GUGGENHEIM

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Understanding Collateralized Loan Obligations

Investment Professionals

Scott Minerd
Chairman of Investments and
Global Chief Investment Officer

Anne B. Walsh, JD, CFA
Chief Investment Officer,
Fixed Income

Steve Brown, CFA
Portfolio Manager

Adam Bloch
Portfolio Manager

Report Highlights

- Collateralized loan obligations (CLOs) may offer a high-yielding, scalable floating-rate investment alternative that has a history of strong credit performance.
- Strong credit performance through the financial crisis has supported significant growth in the CLO market, a rapidly expanding CLO investor base, and an active secondary market.
- Guggenheim Investments' combination of credit research, structuring, analytics infrastructure, and legal expertise makes us particularly well positioned to capitalize on the attractive relative value of CLOs.

Overview: What Are CLOs?

A CLO is a type of structured credit. Structured credit is a fixed-income sector that also includes asset-backed securities (ABS), residential mortgage-backed securities (RMBS), and commercial mortgage-backed securities (CMBS). CLOs purchase a diverse pool of senior secured bank loans made to businesses that are rated below investment grade. The bulk of CLOs' underlying collateral pool is comprised of first-lien senior-secured bank loans, which rank first in priority of payment in the borrower's capital structure in the event of bankruptcy, ahead of unsecured debt. In addition to first lien bank loans, the underlying CLO portfolio may include a small allowance for second lien and unsecured debt.

CLOs use funds received from the issuance of debt and equity to acquire a diverse portfolio of senior secured bank loans. The debt issued by CLOs is divided into separate tranches, each of which has a different risk/return profile based on its priority of claim on the cash flows produced by the underlying loan pool. Senior secured bank loans from a diverse range of borrowers—typically 150–250 companies—are pooled in the CLO and actively managed by the CLO manager. Economically, the CLO equity investor owns the managed pool of bank loans and the CLO debt investors term-finance that same pool of loans.

CLOs are complex investments and not suitable for all investors. Investors in CLOs generally receive payments that are part interest and part return of principal. These payments may vary based on the rate loans are repaid. Some CLOs may have structures that make their reaction to interest rates and other factors difficult to predict, make their prices volatile, and subject them to liquidity and valuation risk. Please see "Important Notes and Disclosures" at the end of this document for additional risk information.

Understanding CLO Collateral: Leveraged Loans

Portfolios of bank loans, also known as leveraged loans, act as the collateral supporting CLOs. Leveraged loans are senior-secured loans to below investment-grade companies. CLO portfolios are actively managed over a fixed tenure known as the "reinvestment period," during which time the manager of a CLO can buy and sell individual bank loans for the underlying collateral pool in an effort to create trading gains and mitigate losses from deteriorating credits.

As senior secured claims, these loans enjoy the senior-most claim on all the related company's assets in the event of a bankruptcy and represent the least risky investment in these companies. As you can see in the charts below, leveraged loans' senior secured status has consistently led to lower default rates and higher recoveries compared to unsecured high-yield bonds. CLOs further mitigate default and recovery risk for individual company credits by creating diverse portfolios of leveraged loans—typically 150-250 borrowers—and actively managing that portfolio.

The long-term average trailing 12-month loan default rate is 2.8 percent, according to Wells Fargo data. However, through careful credit selection and active trading, CLO managers may be able to limit annual portfolio loss rates.

