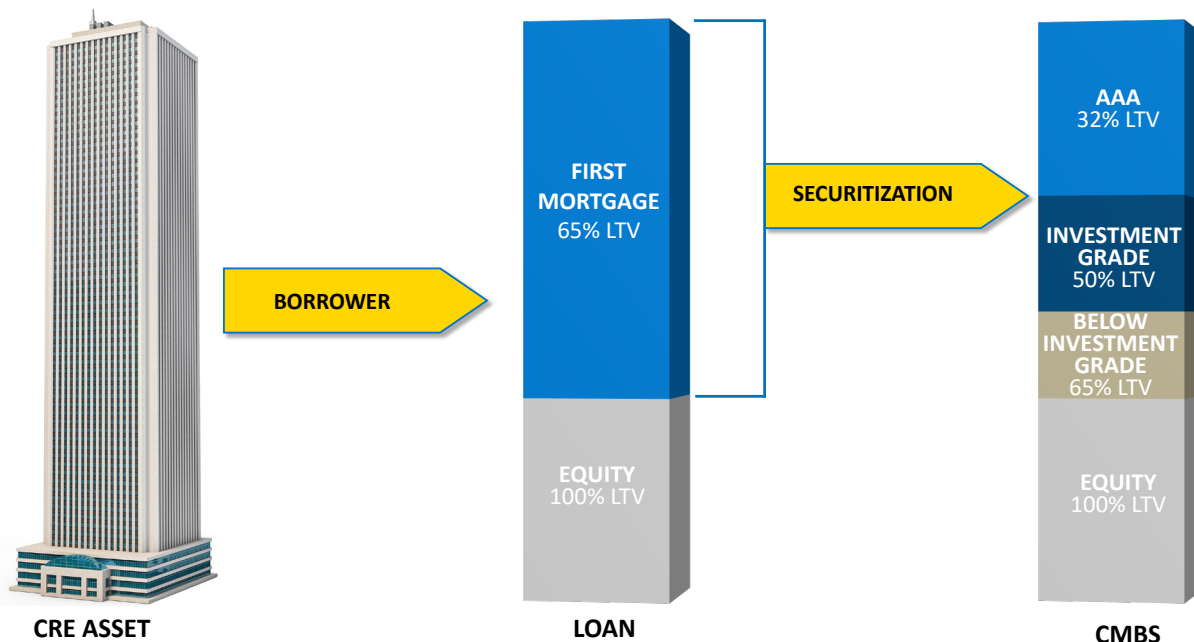


Figure 2

Source: DoubleLine. Not drawn to scale. For illustrative purposes only. This is a hypothetical example for single-borrower securitization for discussion purposes based on market conditions as of January 2023. Loan-to-Value (LTV)

CMBS Ratings

CMBS in the senior portion of the capital structure have increased credit enhancement and are designed to further insulate investors from principal losses. These bonds trade like other highly rated credit products.

The primary drivers of senior-rated CMBS performance:

- *Involuntary prepayments:* While not exposed to losses directly, senior-rated CMBS can still receive principal proceeds prematurely from loan liquidations driven by defaults in the underlying pool.
- *Extension risk:* A loan extension beyond the maturity date might impact a senior-rated CMBS bond's price and yield.
- *Overall CRE fundamentals:* Weaker CRE fundamentals that are not impacting all property types uniformly can create dislocations in the market.

Mezzanine classes of CMBS range from bonds rated AA+ through BBB-. While subordinate to bonds rated AAA, mezzanine bonds have increased credit enhancement that is commensurate with an investment grade (IG) rating. By design, the more senior the rating, the more credit enhancement offered to protect investors from principal losses due to defaults.

The primary drivers of mezzanine performance:

- *Principal loss:* Though not as exposed as the subordinate tranches, some junior mezzanine bonds could realize losses.
- *Interest shortfalls:* Non-performing loans that are not paying interest could trigger an interest shortfall.
- *Overall CRE fundamentals*

CMBS Issuance

Private-label CMBS issuance was severely impacted by the Global Financial Crisis (GFC), as no deals priced in 2009. However, issuance resumed in 2010 and reached a new post-GFC high of \$160 billion in 2021. (Figure 3) SASB and CRE CLO issuance continues to grow and are becoming meaningful segments of the CMBS market.

