

CLOs: Frequently Asked Questions

December 2012



How do CLOs work?

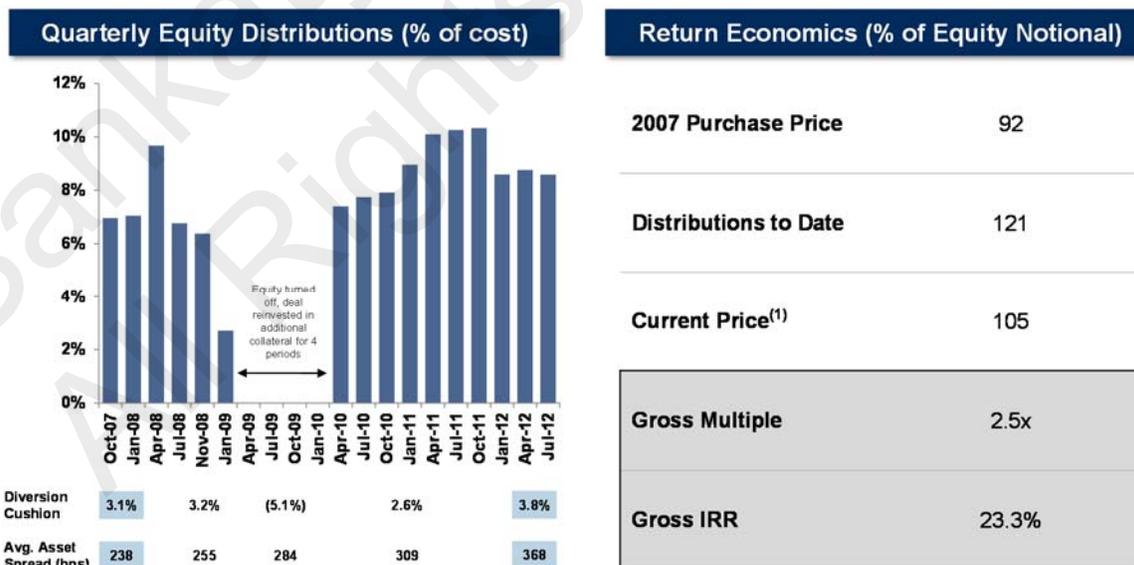
Collateralized Loan Obligations (CLOs) invest in a pool of broadly syndicated senior secured loans, covering a wide range of issuers and industries. The portfolio of loans is selected and managed by a collateral manager, who can actively buy and sell loans based on their attractiveness. CLOs finance this pool of loans with a capital structure that consists of debt and equity. CLO returns are driven by the difference between the cost of debt and the yield generated by the pool of loans, net of any gains or losses on the portfolio. We believe CLOs are attractive today because loan spreads are wide relative to CLO debt costs. Also, loan defaults are low and are projected to stay low. This creates an attractive environment for CLOs.

How did cash flow CLOs perform through the 2008/2009 crisis?

A key strength of the CLO structure is that the debt is committed for the life of the transaction. Debt covenants are cash flow, not market value, based; and therefore, the price of the underlying loans does not impact the covenants of the CLO debt. Instead, the covenants are based on whether the assets are currently paying their income. If more than the threshold amount is not paying, then money that would have been paid to the equity stays in the deal, providing additional collateral enhancement to the debt holders. This structure means that in almost all situations, holders cannot force a CLO to sell assets. We do not know of a single cash flow CLO where debt holders were impaired during 2008/2009.

Here is an example of how this worked in practice from 2008 to 2009. While cash flows to the CLO's equity were shut off for four periods, these cash flows were used to purchase additional collateral. Because this additional collateral was in the form of leveraged loans trading at a discount, the CLO was ultimately supported by more assets than it was at origination at a lower average cost. Today, the CLO benefits from more than 50% more income, while liability costs have stayed unchanged. This increased funding gap translates to higher flows to the equity.

Figure 1:



It is important not to confuse cash flow CLOs with structures employing mark-to-market leverage or with ABS CDOs. Cash flow CLOs use the par amount of the underlying portfolio when calculating collateralization ratios. In contrast, the covenants of mark-to-market structures require the marking-to-market of assets and are subsequently very sensitive to price volatility in the loan market. If the collateral value falls below a certain limit for a market value CLO, the manager is forced to sell assets and to pay off liabilities until the structure is no longer breaching its triggers. These sales often occur at the worst time and most of these structures did not survive the 2008/2009 period.

ABS CDOs show that the fundamental collateral underlying the CLO is as important as the structure. Unlike CLOs, mortgage CDOs did not hold securities that were first dollar of risk. Rather, these securities are actually binary. Because the collateral of these ABS CDOs were mortgages that sustained extremely high default rates and such low recoveries during 2008/2009, none of them are still performing today.

