White Paper

Understanding CLOs in Today's Dynamic Financial Landscape

As the financial landscape continues to evolve, investors are constantly seeking new opportunities to diversify their portfolios and generate attractive returns. One such investment that has gained significant attention in recent years is Collateralized Loan Obligations (CLO).

CLOs offer a unique and compelling investment proposition, providing exposure to the dynamic and often resilient leveraged loan market. This white paper aims to provide a comprehensive overview of CLOs, explore their key features, potential benefits, and the factors that make them a compelling investment option.

CONTENTS

1. Introduction to Leveraged Loans and CLOs

A. What is a Leveraged Loan?

Leveraged loans are loans secured by a first or second lien on the assets of an issuer, rated BB+/Ba1 or lower, and typically floating rate. Other names for these assets may include high yield bank loans, senior loans, or syndicated loans. Leverage loans are typically used as a funding source in mergers and acquisitions (M&A) and leveraged buy outs by private equity sponsors. They differ from high yield bonds in that they are not "securities" and are not SEC registered. A bank or group of banks first structure the loan and subsequently syndicate it to a group of lenders (institutional investors, banks, finance companies) in the "new issue" or primary market. Thereafter the loans trade in the secondary market generally between dealers and institutional investors. Leveraged loans comprise the majority of CLO collateral.

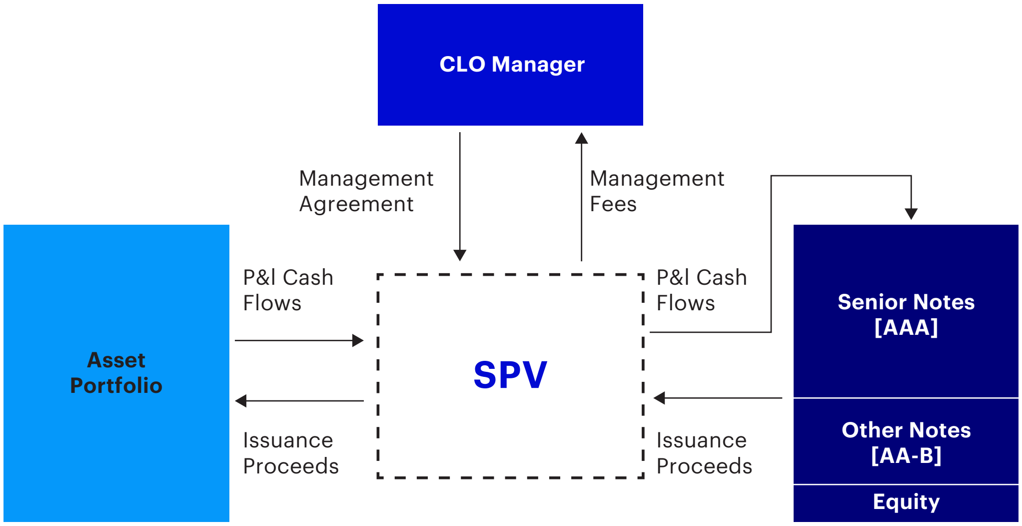
B. What is a CLO?

A CLO, collateralized loan obligation, is a special purpose vehicle (SPV) securitized by a pool of assets, including senior secured leveraged loans and bonds. The CLO collects interest and principal distributions from the pool of assets – typically 200-400 unique borrowers – and governs the distribution of these collections based on a waterfall clearly outlined within the CLO indenture.

Before issuance, the CLO vehicle is capitalized via the sale of debt tranches and equity. Once issued, a CLO portfolio is actively managed by a CLO manager who selects the initial pool of assets and may trade in and out of the assets over a typical four-to-five-year investment period. After two years, CLO debt tranches are typically callable. CLO managers receive a fee in exchange for their active management of the portfolio.

Coupon and principal payments collected on the underlying assets (loans) are used to make coupon and principal payments on the CLO's liabilities (CLO notes). Payments first flow to the highest debt tranche of the CLO structure and continue to the lowest debt tranche. Thereafter, the residual cash flows are distributed to the equity. This is referred to as the "cash flow waterfall". CLOs are structured to capture the spread, or arbitrage, between income from its underlying assets and payments to its noteholders, which benefits its equity holders.

