# U.S. CLO Ratings Methodology

**Morningstar Credit Ratings, LLC**

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**Contents**



## Introduction

Morningstar Credit Ratings, LLC will apply the U.S. CLO ratings methodology to the new issue and surveillance of collateralized loan obligations (CLO) backed by cash flows of broadly syndicated and middle-market loans. Morningstar will also apply this methodology to rate derivative structures that are backed by the CLO tranches such as combination notes or risk-retention notes and for rating revolving facilities of broadly syndicated and middle-market loans that are not as standardized as CLOs. In the case of derivatives, Morningstar may modify its stresses to address risks or features specific to those transactions. Where applicable, Morningstar will consistently apply the methodology at both issuance and when surveilling these notes; however, as a transaction seasons, actual performance data will influence the assumptions we use in determining whether to affirm or change a rating.

A Morningstar rating assigned based on this methodology is designed to provide market participants with a benchmark that can be used to gauge the relative default risk of a CLO note against that of other Morningstar-rated debt securities. The definitions of Morningstar's letter-grade ratings, a surveillance general description, changes to Morningstar methodology, and access to rating opinions are set forth at www.morningstarcreditratings.com. In addition, our "U.S. Asset-Backed Securitization General Ratings Methodology" describes factors we consider in the ratings of CLOs that are not included in this document.

## Section 1 – Overview

CLOs are generally backed by a pool of floating-rate, senior-secured, leveraged loans. The liabilities are also largely floating rate, and it is common to see nondeferrable floating-rate senior tranches with AA or higher ratings, and deferrable floating-rate mezzanine and junior tranches with A or lower ratings. There is typically an unrated subordinated equity piece at the bottom of the capital structure. It is common to have separate priority of payments for interest and principal proceeds. The payments to the notes may be pro rata or sequential, and there are interest-coverage and overcollateralization triggers that divert the proceeds for reinvestment or towards payment of the senior notes until the triggers are back in compliance.

The manager usually receives a base management fee that is paid on top of the waterfall, after other fees and expenses, but before interest and principal payments. The manager also receives a subordinated fee after interest and principal payments to the notes but before any payments to the subordinated notes. If the transaction performs better than certain benchmarks, the manager also receives an incentive fee after payments to the subordinated notes.

In most cases, the collateral pool backing these deals is revolving; there is usually a six-month ramp-up period and a four- to five-year reinvestment period, during which the manager may purchase and sell assets subject to eligibility criteria and various covenants. The eligibility criteria and concentration limits provide parameters for the acquisitions of the underlying loans. These criteria usually state that the loans cannot be in default at the time of purchase, and they describe the parameters of loans that the CLO issuer may purchase. Common permitted assets include first-lien; second-lien; first-lien, last-out; debtor-in-possession; and unsecured corporate loans. Usually at least 80% of the loans are made to U.S. and Canadian companies and 100% of the loans are U.S. dollar-denominated, and participations and covenant-lite loans are limited to certain percentages. The eligibility criteria may require a minimum rating on each underlying loan and/or a maximum weighted average rating factor, or WARF, for the overall pool. The reinvestment period is followed by an amortization period during which trading is more restricted and is further constrained by the weighted average life covenant.

To address the revolving nature of the collateral pool, we largely base our rating analysis on covenants and terms specific to each CLO. Reinvestments are often subject to certain covenants, typically called collateral quality tests, which may include, but are not limited to, a maximum weighted average life, minimum weighted average spread, maximum WARF, and minimum diversity score.

Rating factor is a relative default risk measure dependent on the rating of an asset, expressed as a single number. WARF is the weighted average of the rating factors of all the individual assets in the collateral pool. Diversity score is a relative measure for granularity of the pool with respect to individual obligors and industries, expressed as a number. The mechanics of how to calculate the diversity score are usually described in each CLO indenture and have not changed significantly in recent years. For our rating analysis, we also use these commonly used variables that have become industry standards, but may use other metrics to assess the concentration, correlation, or default risk of the pool of underlying loans.

## Section 2 – Key Rating Considerations

Morningstar considers several key quantitative metrics that address the collateral characteristics and transaction structure when rating CLOs. For the assets, critical considerations may include credit quality, diversity, lien seniority, expected recovery, yield, and duration. For the liabilities, we may review triggers, the length and possible extensions of the revolving period, the cost of the capital structure, and the constraints on amendments to the structure and transaction documents when applicable, and apply additional stresses accordingly, if needed. Morningstar typically evaluates the manager's historical performance, operations, and experience in managing leveraged loan portfolios.