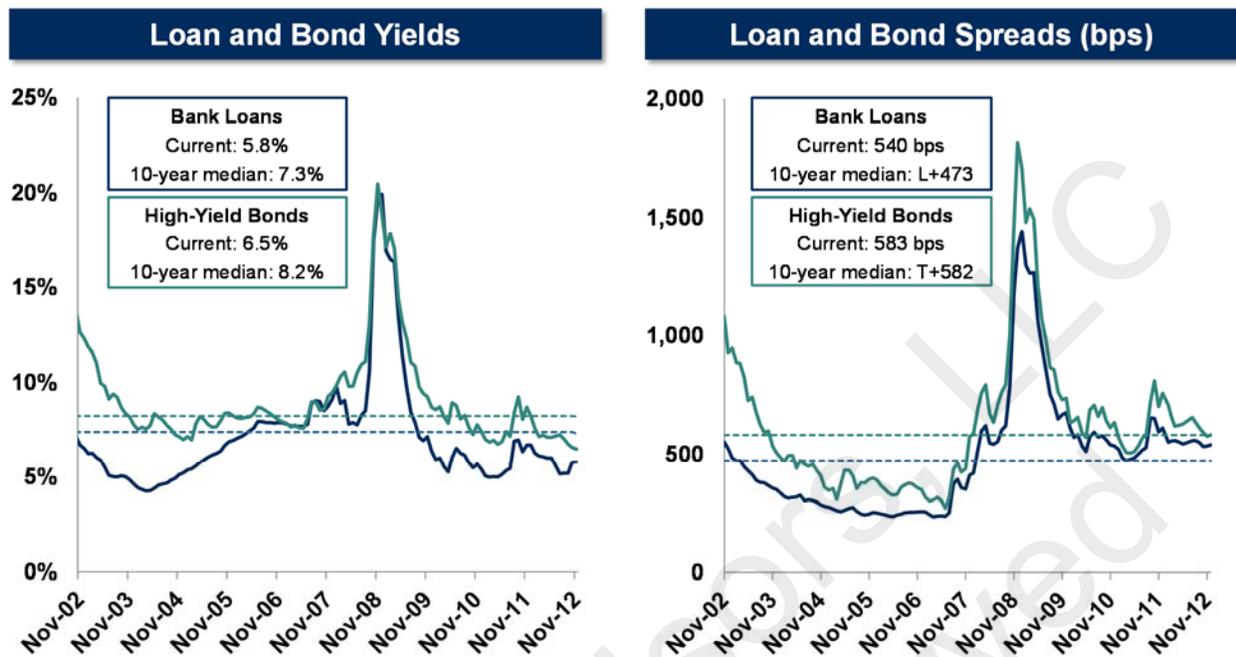
Figure 2:

	ABS CDOs (Mortgages)	CLOs (Structured Credit)
2007 Issuance	\$198 billion	\$103 billion
Defaulted & Liquidated	(\$113 billion) 57%	\$0 0%
Defaulted & Accelerated	(\$85 billion) 43%	\$0 0%
Still Performing	0%	100%

How will the technicals in the leveraged loan market impact CLOs over the next few years? How about defaults?

CLO issuance will only occur when the spread between the assets and liabilities generates an attractive return to equity holders. If too much demand for loans leads to extremely tight spreads or if CLO liabilities are too expensive, the return on the equity will not be attractive, and CLOs will not be created. Despite a significant uptick in CLO issuance year-to-date, issuance is still dramatically lower than in 2006 and 2007, when issuance reached levels of \$100 billion per annum. Also, the new CLO issuance year-to-date is not sufficient to replace the buying power of 2006/2007 CLOs that are coming to the end of their reinvestment periods. While retail buyers have become increasingly active in the loan market in recent years, loan issuance remains strong as well. Absolute yields might be low, but spreads on loans remain wider than the historical average.

Figure 3:



Note: Data as of November 30, 2012. Source: Credit Suisse and LSTA. Loan yield and spreads assume 4-year refinance.

Defaults and recoveries have the most influence on a CLO's overall performance. While it is impossible to know what the market is going to look like three years out, in our opinion, the following factors indicate that loan defaults are likely to remain low:

- Corporate balance sheets are strong with high cash balances;
- Leverage on new loan issuance has remained modest compared to 2007;
- Solid credits remain after the cycle weeded out weaker companies;
- A number of companies have successfully addressed their maturities;
- Rates look like they will stay low for some time, which bodes well for levered issuers.

How easy it to call a CLO?