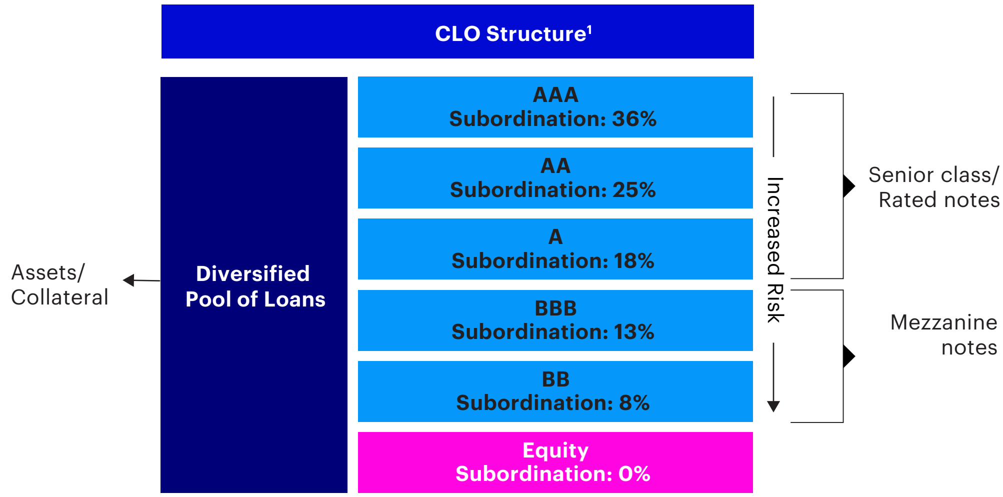
In certain instances, CLO managers retain a 5% interest in the CLO to comply with risk retention requirements. As of 2018, risk retention for the majority of U.S. broadly syndicated loan CLOs ended, however, European CLOs still require risk retention compliance and U.S. fund managers may choose to retain at least 5% to attract European investor interest. The 5% interest may be retained through holding equity or a mixture of debt and equity.



Source: Barclays Research, 22 January 2021. For illustrative purposes only.

2.CLO Structure: How do they work?

A. Structure Overview



Source: Invesco as of December 31, 2023.

1. Wells Fargo Securities as of December 31, 2018. For illustrative purposes only.

B. Sample CLO New Issue Structure

CLO deal structure is comprised of CLO debt tranches and CLO equity tranches. Debt tranches are split by senior tranche (AAA rated) and mezzanine tranches (AA to B rated). Mezzanine tranches include senior mezzanine (AA and A rated) and junior mezzanine (BBB, BB, and B rated). At the bottom of the debt stack is the equity tranche which is not rated and is subordinated to the senior and mezzanine debt tranches. Given the different tranches and economics associated with the structure, investors are able to match their preferred risk tolerance when purchasing CLO liabilities, allowing for many different types of market participants.

Total deal size for a new issue CLO is typically ~$500mm in the U.S. and ~€400mm in Europe where the senior-rated tranche is ~60%-65% of total deal size while equity tranches are typically ~9%-10% of total deal size. Higher rated (i.e. AAA) tranches can withstand greater portfolio losses before any principal loss is taken due to the structure and protections a CLO offers. This is highlighted within the 'Credit Enhancement" below which illustrates the par subordination or how much par value of the portfolio can decline before the respective tranche takes a principal loss. CLO liabilities, or the coupon paid to the respective debt tranches, are typically floating-rate based on 3-month SOFR and pay out quarterly.

Class	Size ($mm)	Rating (S&P)	Credit Enhancement	Weighted Average Life (WAL)	Coupon	Discount Margin (DM)
A	320.0	AAA	36.0%	6.5	SOFR +151bps	151bps
B	60.0	AA	24.0%	8.4	SOFR +185bps	185bps
C	30.0	A	18.0%	9.1	SOFR +225bps	225bps
D	30.0	BBB-	12.0%	9.6	SOFR +355bps	355bps
E	20.0	BB-	8.0%	10.0	SOFR +650bps	650bps
Equity	44.3	NR	NA		Residual	
	$504.3				SOFR +195bps	

Source: Illustrative Invesco CLO New Issue Structure, May 2024. For illustrative purposes only.

Given AAA tranches are most senior in the structure, they have the lowest risk/return profile. As you move down the capital structure, income levels increase to compensate investors for the increased risk.