Private-Label CMBS Issuance and Outstanding

As of December 31, 2022

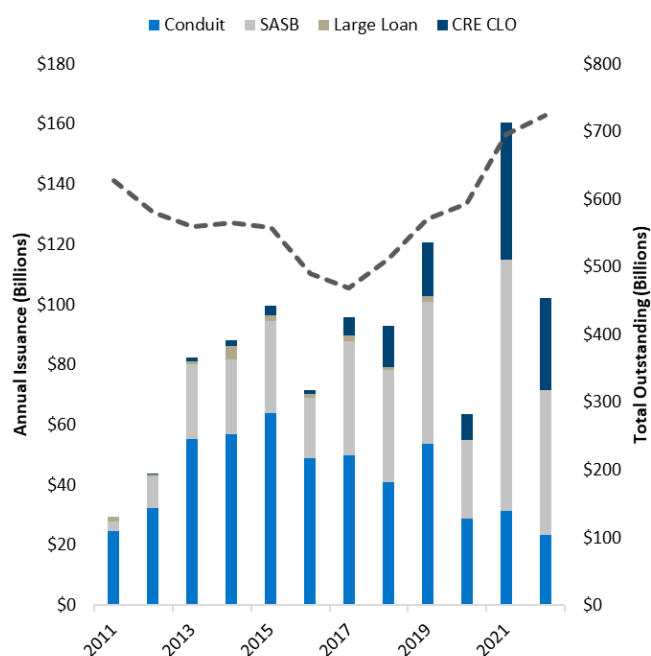


Figure 3

Source: DoubleLine, BofA Global Research. Dashed line represents total outstanding.³

CMBS 1.0 (pre-GFC) vs. 2.0 (post-GFC)

Following the GFC in 2008, the CMBS industry, along with other structured products sectors, underwent widescale changes aimed at providing better protection for investors. A summary of changes that were enacted:

- Stricter underwriting standards.
- Conservative changes to rating agency criteria, which resulted in a material increase of required subordination for IG ratings.
- Implementation of the risk retention requirements of the Dodd-Frank Act.
- Improvement in the quality of representation and warranties, both in the scope of required representations and ongoing monitoring of the counterparties' credit performance.

CMBS 1.0, also known as legacy CMBS, refers to conduit deals issued before the GFC while CMBS 2.0 refers to conduit deals issued since 2010. CMBS 2.0 has significantly improved metrics, with lower loan-to-value (LTV) ratios, higher debt service coverage (DSCR) and subordination levels, and tighter lender underwriting standards. (Figure 4)

CMBS Deal Metrics	CMBS 1.0	CMBS 2.0
LTV	70.0%	52.8%
DSCR	1.4x	2.6x
Debt Yield	8.9%	11.5%
AAA Credit Enhancement	12.0%	19.5%
AA Credit Enhancement	10.0%	15.0%
A Credit Enhancement	7.6%	11.1%
Average Cumulative Loss	7.2%	0.6%

Figure 4

Source: DoubleLine, BofA Global Research. Deal metrics for CMBS 1.0 represent 2007 vintage conduit deals. CMBS 2.0 represent 2022 vintage conduit deals. Average cumulative loss for 1.0 from deal vintage 2000 to 2008; 2.0 from deal vintage 2010 to 2022.

The Case for CMBS in Today's Environment

Attractive Relative Value: Spreads for CMBS rated AAA are in the 84th percentile going back to 2012. Spreads for CMBS rated AA- and A- are in the 94th percentile, meaning spreads have only been wider 6% of the time since 2012. This compares to the 51st percentile for IG and high yield (HY) corporate bonds. (Figure 5) We believe the lag in spread tightening relative to corporates should allow CMBS investors the potential to additional return a on a relative basis.