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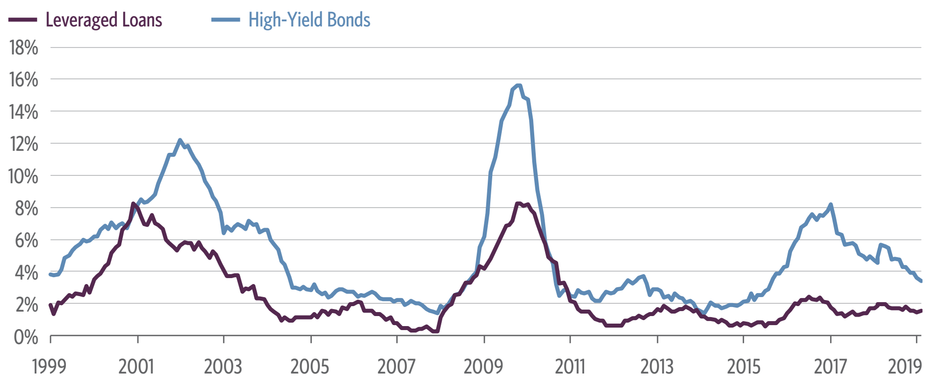
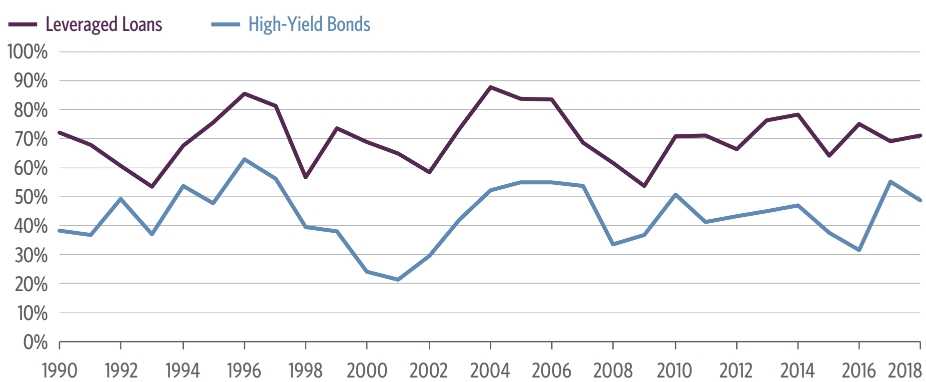
Leveraged Loan vs. High-Yield Default Rates



Source: Guggenheim Investments, Wells Fargo. Data as of 2.1.2019.

Recovery Rates for Leveraged Loans and High-Yield Bonds



Source: Guggenheim Investments, Moody's. Data as of 12.31.2018.

Breaking Down a CLO's Lifecycle

CLO Lifecycle: CLOs typically last eight to 10 years, during which time the vehicle reaches a series of milestones.

Warehouse Period: A warehouse provider finances the CLO manager's acquisition of leveraged loan assets. The warehouse period typically takes six to 12 months. The warehouse loan is expected to be paid off with the proceeds from the CLO's issuance.

Ramp-Up Period: After closing, the CLO manager uses the proceeds from the CLO issuance to purchase additional assets. The ramp-up period usually lasts three to five months and culminates with the ramp-up end date.

Reinvestment Period: The collateral manager is permitted to actively trade underlying assets within the CLO and uses principal cash flow from underlying assets to purchase new assets. The reinvestment period may last up to five years.

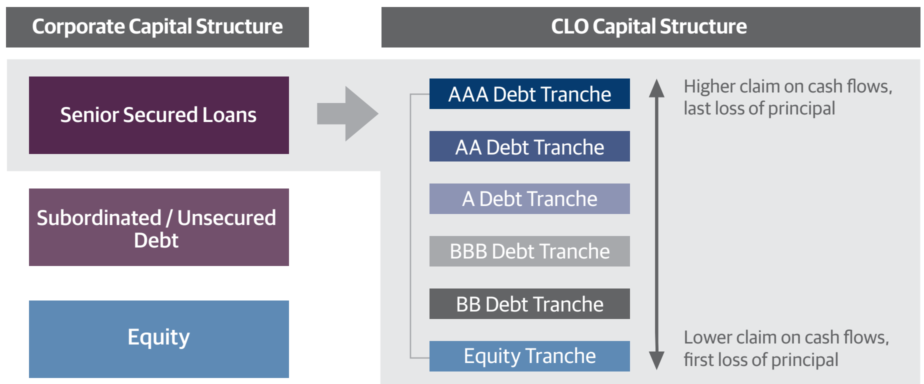
Non-Call Period: During the non-call period the equity may not call or refinance the CLO debt tranches. Non-call periods may last six months to two years, depending on the length of the reinvestment period. The non-call period ends two years after a CLO's closing date. At that point, investors in the equity tranche of the CLO can refinance their positions.

Amortization Period: After the reinvestment period ends, the CLO enters its amortization period, during which cash flows from the CLO's underlying assets are used to pay down outstanding notes. The amortization period represents the consluding phase of a CLO's lifecycle (see diagram, next page).