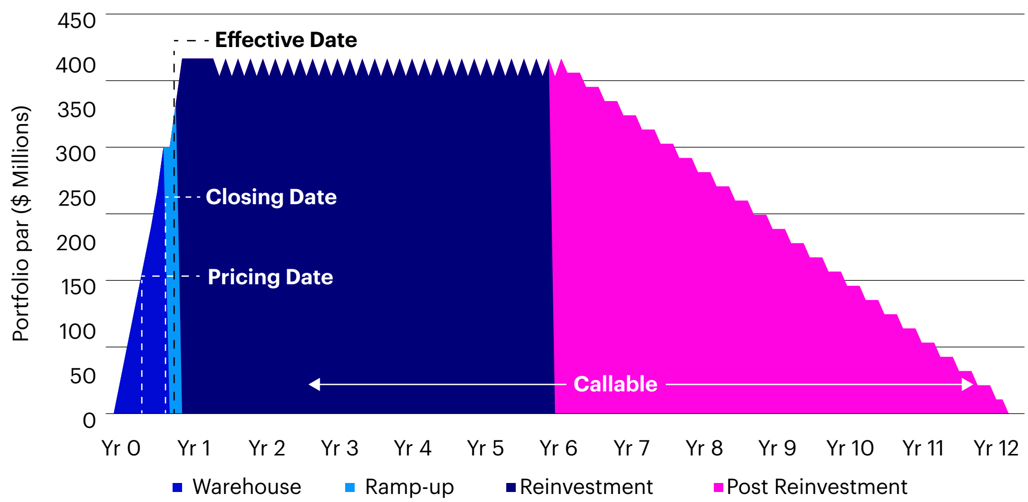
C. CLO Tranche Profiles

Percentage of the Capital Structure	Insurance Co	Asset Mgr	Bank	Hedge Fund	Credit Fund	Pension
AAA [61-69%]	Active Participant	Active Participant	Active Participant	Partial Participant	Not a Significant Participant	Partial Participant
AA [5-12%]	Active Participant	Active Participant	Active Participant	Not a Significant Participant	Not a Significant Participant	Not a Significant Participant
A [5-9%]	Active Participant	Active Participant	Partial Participant	Not a Significant Participant	Active Participant	Not a Significant Participant
BBB [4-5%]	Partial Participant	Partial Participant	Not a Significant Participant	Active Participant	Active Participant	Not a Significant Participant
BB [4-5%]	Not a Significant Participant	Partial Participant	Not a Significant Participant	Active Participant	Active Participant	Partial Participant
Equity [-9%]	Not a Significant Participant	Not a Significant Participant	Not a Significant Participant	Active Participant	Active Participant	Partial Participant

Active Participant Partial Participant Not a Significant Participant

Source: J.P. Morgan Research as of December 31, 2023. For illustrative purposes only

D. Life Cycle of a CLO



Source: Invesco 2024. For illustrative purposes only.

The typical CLO lifecycle includes five stages as illustrated above and detailed below:

- **Warehouse Period:** The arranging bank provides financing to the CLO manager to start buying assets in anticipation of a future CLO pricing. This typically lasts ~3 to 9 months. Afterwards the CLO warehouse is closed, deal priced, and assets entered into a special purpose vehicle ("SPV"). A CLO can typically price with 50% to 70% of its target par balance.
- **Ramp-Up Period:** After the CLO's Closing Date, the Manager purchases the remaining assets needed to reach its target par balance. This typically last ~3 to 6 months.
- **Reinvestment Period:** Once the CLO reaches its Effective Date (target par reached), the CLO Manager is allowed to actively trade the underlying assets. Income from the underlying assets or sales proceeds can be used to purchase new assets. These purchases are subject to the agreed various tests within the CLO's underlying documents. Reinvestment periods typically span ~4 to 5 years.
- **Non-Call Period:** A CLO's non-call period typically ends after two years. At this point, equity holders can direct the CLO Manager to either call, refi or reset the CLO.
- **Amortization Period (Post Reinvestment Period):** Post the Reinvestment Period, income received from the underlying assets as well as any sale proceeds, must be used to pay down ("amortize") the CLO debt tranches. Amortization begins at the highest rated debt tranche. Subject to certain requirements, the CLO may reinvest income and

proceeds. Typically two to three years post the Reinvestment Period ending, the CLO is called due to lower equity distributions and rising debt costs.

E. Examples of Portfolio Tests

CLOs have a variety of tests to ensure assets purchased are in compliance with the underlying documents.

- **Eligibility Criteria:** attributes an asset must have to be purchased and held in the CLO
- **Portfolio Profile Tests:** minimum and maximum concentration test levels governing the diversity and quality of a CLO portfolio
- **Collateral Quality Tests:** minimum and maximum portfolio test levels governing the portfolio's weighted average spread, recovery rating, diversity, rating factor, and life. If a CLO fail's a quality test, it can no longer trade unless such purchase maintains or improves the test. A Manager will often perform a trading plan to work towards compliance.

Eligibility Criteria	Portfolio Profile Tests	Collateral Quality Tests
Not be a defaulted, deferring or equity security	At least 90% of senior secured assets	Minimum WAS
Not be a synthetic or structured finance security	At least 70% of senior secured loans	Minimum Moody's WARR
Be rated at least CCC- or equivalent by each of the rating agencies	Not more than 4% of Mezzanine loans	Minimum S&PWARR
Have a legal maturity prior to the legal maturity of the CLO notes	Not more than 20% of non-eu ro assets	Minimum Moody's Diversity Score
	Not more than 10% of fixed rate assets	Minimum Moody's WARF
		Maximum S&P Breakeven
		Maximum WAL

Source: Invesco July 31, 2024, For illustrative purposes only.