Current Spread vs. Percentile Rank

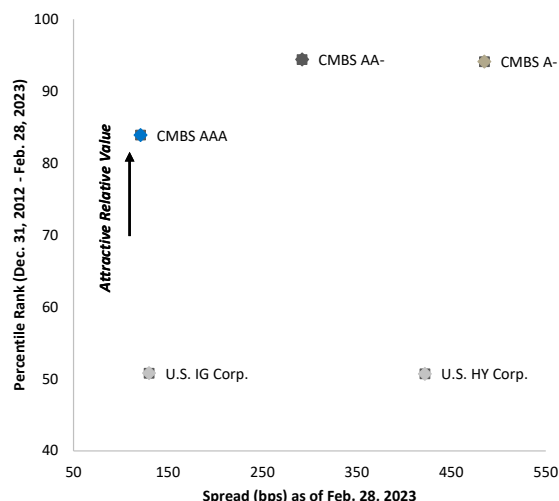


Figure 5

Source: DoubleLine, Bloomberg

Targeted Exposure for Desired Outcomes: The CMBS market has evolved in recent years and now offers a variety of options for investors. Investors can choose across various bond structures and tranches to fit investment profiles, including yield, risk, duration and property-type exposure. (Figure 6)

Total Outstanding Private-Label CMBS (in billions)

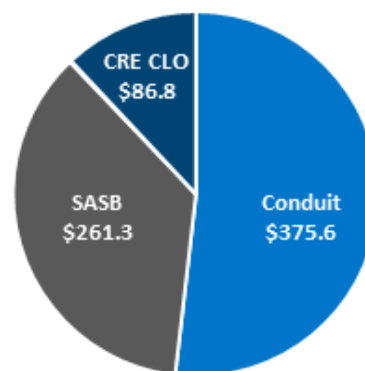


Figure 6

Source: DoubleLine, Bloomberg, as of Dec. 31, 2022

Further a benefit to an actively managed, diversified CMBS portfolio is the ability to shift exposure across property types, each of which has their own individual and fundamental outlooks at any given time.

Factors impacting underlying fundamentals vary by property type over time and include:

- Geographic location
- Demographics
- Supply and demand dynamics
- Sensitivity to the broader economic cycle
- Property-specific factors

By actively managing investments across bond structures and property types, we believe this gives CMBS investors the ability to successfully navigate through a variety of economic cycles.

DoubleLine's Expertise in CMBS

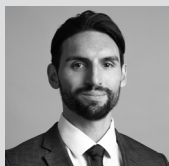
DoubleLine's CMBS investment team comprises experienced professionals with deep credit backgrounds spanning investments, originations, asset management, servicing and workouts. The credit expertise of our professionals is incorporated into the management of the portfolio, providing deep experience investing across the full CMBS capital structure and across all property types and domestic markets. The team believes that this insight and knowledge is a critical advantage that differentiates it from other CMBS investment managers and affords it the ability to underwrite at a granular level and compare opportunities to manage the portfolio through active investment selection. ■



Morris Chen

Portfolio Manager, Structured Products - CMBS

Mr. Chen joined DoubleLine at its inception in 2009. He is a Portfolio Manager leading the CMBS/CRE Debt Investment team and CRE New Investment Review Group, and is responsible for the oversight and management of all CRE Debt related investments at DoubleLine. Mr. Chen is a permanent member of the Fixed Income Asset Allocation and Structured Products Committees providing valued insight into the CMBS sector. He is also an active participant and speaker at CREFC events. Prior to DoubleLine, Mr. Chen was a Vice President at TCW where he was responsible for CMBS credit analysis and trading from 2004-2009. He holds a BS in Business Administration with concentrations in Business Development and Finance from the University of California, Riverside.



Phil Gioia, CFA®

Product Specialist

Mr. Gioia joined DoubleLine in 2018. He is a member of the Product Specialist Team. In this capacity, he is responsible for various aspects of DoubleLine product marketing, investment strategy updates, portfolio communications and competitive analysis, with a focus on DoubleLine's Structured Product strategies. Mr. Gioia is also responsible for producing market commentary and dedicated strategy content. As part of the Product Specialist Team he attends the Fixed Income Asset Allocation, Macro Asset Allocation, and Structured Product meetings. Prior to DoubleLine, Mr. Gioia was an Investment Product Manager for Fidelity Investments. He holds a BS in Financial Management and Business Administration with a minor in Accounting from Salve Regina University. Mr. Gioia is a CFA® charterholder and holds the Series 7 and 63 Licenses.