Understanding CLO Structures

To purchase the portfolio of loans, the CLO raises money by selling debt and equity securities. The debt and equity securities are sold in tranches, where each CLO tranche has a different priority of claim on cash-flow distributions and exposure to risk of loss from the underlying collateral pool. Cash-flow distributions begin with the senior-most debt tranches of the CLO capital structure and flow down to the bottom equity tranche, a distribution methodology that is referred to as a waterfall.

Understanding the Typical Structure of a CLO



Source: Guggenheim Investments. Collateral pools for most CLOs also have a small allowance for second lien and unsecured debt.

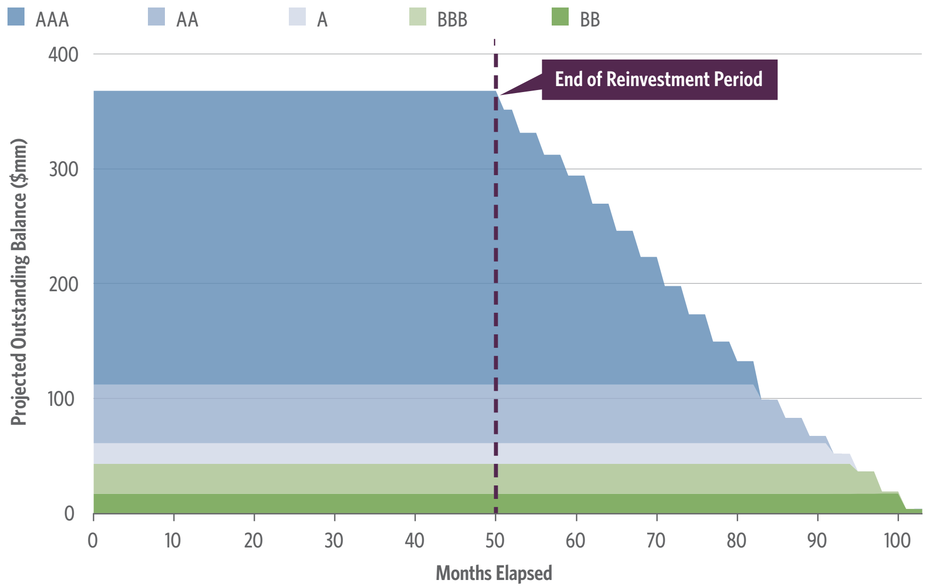
The cash-flow waterfall, in connection with performance-based tests, provides varying degrees of protection to the CLO's debt tranches. The most senior and highest-rated AAA tranche has the lowest yield but enjoys the highest claim on the cash-flow distributions and is the most loss-remote. Mezzanine tranches pay higher coupons but are more exposed to loss and have lower ratings. The most junior tranche, equity, is the riskiest, is not rated, and does not have a set coupon. Instead, the equity tranche represents a claim on all excess cash flows once the obligations for each debt tranche have been met.

CLOs face a series of coverage tests to help ensure the cash flows generated by the underlying bank loan collateral meet the distribution obligations in the various CLO tranches. One such test is an overcollateralization test, which helps to keep the principal value of a CLO's underlying bank loan pool from exceeding the total principal value of the notes issued by the various CLO debt tranches as long as the CLO debt remains outstanding. If the principal value declines below the overcollateralization test trigger value, cash will be diverted away from equity and junior CLO debt tranches toward senior debt tranche investors.

For example, consider a hypothetical CLO created with $500 million of principal promised to the owners of its various debt tranches. To meet this $500 million obligation, investors and rating agencies may require that the CLO manager use the capital raised from the CLO's debt and equity issuance to purchase $625 million of bank loans. This would result in an overcollateralization ratio of 1.25.

Most securitizations provide for significant principal amortization ahead of the expected maturity, which may mitigate risk of loss without any investor action or hedging.

Hypothetical CLO Amortization Timeline



Hypothetical example for illustrative purposes only. Please see Disclosures for a more complete discussion of risks of investing in CLOs.
*By design, CLO equity tranches receive much of their return from excess spread distributions. Return of stated principal is highly variable.

In practice, each CLO debt tranche has its own targeted overcollateralization ratio. The overcollateralization ratios for each tranche act as covenants and, when tripped, redirect cash flows to purchase additional bank loan collateral or repay the senior-most CLO debt tranche.