F. Structural Enhancements and Focus on Cash Flow

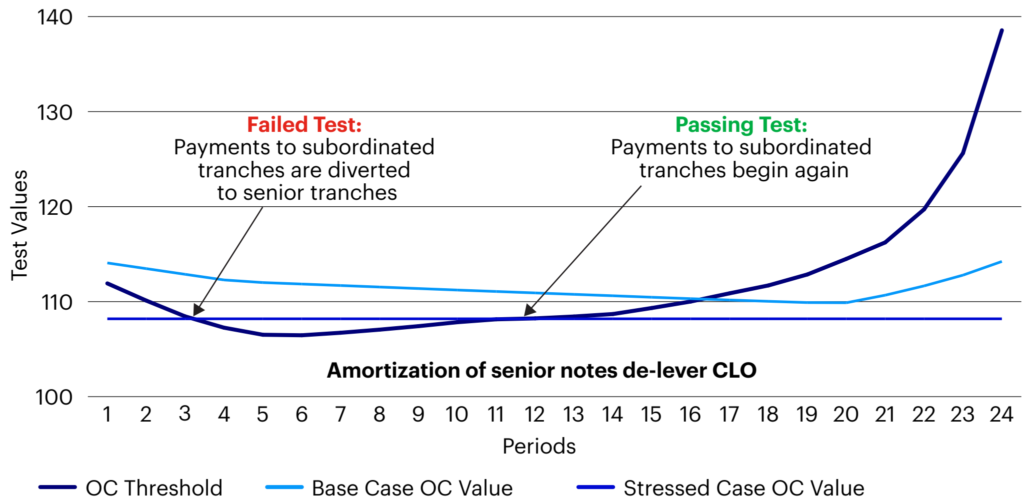
A CLO's debt tranches are typically higher rated than its underlying assets and benefit from par subordination and various structural support mechanisms. In order to obtain a higher rating, CLOs have numerous tests in place to protect investors.

Two key coverage tests to protect senior noteholders include the overcollateralization (OC) and interest coverage (test).

- **Overcollateralization tests (OC tests):** ensures that the principal value of a CLO's underlying bank loan pool exceeds the total principal value of the outstanding notes issued by various CLO tranches
- **Interest Coverage tests (IC tests):** measures the ratio of total interest income generated by the underlying pool of assets to the total interest due on the outstanding debt tranches

Noncompliance of either of these tests result in the cash flow of the CLO being diverted away from the equity and junior debt tranches, and towards the senior debt tranches. This begins the amortization of the senior tranches of the CLO and de-leverages the structure until the CLO is in compliance with the coverage test.

Coverage Tests: CLO's "self-healing" mechanism



Source: Wells Fargo Securities as of December 31, 2018. Figures based on par subordination. For illustrative purposes only.

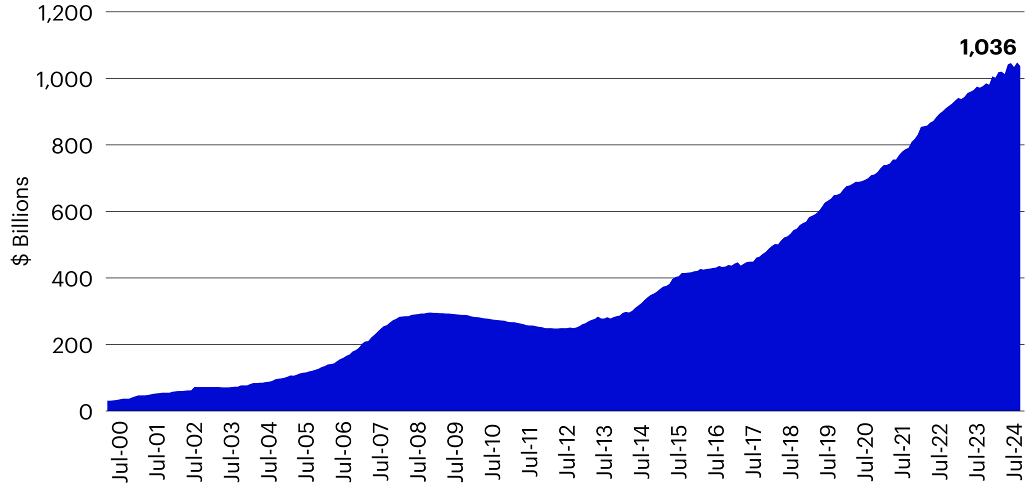
Examples of other tests may include asset diversification test, weighted average spread ("WAS") test, weighted average life ("WAL") test, and maximum weighted average rating factor ("WARF") test. In addition to various tests, there are typically CLO concentration limits to offer additional protection. Examples of various concentration limits may include percent of assets rated CCC+ or below, percent of same industry category, percent of second lien, percent of top three issuers, and percent of non-US issuer/non-US dollar.

CLOs mark assets at par and do not mark to market its underlying assets unless the underlying collateral (pool of loans) exceeds a defined CCC threshold or is a defaulted asset. Assets that have defaulted or that exceed this threshold are marked down to the lower of market value or recovery versus at par. Due to this, CLOs penalize high levels of CCC and defaulted assets.

Structural enhancements serve to limit risk to debt investors, along with the cashflow waterflow principle. Debt investors in the highest rated debt tranche (AAA) receive interest and principal payments first. Payments are further distributed down the debt stack until the lowest rated debt tranche. Residual cash flows are then distributed to the equity.

3. CLO Market: How has it grown?

A. U.S. CLO Market Size and Outstanding Balance



Source: BofA Global Research, Intex through July 31, 2024.