### Credit Quality

One of the most important factors in analyzing the credit quality of the pool is the WARF. Morningstar's base-case portfolio generally assumes that the collateral quality, deal covenants, and constraints around variables such as the WARF, weighted average spread, weighted average life, loan eligibility criteria, loan ratings, loan types, industry and obligor concentrations, and obligor domicile are close to what is commonly observed in CLOs. We account for the portfolio characteristics that deviate from our base-case expectations through quantitative or qualitative adjustments. These are detailed in the Cash Flow Analysis section.

In most CLOs, the eligibility requirements limit the manager from investing in collateral that exceeds the legal maturity of the structure. If a CLO allows for collateral that matures after the legal maturity of the rated notes, Morningstar may apply a market-value haircut to such assets, or assume them to be defaulted at maturity and apply recovery to those assets similar to the ones shown in Table 1.

### Diversity

The diversity of the underlying portfolio is a key consideration in determining the applicability of this methodology. Morningstar's base-case assumption for a highly diversified portfolio is a diversity score of 80. For higher or lower portfolio diversity, we may apply a Diversity Adjustment and other adjustments, as explained in detail in the Cash Flow Analysis section. Morningstar's analysis of diversity scores showed that for a majority of CLO transactions, the diversity score has generally fluctuated between 50 and 80. In general, a diverse pool can be expected to have a diversity score of 20 or more. For lower diversity, Morningstar may apply additional stresses to the approach described herein.

Morningstar may consider the diversity measure as calculated according to the deal's documents or may use other metrics to assess the correlation and concentration of the pool of underlying loans. We typically review a transaction's concentration limits, such as limits for a single industry or a single obligor, and may run stresses to account for these concentrations where appropriate.

### Recovery

Morningstar's recovery assumptions could vary based on several factors, including loan type, the target rating level for the CLO tranche, concentration limits based on loan type, loan leverage levels, and manager-specific historical recoveries on similar assets. Morningstar considered publicly available data as a starting point for its recovery assumptions. For example, according to the Loan Syndications and Trading Association, between 1989 and 2009, recoveries averaged 81% on defaulted large cap loans and 86% for middle-market loans. For higher rating scenarios, we assume lower recoveries in our modeling. For a diverse portfolio of liquid, broadly syndicated, seven-year loans, the following table is an example of initial benchmarks that are subject to adjustments:

**Table 1 – Sample Base-Case Recovery Assumptions**

| Target Note Rating | First-Lien Recovery (%) | Second-Lien Recovery (%) |
|---|---|---|
| AAA | 50 | 37 |
| AA | 54 | 42 |
| A | 58 | 47 |
| BBB | 62 | 52 |
| BB | 66 | 56 |
| B | 70 | 60 |

While the assumptions in Table 1 may be a starting point, Morningstar may adjust recovery assumptions. For example, as a conservative assumption, unitranche loans, where the lenders still have the first lien, may be treated as second-lien loans to calculate the weighted average recovery of the pool when they are more leveraged than typical first-lien loans. The recovery-rate benchmarks may change significantly if there are large concentrations in several sectors that Morningstar believes may create a greater variance or lower expectation of recoveries. Morningstar's recovery assumption is independent of the current rating of the loan; our assumption is that a jump-to-default of a loan would lead to a recovery dependent on the rated notes' target rating stress scenario, rather than the current rating of the loan itself. We, however, typically assume that the initial portfolio has only performing loans, and no nonperforming or defaulted loans. Default and recovery assumptions are determined on a deal-by-deal basis. We usually assume recoveries are realized 18 months after default, but the recovery lag could vary based on deal-specific reasons or rating-specific stress.

### Yield

The yield of the portfolio, which determines how much excess spread is available to the deal, is a key collateral characteristic. Junior tranches, by having longer weighted average lives, and principal-only derivatives, such as combination notes, are usually more sensitive to yield movements. As the assets and the liabilities are usually floating rate, we may also use our rating-specific stressed interest-rate curves to account for any volatility in the interest-rate movement.

### Manager Review

Morningstar analyzes the analytical and operational capabilities, historical performance, and strategy of the manager. Morningstar may consider the manager's financial condition, business model, management personnel experience, investment-advisor status, origination experience, servicing capabilities, technology infrastructure, internal controls, risk-retention strategies, and marketing and collection practices. Manager analysis is more important for deals backed by middle-market loans, where the manager or affiliated entities are typically heavily involved in loan origination and loan workouts.