CLOs are also subject to a variety of other tests that act in concert in an effort to help protect debt investors from loss. Examples of these tests include a measurement of the industry diversification in the underlying collateral pool of bank loans, and the CLO's exposure to non-senior secured loans. Other tests consider the diversity of borrowers underlying each CLO and set single obligor limits. There are also limitations on the amount of CCC-rated debt that can be included in the underlying collateral pool, which helps contain negative credit drift.

Finally, CLOs mitigate default and recovery risk for individual company credits by actively managing the leveraged loan portfolio. Once a CLO is created, the manager can actively manage the portfolio for the benefit of the debt and equity holders. Because post-crisis CLOs (so-called CLO 2.0) are not subject to mark-to-market tests, the manager will only buy and sell individual bank loans seeking to create trading gains and minimize losses from deteriorating credits, not to manage market price pressures. Nearly all CLOs are not mark-to-market vehicles and have extremely high hurdles to meet before collateral liquidation is triggered, making them better equipped to potentially withstand market volatility. With strong structural protections and historically low default rates, investment-grade CLOs can present an attractive opportunity without assuming undue credit risk.

Structural Protections of CLOs

Credit Enhancement	Performance Tests
Risk-reduction technique that increases the credit profile of structured products	Redirect cash flows from subordinate tranches to purchase additional collateral loans and repay senior debt if collateral performance deteriorates.
Subordination: Deals are structured so junior tranches absorb losses before senior tranches.	**Interest Coverage Test:** Interest on Assets / Interest due on related tranche and all tranches senior to it.
Excess Spread: The weighted average coupon of the loan collateral is higher than the coupon paid to investors to create an additional buffer of cash.	**Overcollateralization Test:** Par amount of assets / Outstanding amount of related tranche and all tranches senior to it.

Source: Guggenheim Investments.

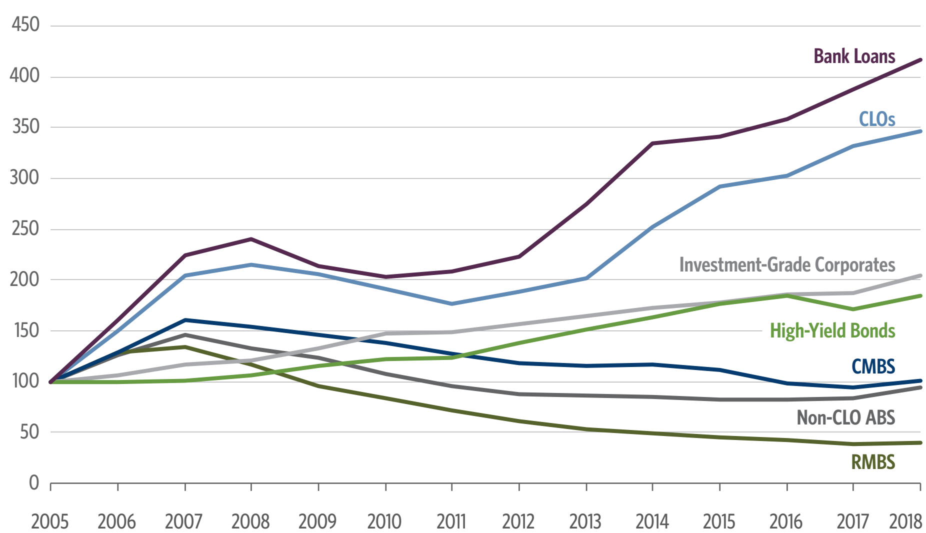
Investor Sponsorship

The structured credit marketplace has evolved significantly since the financial crisis. The CLO market grew from a post-crisis trough of $263 billion to $590 billion as of January 2019, according to Wells Fargo research. The strong historical credit performance and attractive floating-rate coupon attracted many new investors to the space. Prior to the financial crisis, investor sponsorship was

Today's institutional buyer base has created a durable sponsorship for structured credit that is not prone to the same leverage-based selling pressure experienced during the crisis. The result has been growth in bank loans and robust new issuance in commercial ABS following the crisis, in stark contrast to the decline in non-prime RMBS.