The U.S. CLO market has significantly grown from 2000, climbing to over $1 trillion as of March 2024. The CLO market has outpaced its underlying loan market with average annual growth rates at ~10% since 2012. More recently, growth was ~6% in 2023 and 1% as of early 2024. Both the Global Financial Crisis and COVID-19 market crisis tested the CLO market. The asset class showed resilience as it experienced much lower defaults than similarly rated corporate bonds. CLO AAA-AA tranches have a zero-default history as illustrated below.

U.S. CLO tranche Total Multi-year WR-adjusted cumulative impairment rates by original rating

Original rating	Cohort Size (no.)	5 Years	10 Years
AAA	6,928	0.0%	0.0%
AA	4,075	0.0%	0.0%
A	3,333	0.1%	0.1%
BBB	3,145	0.5%	1.8%
BB	2,793	0.9%	6.3%
B	1,033	1.7%	22.2%
U.S. ABS (IG)	22,235	2.0%	4.6%
U.S. ABS (SG)	515	17.4%	40.4%
Global Loan and Bond (IG)	-	0.54%	-
Global Loan and Bond (SG)	-	12.19%	-

Source: Citi Research, Moody's as of 12/31/2022 (most recent data available). Multi-year WR-adjusted cumulative impairment rates by original rating. Global Loan and Bond excludes commercial real estate CDOs. (IG) Investment Grade (SG) Speculative Grade.

B. U.S. CLO Market Size and Outstanding Balance

The CLO market topped $1 trillion in recent years, and liquidity in the secondary market has grown in tandem. One of the newer trends in secondary is the addition of CLO ETFs as market participants. With the CLO ETF market approaching $15 billion, secondary trading volumes have picked up as these ETFs have grown. While this is a small part of the market, it's only expected to grow as a percentage of the overall CLO Market, specifically in the IG tranches. Given the nature of CLOs, dealers don't quote or make markets in every CUSIP and instead CLO tranches still trade by appointment where a dealer will provide a quoted bid on an ad hoc basis and a quoted offer on inventory they own.

Being an OTC market, there is no exchange that can centrally track each trade. Trades are reported to TRACE (FINRA Trade Reporting and Compliance Engine) in bulk, so general stats about CLO Tranche daily volumes are available. However, unlike the corporates market or other structured products markets, individual executions and prices are not reported to TRACE. Another tool is public Bids Wanted In Competition, also known as a "BWIC", volumes which are sent to clients from dealers each day, but disseminating whether a specific bond actually traded and at what price is completely voluntary on the part of the seller and buyer.

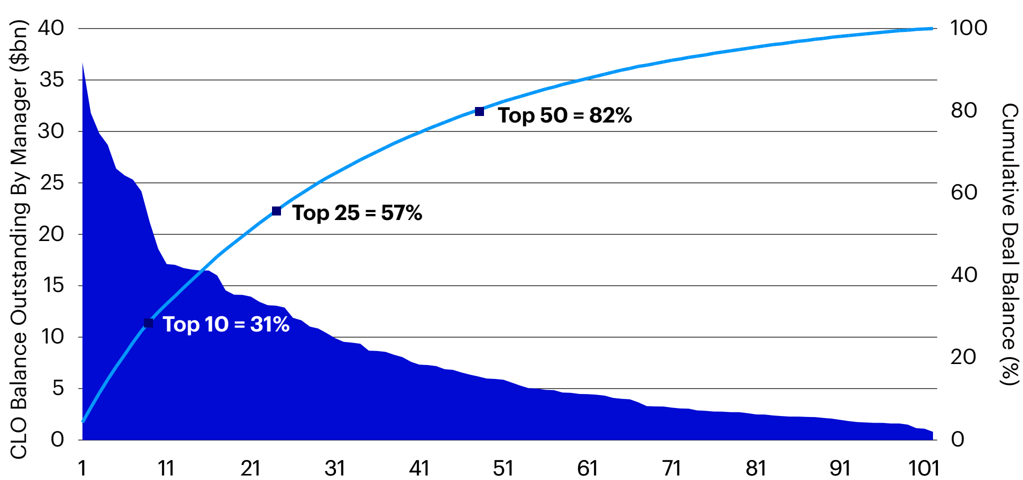
BWICs (Bids Wanted In Competition) are one method for investors to sell multiple CLO securities in a single list format, similar to an auction. The process starts with an institutional investor sending out a list of securities to various dealers asking for bids. The dealers can then bid on the listed securities, either on behalf of clients or for their own inventory. The dealers have until a specific time to submit bids, at which point the highest bidder will win each respective bond. Additionally, the seller typically reserves the right to not trade any or all of the securities if the levels are not what they required or expected.

Originally, there was one major index that many investors referenced in the CLO market – The JP Morgan CLOIE index. However, several new CLO tranche indexes have launched recently, which should provide more transparency into the pricing and performance of the market.

C. Managers

The CLO market is comprised of over 130 Managers and growing. Managers are divided into four tiers generally based on experience, performance, and assets under management ("AUM") or size. Tier 1 and Tier 2 Managers often command tighter spreads when pricing generally due to more tenured experience and track record versus a Tier 3 or Tier 4 Manager who may be a newer issuer with a limited track record of performance. Manager consolidation remains an ongoing theme in the CLO industry.