Basis Points (bps) – Basis points (or basis point (bp)) refer to a common unit of measure for interest rates and other percentages in finance. One basis point is equal to 1/100th of 1%, or 0.01% or 0.0001, and is used to denote the percentage change in a financial instrument. The relationship between percentage changes and basis points can be summarized as: 1% change = 100 basis points; 0.01% = 1 basis point.

Below Investment Grade (IG)/Non-Investment Grade (Non-IG) – Term indicating a security is rated below investment grade (IG). These securities are seen as having higher default risk or being prone to other adverse credit events. They typically pay higher yields than higher-quality bonds in order to make them attractive. They are less likely than IG bonds to pay back 100 cents on the dollar.

Bloomberg US Aggregate Bond Index – This index (the "Agg") represents securities that are SEC registered, taxable and dollar denominated. It covers the U.S. investment grade, fixed-rate bond market, with components for government and corporate securities, mortgage pass-through securities and asset-backed securities. These major sectors are subdivided into more specific indexes that are calculated and reported on a regular basis.

Dodd-Frank Wall Street Reform and Consumer Protection Act – Legislation passed in 2010 by Congress in response to financial industry behavior that led to the Global Financial Crisis of 2007-2008. The act sought to make the U.S. financial system safer for consumers and taxpayers.

Investment Grade (IG) – Rating that signifies a municipal or corporate bond presents a relatively low risk of default. Bonds below this designation are considered to have a high risk of default and are commonly referred to as high yield (HY) or "junk bonds." The higher the bond rating the more likely the bond will return 100 cents on the U.S. dollar.

Loan-to-Value (LTV) Ratio – Assessment of lending risk that financial institutions and other lenders examine before approving a mortgage. Typically, loan assessments with high LTV ratios are considered higher-risk loans. Therefore, if the mortgage is approved, the loan has a higher interest rate.

Mortgage Debt-Service Coverage Ratio (DSCR) – The debt-service coverage ratio (DSCR) applies to corporate, government and personal finance. In the context of corporate finance, the debt-service coverage ratio is a measurement of a firm's available cash flow to pay current debt obligations. The DSCR shows investors whether a company has enough income to pay its debts.

Mortgage Debt Yield (DY) – Return a lender would receive if it were to foreclose on the property on day one. Debt yield can be thought of as a lender's perspective of the capitalization rate, the cash flow a property generates relative to a loan amount or lender's basis.

Non-Performing Loan (NPL) – Loan in which the borrower is in default due to the fact that they have not made the scheduled payments for a specified period. Although the exact elements of non-performing status can vary depending on the specific loan's terms, "no payment" is usually defined as zero payments of either principal or interest.

Nonrecourse Debt – Type of loan secured by collateral, which is usually property. If the borrower defaults, the issuer can seize the collateral but cannot seek out the borrower for any further compensation, even if the collateral does not cover the full value of the defaulted amount. The borrower does not have personal liability for the loan.

S&P 500 Index – This unmanaged capitalization-weighted index of the stocks of the 500 largest publicly traded U.S. companies is designed to measure performance of the broad domestic economy through changes in the aggregate market value of the 500 stocks, which represent all major industries.

Standard Deviation – Measure of the variation or dispersion of a set of data from its mean or expected/budgeted value. A low standard deviation indicates that the data points tend to be very close to the mean, whereas a high standard deviation indicates that the data is spread out over a large range of values. A measure of an investment's volatility.

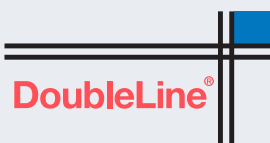
You cannot invest directly in an index.

End Notes

¹ Mortgage Bankers Association, Federal Reserve, National Bureau of Economic Research

² A nonrecourse loan is one in which the lender cannot go after more than the collateral offered for the loan.

³ CMBS Large Loan Securities: one or more commercial mortgage loans made to finance the acquisition, construction and improvement of properties; provided that upon original issuance of such, five or fewer commercial mortgage loans account for more than 20% of the aggregate principal balance of the entire pool of commercial mortgage loans supporting payments on such securities.



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