CLOs and Bank Loans Outpace Growth of Other Fixed-Income Sectors

Growth of Fixed-Income Sectors; Index 2005 = 100

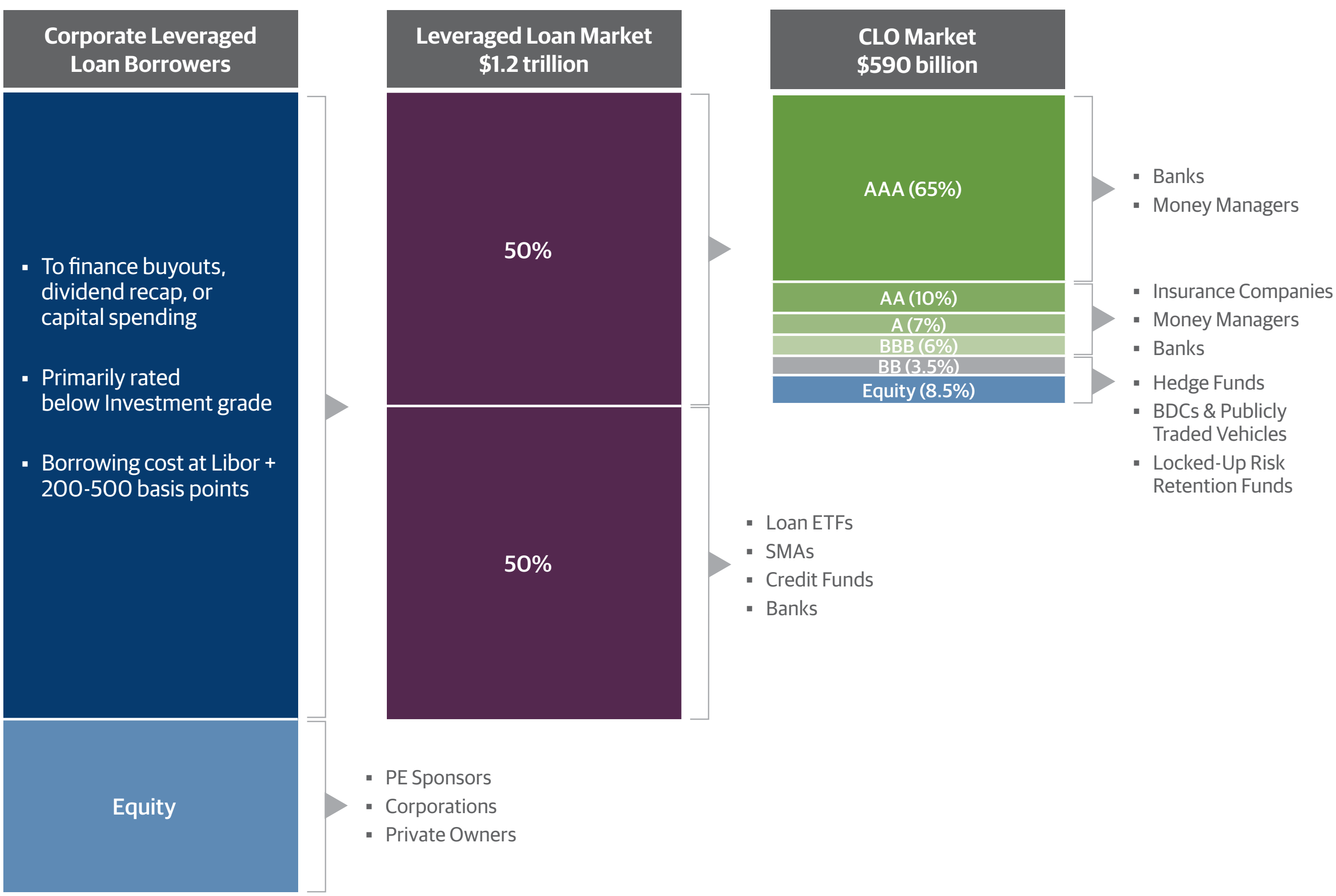


Source: Guggenheim Investments, SIFMA, Wells Fargo, Credit Suisse. Data as of 3.31.2018.

largely dominated by hedge funds, structured investment vehicles (SIVs), and Wall Street trading desks. However, post-crisis regulation has all but eliminated these highly leveraged investor types. Today's investor base is primarily composed of money center banks, large institutional asset managers and insurance companies. These real-money investors do not employ the high leverage strategies of the pre-crisis investor base and, as a result, are less prone to the binge-and-purge trading styles that stem from mark-to-market and margin call pressures.