CLO Managers - Ranked by Size



Source: Invesco and Valitana July 17, 2024.

4. CLO Managers: How Does Style Add Value?

A. How a Collateral Manager Adds Value

Unlike other asset-backed securities (ABS) products where collateral pools are relatively static, CLO collateral pools are actively managed by the collateral manager. A fund's Collateral Manager plays a critical role to the overall performance of a CLO.

Manager skills are an important factor when selecting a CLO to invest in. Key considerations include:

- Collateral selection
- Trading / active management to build par and mitigate losses
- Restructuring – active participant versus passive
- Managing in a CLO context: Understanding constraints/tests of a CLO, the relationships between these tests, and how to navigate the loan market with the most flexibility taking these tests (and their potential future values) into consideration.
- Other firmwide benefits such as relationships with sponsors and arrangers for favored allocations, in house private equity or distressed debt team, etc.

B. Key CLO Metrics

Metric	Description	Strength	Weakness
WAS	**Weighted Average Spread** of the portfolio- does not include rate floors	Straightforward-loan market's perception of risk expressed as average coupon	Does not account for liquidity May not match CLO reported WAS
WARF	**Weighted Average Rating Factor-**measures weighted averaged Moody's rating of the assets Lower WARF= higher average credit rating Higher WARF= lower average credit rating	Commonly used, expresses average rating of portfolio	Assumes ratings are a good proxy for risk May not be calculated the same way across all deals
Div.	**Moody's Diversity Score-** based on how many assets, how many industries and size of position. It is a par weighted calculation that indicates collateral concentration in terms of both issuer and industry concentration.	Commonly used measure of portfolio concentration	Diversity score may not be correlated with credit quality Industry classifications may not be standardized
Norm. Eq. Pmt	Total sum of the **equity payments** made during reinvestment, converted to an average annual payment. Equity distribution is the quarterly equity payment divided by the equity notional value, multiplied by 4.	Looks at average equity payment overtime Adjusts for the fact that the first equity payments often differ in payment period length, and differing first payment periods can produce high or low first payments	Does not account for debt cost or vintage differences Not adjusted for refi/reset, which can affect equity NAV and payments
Lev.	**Leverage** provided by CLO structure. Total initial deal balance/ equity notional balance.	Easy to calculate in Intex Uses equity notional balance, similar to equity paymentdata	Based on structural leverage, not actual asset leverage, which technically would be more accurate

Metric	Description	Strength	Weakness
Min.QC	Difference between **actual Over collateralization ("OC")** level and **OC Test limit** for the tightest OC test in the deal (not including Interest Diversion tests-only true OC tests).	Intuitive and commonly used Lower OC cushion is typically indicative of losses or stressed assets	Does not account for initial structuring or OC calculation differences Only a snapshot; does not show QC gained or lost
Caa/CCC	Intex's fields show% of the portfolio rated **Caa or below**, and the% of the portfolio rated **CCC or below**.	Intuitive and commonly used Quick measure of lower rated assets	May be calculated differently deal to deal. Data reported in Intex may refer to concentration levels, not to Excess Caa or Excess CCC Test levels used for OC test calculation May not include data from deals not rated
2nd Lien	The percent of **2nd lien loans** held by the CLO.	The percent of 2nd lien loans held by the CLO	Not much differentiation May not serve as a standalone proxy for risk
<80	Average number of loans within the CLO's portfolio that have **current market prices below 80**.	Current data on loan market's view of more likely default candidates Commonly used metric for tail risk in CLO portfolios	Does not account for purchase price At times, $80 may not be the right cut-off price
Wtd.Avg. Px	**Weighted average price** of the loans in the portfolio.	Commonly used and easyto understand. Can be used to compare portfolio risk and offset weaknesses in NAV (structural or asset balance difference)	Market value metric Subject to barbelling
Bid Depth	Weighted average of the **number of bids** on the loans in the portfolio.	Proxy for liquidity of underlying loans-which can be used as a proxy for holdings of smaller or "lightly syndicated" loans	Does not account for quality/size of bids in the market
NAV	Equity **Net Asset Value**. The current liquidation value of the portfolio, less outstanding note balance.	Commonly used metric for equity valuation	CLO is not a mark to market vehicle; likely is only an estimate of true liquidation value due to transaction costs and management fees senior to equity. NAV is affected by vintage and how notes/equity are sold at new issue
BB MVOC	**Market Value OC** ratio of the BB notes; Portfolio liquidation value coverage of BB notes	Commonly used metric indicative of market value of credit support	CLO is not a market to market vehicle, does not account for initial structure
% Par Build	**Par Build** calculates enhancement of the CLO's par value of the portfolio through buying assets at a discount	Shows Manager's ability to purchase assets at a discount to increase par value - ability to capture market dislocation	Does not account for quality of assets purchased; may not result in positive performance

Source: Invesco 2024 / Wells Fargo Securities Research, Intex, LPC Collateral, 6 July 2021 .