Morningstar compares the manager's capabilities with generally expected performance. We account for deviations with a Manager Adjustment, as explained in the Cash Flow Analysis section.

Some managers outsource some or all middle and back-office functions to third-party service providers. In those scenarios, Morningstar may analyze the backup servicing or other relevant service agreements and may review the capabilities of the service provider.

Many transaction documents contemplate entering hedge agreements or acquiring some or all the loans from warehouses through participations with assignments after closing. In these cases, we would review the requirements for possible counterparties and may apply additional stresses where the constraints are insufficient.

## Section 3 – Cash Flow Analysis

Morningstar's analysis hinges on the ability of any rated note to sustain a rating-specific target conditional default rate, called the Adjusted Target Break-Even CDR. Morningstar starts with the Base-Case Target CDR, specific to a given rating level, that the notes need to sustain to achieve that rating; this assumes a diversified pool with a weighted average credit rating of B. Morningstar adjusts this CDR based on the actual pool characteristics such as the WARF, diversity, and the manager's past performance and relative operational ability to account for higher or lower risk compared with the base-case portfolio. We multiply the WARF Adjustment, Diversity Adjustment and the Manager Adjustment with the Base-Case Target CDR to get the Adjusted Target Break-Even CDR for the required rating.

**Adjusted Target Break-Even CDR = Base-Case Target CDR * WARF Adjustment * Diversity Adjustment * Manager Adjustment**

Morningstar may use the Intex CDI and CDU files, often provided by the arranger, to analyze the transaction's performance under various rating stress scenarios. The Intex files are expected to replicate, as close as possible, the priority of payments of the transaction for fees, expenses, interest and principal payments, hedge and reserve payments, and reinvestments, while accounting for all the triggers.

Upon analyzing the transaction, if the notes' break-even CDR is found to be higher than the Adjusted Target Break-Even CDR calculated above, the notes pass that rating stress. We determine the final rating, however, based on deal-specific quantitative and qualitative analysis, including regulatory and legal analysis.

It is also important to note that Morningstar may further adjust the Base-Case Target CDR or recovery assumptions for atypical pool characteristics, such as higher than usually observed leverage on the loans, higher industry concentrations, loans with deferrable interest, highly discounted loans, and so on.

### Base-Case Target CDR

Morningstar's Base-Case Target CDR takes into account the historical leveraged loan performance across various sectors and industries. Morningstar considered publicly available default data for leveraged loans, high-yield, and speculative-grade debt for such purposes. Chart 1 shows an example of one such data source. This performance data, based on a vast and diversified portfolio of assets, helps outline the expected defaults that Morningstar anticipates under each rating scenario; as for most assets, the default experience during the benign credit environment is a starting point for B rating stress, and the peak observed default experience is assumed to correspond to A rating stress. For other rating grades and notches Morningstar may interpolate or extrapolate from the B and A target CDR levels.

**Chart 1: Historical Default Rates for Various Debt Instruments**


Source: LCD, Moody's, Wells Fargo Securities, LLC

Table 2 shows typical Base-Case Target CDR ranges for the respective rating levels.

**Table 2 – Typical Rating-Specific Base-Case Target CDR Ranges**

| Target Rating Scenario | Base-Case Target CDR Range (%) |
|---|---|
| AAA | 16.0+ |
| AA | 12.0 – 17.0 |
| A | 8.0 – 13.0 |
| BBB | 5.0 – 9.0 |
| BB | 3.0 – 6.0 |
| B | 1.5 – 3.5 |

### WARF Adjustment

A WARF Adjustment to the Base-Case Target CDR penalizes for a WARF higher than the base-case assumption of 2720, which reflects a weaker weighted average credit strength compared with a B rated portfolio, and conversely, credits for a WARF lower than the base-case assumption, which reflects a stronger weighted average credit strength compared with a B rated portfolio. For ratings on the underlying loans, we may use Morningstar's analysis, other NRSRO ratings, or other models or resources to inform our understanding of the underlying collateral. Additionally, for unrated loans with insufficient financial information, Morningstar may assume a B- or lower rating, to apply additional stress on the notes and for purposes of WARF calculation.