At $590 billion, CLOs represent half of the total $1.2 trillion U.S. leveraged loan market. About 65 percent of CLO market debt is AAA-rated and is typically held by banks and money managers. A further 23 percent of the market is made up of AA, A, and BBB-rated debt, tranches that are typically held by banks, money managers, and insurance companies. The riskier tranches—BB and equity—round out the remaining 12 percent and tend to attract hedge funds, business development companies, publicly traded vehicles, or locked-up risk retention funds. Borrowers rated below investment grade typically pay a premium of 200-500 basis points over Libor to service their debt.

Leveraged Loan and CLO Markets Capital Flow



Source: Guggenheim Investments, S&P Global Market Intelligence, Wells Fargo. Data as of 3.31.2019.

The chart below shows that secondary trading volumes in both investment-grade and non-investment grade CLOs remained stable post-crisis, including the 2013 “taper tantrum” and the market correction in the first quarter of 2016.

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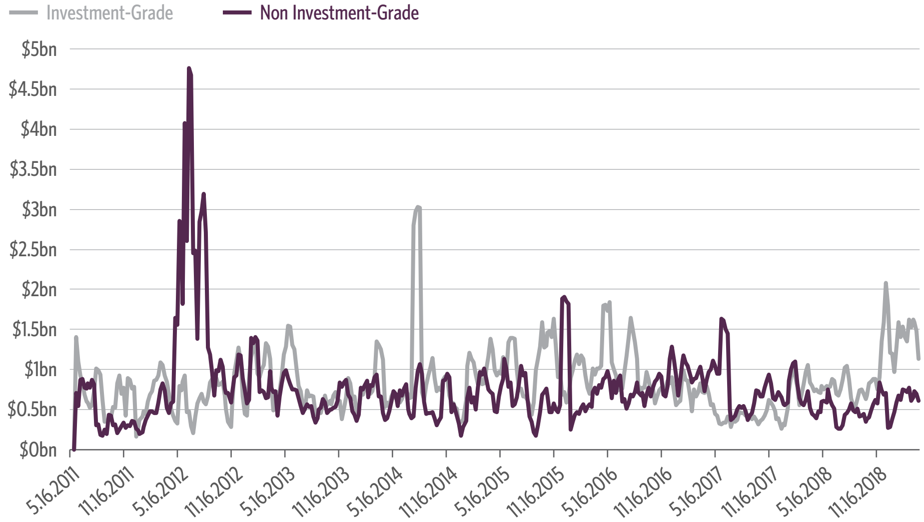
Post-Crisis Trading Volumes Have Remained Stable

Four-Week Moving Average CLO Secondary Trade Volumes



Source: Guggenheim Investments, TRACE. Data as of 4.10.2019.

Historical Performance

The combination of conservative collateral and sound securitization structure has resulted in strong credit performance. In fact, AAA and AA-rated CLO tranches have only experienced one default since 1994, even during the financial crisis. CLOs’ historically low default rate holds true across the ratings spectrum (see table, next page).

While CLOs exhibited strong and resilient credit performance during the financial crisis, post-crisis CLOs feature numerous additional credit improvements compared to their pre-crisis counterparts. First, rating agencies now require that CLOs feature substantially more credit enhancement to each rated debt tranche compared to their pre-crisis counterparts. Second, where pre-crisis CLOs were able to make investments in subordinated bonds and other CLO debt instruments, post-crisis CLOs are collateralized primarily by senior secured bank loans. Lastly, post-crisis CLOs' documentation is much more investor friendly, shortening the trading period during which the manager is able to actively manage the loan portfolio, and limiting extension risk for CLO securities. Thus far among CLO 2.0, 43 post-crisis tranches have been downgraded by S&P or Moody's since 2012, and more than 70 percent of those downgraded tranches are 2014 vintages with most of the balance from 2013. Over half of the tranches were originally rated single B with no downgrades of CLO 2.0 AAA or AA tranches.

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Only 0.3 Percent of CLO Tranches Have Defaulted Since 1994

CLO Tranche Defaults by Original Rating (1994-2019)

	CLO 1.0 (Issued 1994-2009)		CLO 2.0 (Issued 2010-Present)		Total (CLO 1.0 + CLO 2.0)	
Original Rating	Tranches Rated	Defaulted	Tranches Rated	Defaulted	Tranches Rated	Defaulted
AAA	1540	0	1801	0	3341	0
AA	616	1	1388	0	2004	1
A	790	5	1179	0	1969	5
BBB	783	9	1007	0	1790	9
BB	565	20	903	0	1468	20
B	28	3	294	0	322	3
Total:	**4322**	**38**	**6572**	**0**	**10894**	**38**

Source: Guggenheim Investments, S&P Global Ratings. Data as of 4.10.2019.