C. Manager Styles: Debt versus Equity Approach

Debt-Friendly vs. Equity Friendly Approach: A manager's strategy may be more conservative seeking to buy low-spread, high-quality (high-rated) assets, lending to a more **"debt-friendly approach"**. This approach would likely result in a low weighted average spread (WAS) and low weighted average rating factor (WARF) for the portfolio. Other Managers may seek an opposite approach resulting in a portfolio with higher spread assets to generate higher returns, lending to a more **"equity-friendly approach"**. This approach would likely result in a high weighted average spread (WAS) and high weighted average rating factor (WARF). Some may also choose a more middle ground approach, which resembles Invesco's CLO strategy.

Invesco's U.S. CLO strategy seeks a **balanced approach** for all investors focused on three key differentiators:

- **Defensive Positioning:** Higher quality/defensive investments bias helps to minimize tail risk and potential credit loss
- **Liquid, Tradeable Portfolios:** Invesco's investment strategy focuses on the larger end of the broadly syndicated bank loan market to help ensure portfolio liquidity and allows for dynamic management
- **Seeks to capitalize on market dislocations:** This strategy has proven successful especially given aggressive loan underwriting standards and the impact of COVID-19

By utilizing a balanced approach strategy to support both its debt and equity investors, Invesco seeks to broadly be at or near the second quartile for many metrics. Investors can expect a strategy focused on maintaining a high diversity score with a more middle-ground mix for Weighted Average Spread ("WAS") and Weighted Average Rating Factor ("WARF").

A CLO's underlying documents can reflect Manager style preferences as well. For instance, a more equity-friendly document may feature more flexibility to reinvestment proceeds in the post reinvestment period to maximize income and upside in the portfolio. While a debt-friendly document may seek to limit the reinvestment of proceeds in the post reinvestment period to amortize and call the structure more quickly.

While Manager's may have a more standardized template they start with, the terms of each CLO indenture are based on intense negotiations between the Manager and its investors. This makes each CLO indenture unique. Market conditions and Manager tier levels will often dictate how language between vintages shifts.

Debt investors are often more risk adverse and focused on stable interest and principal payments. Generally, this favors a higher quality, diversified portfolio focused on limiting par loss/enhancing par build while reducing risk/exposure to CCC or distressed (<80 price) assets. Debt investors do not benefit from the potential upside in a CLO's portfolio, whereas equity investors do. Potential upside is often driven by better performance in riskier assets. This lends to favoring a riskier rated portfolio to generate higher spreads and returns. Equity investors are therefore compensated with equity like returns to compensate them for this risk-return profile.

Equity investors need to be able to assess a portfolio's return potential and underlying risks to evaluate their potential investment. This starts with assessing the delta between a CLO's debt liabilities (payment due across its debt tranches) and income stream from the spread of the underlying portfolio's assets. This is known as the CLO equity "arbitrage" or the "IO" (interest only) component of the equity return. This illustrates the income stream a CLO equity investor can expect over the life of the issuance. Importantly, these payments can be front-end weighted, a positive contrast to other PE style investment.

In addition to the IO component, equity returns benefit from the PO (principal only) component as well. The PO value can be estimated by calculating the market value of a CLO's portfolio less the par value of the CLO debt. Due to equity investors having a claim on the PO value, a Manager's ability to increase par build is accretive to the equity. Over a CLO's lifecycle, an equity investor may forecast the net present value of the future IO cashflows are less than PO value, the equity investor may seek to call the CLO. CLO equity investors are long the options to call/refinance a deal after the non-call date. Having a majority position in the Equity tranche, or a controlling position, can also add value to the equity investment.

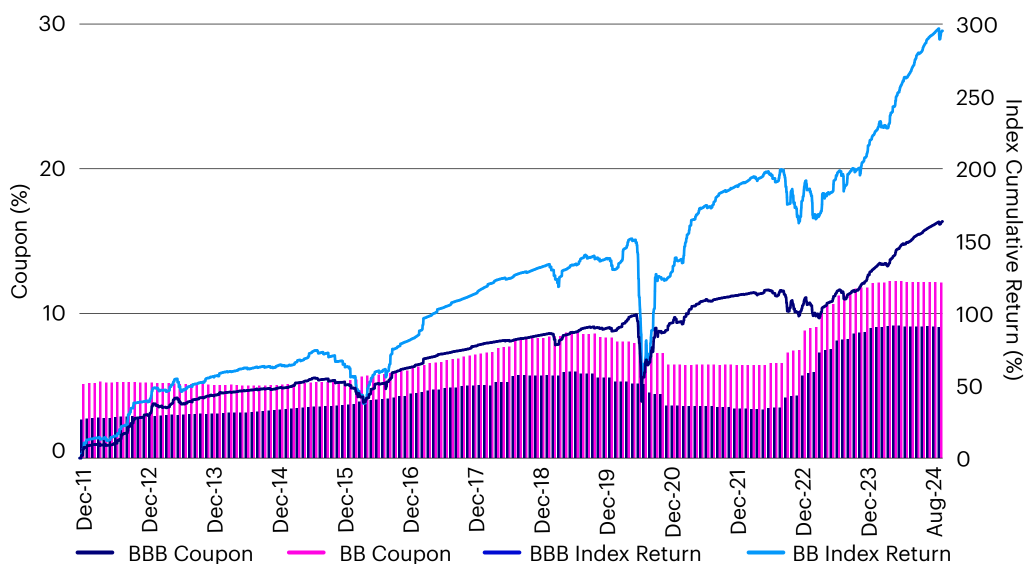
Historical performance of CLOs has shown them to be a proven structure that has historically withstood material levels of economic stress and historically provided strong risk adjusted returns.