CLO equity holders control the right to redeem the notes after a non-call period. CLOs issued since 2010 have non-call periods of one to three years, which is significantly shorter than that of the 2003-2007 vintage CLOs, which typically had non-call periods of three to five years. In most cases, the call requires the vote of a majority or two-thirds of equity holders. Equity holders will often choose to exercise this call option if either the go-forward expected return no longer offers enough compensation for the default risk or if market levels make refinancing the debt at lower cost possible. As long as the equity holders can prove to the CLO's trustee they have enough collateral to pay off all the liabilities and expenses, it is relatively easy to call the deal. The process typically occurs over a three month payment period.

Some challenges do exist, however. Even if a call makes sense economically, the manager's incentive is to leave the deal outstanding, allowing the manager to continue to earn management fees. Also, because CLOs often have such a dispersed group of equity holders, it can be a challenge to contact and aggregate a majority stake to call the deal.

How do interest rates affect CLOs?

Generally speaking, the loans in a CLO portfolio earn a LIBOR based coupon, and the debt issued by a CLO pays interest rates that are based on LIBOR. Because asset yields and debt costs both increase with higher rates and decrease with lower rates, the CLO structure is naturally hedged from changes in interest rates. Today, most new issue loans have a LIBOR floor, which establishes a floor on the LIBOR setting of the loan at 1.0-1.5%. As a result, if LIBOR increases from its current rate (0.3%), the CLO's debt costs will increase, but the asset yields will not increase until LIBOR rises above the floor level. Alternatively, if rates stay low for an extended period of time and LIBOR rises at a slower rate than projected, CLO equity will benefit because the assets will continue to yield more as the benefit of the LIBOR floor remains in place.

How easy is it to refinance a deal?

Generally speaking, it is easier to refinance a deal than to issue a new CLO because other than agreeing to a price and spread, terms of the deal are not open for negotiation. Also, in post-crisis CLOs, refinancing can be done on a tranche-by-tranche basis, rather than "all or none." Some recent deals have included language that would allow CLO debt to be "repriced" via an amendment, which would simplify this process further. In all, refinancing a deal is relatively easy, and we expect to see more post-crisis deals get refinanced as their non-call periods expire in the coming years.

Please explain ramp-up processes, including those that start with a warehouse line when the CLO's debt is issued. How long does it take for the deal to be fully funded, and how should investors think about market price moves along the way? Should an investor worry about warehouse risk?

The entire ramp up period can take anywhere from zero to nine months. During this period, the goal is to minimize the disconnect that can occur between assets and liabilities due to changes in the market (i.e., widening spreads). A warehouse facility has typically been offered by underwriters to CLO issuers to help them finance the ramping stage, but an issuer does not have to use one as we discuss later. A warehouse essentially serves as a credit line to help the manager purchase the CLO's collateral before issuing the notes. Underwriters require an equity investment that may come from the equity investors in the CLO or the manager. Once the CLO closes, the manager uses the proceeds from the sales of the notes to repay the underwriter for providing the warehouse. If assets are purchased into a warehouse and then trade down before the CLO locks in its debt, the equity in the warehouse risks principal loss.

How have CLOs changed post 2008?

We believe the key differences between today's CLOs and pre-Credit Crisis transactions are:

- **Credit support:** CLOs issued from 2004-2007 typically were 12x levered. In other words, the average CLO AAA tranche from 2004-2007 was issued with 25-30% credit support and equity was the lowest 8%. AAA tranches from today's CLOs have credit support of 30-35%, and equity is typically the lowest 10%, which translates to 10x leverage.
- **More refinancing flexibility:** As mentioned above, new issue deals today allow for refinancing by individual tranche and may also have the flexibility to re-price debt coupons via an amendment.
- **Shorter reinvestment periods than in pre-2008 deals.** Pre-crisis deals typically would have 6-7 year reinvestment periods, while CLOs today typically have 3-4 year reinvestment periods.
- **Stricter provisions on collateral:** Pre-crisis deals typically would allow up to 15-20% of the pool to be invested in unsecured bonds or second lien loans. For post-crisis deals, this has been limited to 5-10%.

What could lead to a negative IRR?

A negative IRR would result from high defaults sustained over several years and low recoveries. As discussed earlier, a CLO can go through a limited period of high defaults, like 2008, and survive because the structure can cut off equity payments and buy assets (priced lower due to risk repricing) until the CLO comes back into compliance with the coverage tests. Losses that occur after a CLO comes to the end of its reinvestment period are more challenging for managers. Also, it is important to keep in mind that today's structures are less levered and have higher quality collateral than their pre-credit crisis predecessors.

What is involved in the active management of a CLO?