Assessing Relative Value in CLOs

Core fixed-income investors continually evaluate current and prospective market conditions and assess relative value across a range of asset classes when making portfolio allocation decisions. A portfolio manager's job is to construct a portfolio that is designed to deliver compelling returns in a wide range of outcomes. As these outcomes materialize, managers look to different sectors to perform in different ways to contribute to overall performance. The task of assessing relative value—pricing the risk and reward of possible investments—occurs within the context of a portfolio's overall asset allocation structure.

CLOs have several features that make them an integral component of Guggenheim's fixed-income mutual funds, and institutional portfolios. In addition to their investor-friendly structural protections and credit performance, one of the most important characteristics of CLOs is their floating-rate coupon. CLOs' floating-rate coupons help defend investors against loss in a rising interest rate environment. Fixed-rate securities, as with most government and corporate debt, decline in value as interest rates rise, and investors discount the value of fixed-rate bonds' relatively less attractive coupons. However, the coupons on floating-rate securities such as CLOs adjust based on the current short-term interest-rate environment. As a result, floating-rate securities' prices tend to be more stable in rising interest rate environments than those of their fixed-rate counterparts.

Investing in CLOs is not without risk. As with other securities, CLOs are subject to credit, liquidity, and interest-rate risk, and the specific structure of CLOs means that investors must also understand the waterfall mechanisms and protections as well as the terms, conditions, and credit profile of the underlying loan collateral. Thus, the relative value determination for a CLO is not only its potential return relative to other fixed-income sectors, but also its pricing relative to other short-duration options, and relative to the amount of risk in the security.

At Guggenheim, we have found that CLOs generally pay a spread over their benchmark—typically three-month Libor—that is attractive relative to other securities with similar ratings.

To capture opportunities in the CLO market, investment managers require the expertise to perform rigorous bottom-up research on individual bank loans in the underlying collateral pool. Since some CLOs have as many as 250 borrowers in their collateral pools, investment managers must have significant corporate credit research capabilities to fully evaluate the underlying credit risk in each CLO.

At the same time, the importance of understanding a CLO's structural characteristics cannot be underestimated. Two CLOs with identical collateral assets may produce varied performance due to structural differences. Additionally, the legal documentation that governs a typical CLO can be in excess of 300 pages. While CLOs can offer compelling relative value, investors require the appropriate mix of credit research, structuring, and legal expertise to effectively capitalize on this market opportunity.

The Guggenheim Difference

Guggenheim's Structured Credit team performs rigorous research across the structured credit market and focuses on evaluating the structural features of each individual investment opportunity. Structured Credit team members have extensive experience originating, structuring, and managing securitizations and negotiating terms for our credit portfolio holdings. The Structured Credit team leverages the resources of our 20-person in-house legal team and the insight of our 120+ person Corporate Credit team, which is responsible for more than $75 billion in total corporate credit assets, including $16.5 billion in bank loans and $6.2 billion in CLOs. Guggenheim's integrated resources deliver extensive research insights across a broad spectrum of the bank loan market, and the structuring and legal expertise necessary to uncover and understand the nuances of each individual CLO investment opportunity.

Important Notices and Disclosures

GLOSSARY OF TERMS

Basis Point: A unit of measure used to describe the percentage changes in the value or rate of an instrument. One basis point is equivalent to 0.01%.

First Lien: A security interest in one or more assets that lenders hold in exchange for secured debt financing. The first lien to be recorded is paid first.

Libor: A benchmark rate that some of the world's leading banks charge each other for short-term loans. LIBOR stands for 'London Interbank Offered Rate.'

Libor Floor: Ensures that investors receive a guaranteed minimum yield on the loans in which they invest, regardless of how low the LIBOR benchmark rates falls.

Mark-to-Market: A measure of the fair value of an asset or liability, based on current market price.

Mezzanine Financing: A hybrid of debt and equity financing that is typically used in the expansion of existing companies.