J.P. Morgan Collateralized Loan Obligation Index:

Historical Annual Returns (%) – Total Index Returns

	YTD July 2024	**2023**	**2022**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**
AAA	4.26	8.68	1.05	1.40	2.45	4.61	1.66	2.78	3.19	1.33	1.38
AA	5.07	10.86	(0.17)	2.09	2.97	5.95	1.02	3.44	5.41	1.67	1.07
A	5.83	13.35	(1.67)	3.13	4.84	6.72	(0.07)	4.36	6.89	2.45	1.88
BBB	7.55	17.66	(2.77)	4.30	5.47	8.91	(0.66)	8.78	11.18	(0.02)	3.43
BB	12.44	24.52	(3.82)	11.20	8.04	10.84	0.40	16.97	20.29	(4.23)	4.16
B	23.94	26.77	(6.39)	28.43	6.22	4.17	2.93	30.64	23.67	(10.20)	1.06
Total	**5.12**	**10.54**	**0.21**	**2.37**	**3.11**	**5.50**	**1.27**	**4.29**	**5.19**	**1.01**	**1.63**

Total return and coupons of BBB & BB CLO notes



Source: J.P. Morgan CLO Research & Global Index Research as of July 31, 2024. Past performance does not predict future returns. CLOIE is the first index of its kind, dedicated to tracking the US dollar-denominated broadly-syndicated, arbitrage CLO market. The CLOIE monitor will be published at the end of each month and provide information detailing vintage breakdowns, market statistics, and performance. An investment cannot be made in an Index.

5. Regulatory Overview: How Have Regulations Evolved?

As a result of challenges within the securitized investments industry during the financial crisis, regulators in the U.S. and Europe created risk retention rules seeking to align the interest of CLO Managers/underwriters and their investors. These regulations have evolved over time and continue to be monitored. Key events include:

- **2010:** U.S. new issue primary market reopened post financial crisis, and issuance exceeded $4bn. New deals labelled "2.0". CLOs issued pre-Great Financial Crisis broadly labelled "1.0"s. In Europe, CLO Managers must retain a 5% interest (risk retention requirement) in their CLOs to align Manager/underwriter and investor interest.
- **2012:** U.S. primary activity exceeds $55bn.
- **March & April 2013:** Due to significant growth in U.S. CLO market, Leveraged Lending Guidance released to address concerns around underwriting and controls. CLOs after 4/1/2013 are classified as higher risk and become a part of FDIC assessment calculations.
- **December 2013:** Finalized Volcker Rule released – U.S. CLO regulation. This limited banks' ability to have ownership interests in U.S. CLOs that comprised bond buckets. Prior to the Great Financial Crisis, CLO portfolios often held bonds. Labelling of CLOs as "3.0" begins to differentiate vintages as new issue CLOs during this period limited investments to loan only to be exempt from Volcker rule. This labeling later reverted back to 2.0 as the majority of deals amended underlying document language to comply.
- **2014:** In October 2014, final U.S. risk retention rules are released. U.S. Managers must retain 5% interest to have "skin in the game" in all CLOs issued after December 2016.
- **2016:** In December, risk retention rules go live in U.S.
- **2018:** In April 2018, open-market CLO U.S. Managers no longer subject to risk retention rules. Balance sheet and middle market U.S. CLOs still required to retain 5% interest given these deals tend to comprise self-originated assets. European CLO Managers risk retention requirements still apply. U.S. Managers may still have CLOs comply with risk retention requirements to garner European investor interest.
- **2020:** Changes made to Volcker rule to i) allow U.S. CLOs to own up to 5% of bonds/debt securities without being a covered fund and ii) CLO debt tranches may not be considered as having an ownership interest due to their right in certain instances to remove a CLO Manager. These changes have allowed banks to invest in CLOs, with exposure to high-yield bonds, which has resulted in CLOs having small bond buckets.

Source: Invesco 2024 / Wells Fargo Research 6 July 2021 /Bank of America Research, 9 August 2018.

About risk

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations) and investors may not get back the full amount invested.

Many senior loans are illiquid, meaning that the investors may not be able to sell them quickly at a fair price and/or that the redemptions may be delayed due to illiquidity of the senior loans. The market for illiquid securities is more volatile than the market for liquid securities. The market for senior loans could be disrupted in the event of an economic downturn or a substantial increase or decrease in interest rates. Senior loans, like most other debt obligations, are subject to the risk of default.

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