A manager's primary goal is to deliver the best returns possible for the CLO investors, while minimizing risk of loss. Managers play different roles throughout the life of the CLO:

- **Marketing and ramp-up period:** During this time, a manager adds value through credit selection and portfolio construction. A large trading desk and staff of research professionals gives a significant advantage during this period.
- **Reinvestment period:** During this period, which typically lasts three to four years, the manager has the ability to reinvest principal proceeds from asset sales, scheduled redemptions, and prepayments. The manager must do this in compliance with investment guidelines and coverage tests. During and after the reinvestment period, the manager can trade out of a security deemed to be a credit risk due to a price change or default. If a security has appreciated, the manager can sell it to lock in profits. Discretionary trades are typically limited to 20-25% per annum; and if a manager makes a trade, he is not permitted to cause or worsen any test failures governing the CLO (i.e., minimum diversity, asset spread, and asset rating tests). Active trading helps mitigate losses for senior investors.

- **Post-reinvestment:** Following the reinvestment period, the rules around management of the CLO can vary significantly between deals. In some cases, under certain conditions, a manager may be allowed to continue to reinvest some principal proceeds; however, under tight restrictions. This ability to reinvest can provide substantial value to the equity of the deal as it keeps the deal leveraged and extends the amount of the time the deal captures the difference between asset yield and debt cost.

What should a CLO investor look for in a manager?

While difficult to assess, manager selection is one of the most important considerations for CLO investors. We believe that our dual role as an issuer of CLOs and investor in them gives us an advantage in this capacity. Different managers have different approaches and styles; however, we believe any good manager should have:

- **Fundamental credit expertise:** The manager should ideally have a long track record managing loans; and the staff and credit discipline required to do so well. Restructuring expertise is also a plus.
- **Structural expertise:** Two CLOs with identical collateral and different structures can have dramatic differences in performance.
- **Business continuity:** The CLO manager is part of a large platform that does not rely on CLO issuance for the firm's survival because periods exist when it is not attractive to issue CLOs.
- **Experience:** Having been through a difficult market in 2008-2009, it is important to see how managers performed through this type of environment.

For investors in CLO funds, a demonstrated ability to source investments is also key. One must have a network of trading counterparties and CLO managers to see the best deal flow.

How are CLO managers compensated?

Manager compensation typically consists of three components:

- Senior management fee of 10-20bps.
- Subordinated management fee: These are paid after the junior debt tranche interest and typically total 30-40bps. Typically senior and subordinated fees total 50bps.
- Incentive fee: Managers often receive an incentive fee of approximately 20% on any profits after the equity has fully realized a hard hurdle (typically 12% but varies depending on the terms of the CLO).
- Managers often keep some of the equity to show that they are aligned with their investors.

Is Intex sufficient to analyze a CLO?

Intex is a powerful tool that projects cash flow waterfalls and provides updated deal information and some historical information. However, it is important to note its shortcomings: Intex is not always perfect and can be incorrect. It is also limited to the information provided by the trustee, which does not include the value of equity securities owned by the CLO (i.e., if a loan is restructured). We use Intex, but we also combine it with our own proprietary models. In our experience, nothing can replace the deep due diligence of full document review, full credit underwriting and a strong understanding of CLO structures.

How does one mark equity positions? What benchmark is an appropriate metric for CLO performance?

Market prices for individual CLO equity positions are derived by projecting cash flows and discounting them back. There is not a widely used benchmark for CLO debt or equity.

Please explain the main coverage tests.

The key coverage tests for a CLO are Overcollateralization (OC), Interest Coverage (IC) and Interest Diversion. The OC tests measure the par of a CLO's assets relative to the par of the CLO's debt. The IC tests measure how much interest the CLO collects relative to the interest cost of the CLO's debt. The Interest Diversion test is an "early warning" OC test, where if failed, a portion of interest proceeds that would have been paid to the equity get reinvested in the CLO and are used to buy additional assets. If an OC or IC test is failed, the interest proceeds instead are used to repay the CLO's debt. At issuance, the tightest coverage tests typically have 3-4% cushion from their required threshold.

What kind of pricing volatility should one expect?

CLO debt and equity markets can experience periods of illiquidity and price volatility. For this reason, we think a fund targeting CLO equity should have a lock-up period. In 2008-2009, prices for CLO debt and equity in some cases dropped below 10-20% of par, before recovering to today's levels. In our experience, we don't believe much CLO debt or equity actually traded at these extremely low levels, but those were the reported market prices. While we do not expect to see the same price swings of 2008-2009, we do believe volatility presents opportunity to buy attractive assets at discount prices.

What are your expectations for CLO issuance in years to come?

In 2012, CLO issuance is on pace to surpass \$50 billion, well above original projections of \$25-30 billion. In the coming years, 2006-2007 vintage CLOs are ending their reinvestment periods and losing the ability to reinvest. We estimate this loss of buying power at \$50 billion per year. As loan issuance remains strong, and in order to replace the decreasing buying power of existing CLOs, we project CLO issuance to be \$50-75 billion in the coming years.

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