Second Lien: Debts that are subordinate to the rights of more senior debts issued against the same collateral or portions of the same collateral.

Structured Investment Vehicles: Pools of investment assets that attempt to profit from credit spreads between short-term debt and long-term structured finance products such as asset-backed securities.

Tranche: Related securities that are portions of a deal or structured financing, but have different risks, return potential and/or maturities.

Volcker Rule: Prohibits banks from proprietary trading and restricts investment in hedge funds and private equity by commercial banks and their affiliates.

Waterfall: A hierarchy establishing the order in which funds are to be distributed.

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Read a fund's prospectus and summary prospectus (if available) carefully before investing. It contains the fund's investment objectives, risks, charges, expenses and other information, which should be considered carefully before investing. Obtain a prospectus and summary prospectus (if available) at GuggenheimInvestments.com or call 800.820.0888.

1. Guggenheim Investments assets under management are as of 3.31.2019. The assets include leverage of $11.3bn for assets under management. Guggenheim Investments represents the following affiliated investment management businesses of Guggenheim Partners, LLC: Guggenheim Partners Investment Management, LLC, Security Investors, LLC, Guggenheim Funds Investment Advisors, LLC, Guggenheim Funds Distributors, LLC, GS GAMMA Advisors, LLC, Guggenheim Partners Europe Limited and Guggenheim Partners India Management.

2. Guggenheim Partners assets under management are as of 3.31.2019 and include consulting services for clients whose assets are valued at approximately $60bn.

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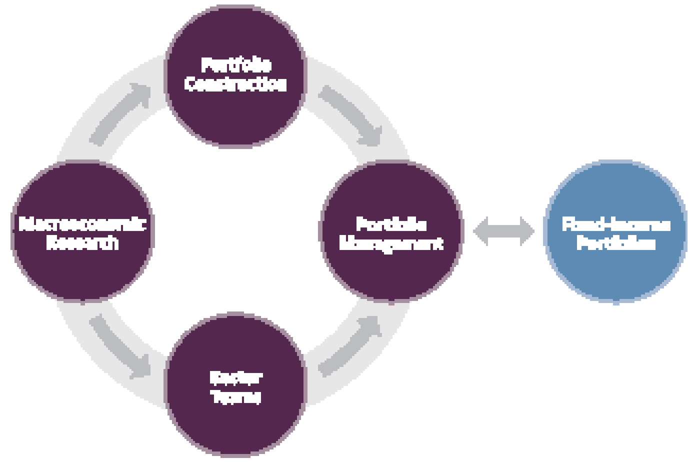
Guggenheim's Investment Process

Guggenheim's fixed-income portfolios are managed by a systematic, disciplined investment process designed to mitigate behavioral biases and lead to better decision-making. Our investment process is structured to allow our best research and ideas across specialized teams to be brought together and expressed in actively managed portfolios. We disaggregated fixed-income investment management into four primary and independent functions—Macroeconomic Research, Sector Teams, Portfolio Construction, and Portfolio Management—that work together to deliver a predictable, scalable, and repeatable process. Our pursuit of compelling risk-adjusted return opportunities typically results in asset allocations that differ significantly from broadly followed benchmarks.



Guggenheim Investments

Guggenheim Investments is the global asset management and investment advisory division of Guggenheim Partners, with more than $209 billion[1] in total assets across fixed income, equity, and alternative strategies. We focus on the return and risk needs of insurance companies, corporate and public pension funds, sovereign wealth funds, endowments and foundations, consultants, wealth managers, and high-net-worth investors. Our 300+ investment professionals perform rigorous research to understand market trends and identify undervalued opportunities in areas that are often complex and underfollowed. This approach to investment management has enabled us to deliver innovative strategies providing diversification opportunities and attractive long-term results.

Guggenheim Partners

Guggenheim Partners is a global investment and advisory firm with more than $265 billion[2] in assets under management. Across our three primary businesses of investment management, investment banking, and insurance services, we have a track record of delivering results through innovative solutions. With 2,400+ professionals based in offices around the world, our commitment is to advance the strategic interests of our clients and to deliver long-term results with excellence and integrity. We invite you to learn more about our expertise and values by visiting GuggenheimPartners.com and following us on Twitter at twitter.com/guggenheimptnrs.

For more information, visit GuggenheimInvestments.com.