**WARF Adjustment** = (Portfolio WARF)/2720

While an average rating factor captures the collateral quality for a relatively homogenous pool, it does not capture the dispersion of the collateral credit quality.  For example, consider two pools of 100 equally sized loans with five-year maturities. The first pool has 75 BBB rated loans and 25 B loans, resulting in a WARF of 0.75 * 360 + 0.25 * 2720 = 950. The second pool has 100 equally sized BB rated loans and has a

WARF of 1350. While the first pool has a lower WARF, it may exhibit higher volatility and potentially higher losses under an investment-grade stress scenario. Morningstar may run additional stresses or make further adjustments to the Base-Case Target CDR for transactions with atypical concentrations of collateral rated or similar to CCC. For WARF calculations, Morningstar may assign a rating that is one or more notches lower to loans that are under review for a possible downgrade or where the direction is uncertain.

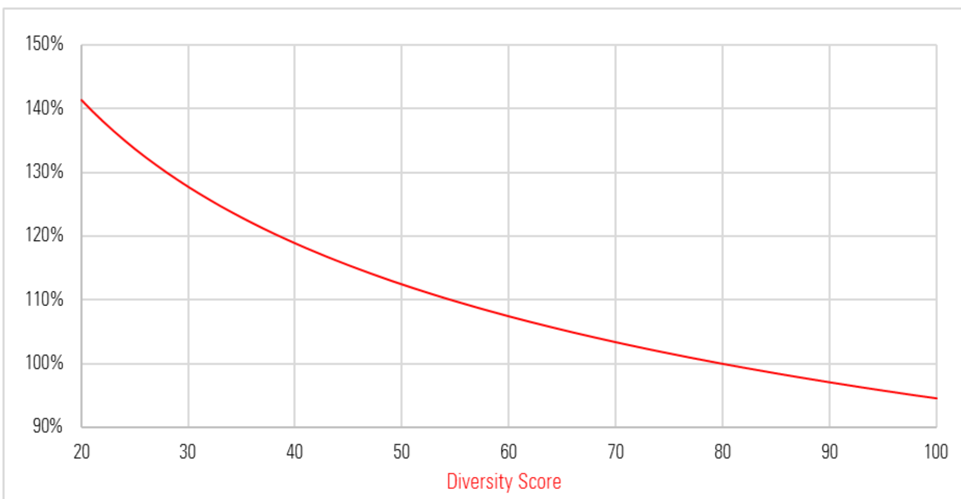
### Diversity Adjustment

Morningstar assumes that a diversified pool has a diversity score of approximately 80 and penalizes a portfolio with a lower score or one with higher risk due to more chunkiness, and conversely, provides credit to a portfolio with a higher score or one with lower risk due to more granularity.

**Diversity Adjustment** = (80/Portfolio Diversity Score) ^ (1/4)

Chart 2 demonstrates how Morningstar would assign a Diversity Adjustment for a given diversity score. For example, a score of 20 would result in a 141.4% adjustment to the Base-Case Target CDR. Morningstar considered an exponential function, instead of a linear one, because of the increased volatility in pool performance at lower diversity scores. Using Morningstar's Diversity Adjustment, the rating impact of moving from 80 to 20 diversity score can be up to three notches lower.

**Chart 2: Diversity Adjustment**




Please note that apart from Diversity Adjustment, Morningstar would consider largest allowed industry, obligor, and offshore concentrations and may run additional stresses for portfolios with limited diversity.

### Manager Adjustment

Morningstar's Manager Adjustment is based on our assessment of the CLO manager's historical performance compared with the market's performance, trading strategy, and operational capabilities of a manager. The performance assessment corresponds to the historical default and recovery experience, workout, and trading of loans. In addition, we consider the manager's policies, procedures, and operational risk management.

With regard to historical data, it is important to remember that default history is only part of the analysis. Many managers prefer to sell credit risk assets well before actual delinquency or reorganization. It is important to understand the credit sale history along with the manager's recovery history. Often, the data is not available, and Morningstar will look to default history coupled with collateral or equity performance across credit cycles. Morningstar will consider whether the manager has shown consistent collateral performance and how it has weathered the economic cycles.

**Manager Adjustment** = A numerical adjustment to account for a manager's relative analytical or operational ability, based on Morningstar's review.

Morningstar expects a manager to have a proven record of managing multiple CLOs with performance data through the economic cycle, backed by an established operational infrastructure. A higher than 100% adjustment corresponds to a weaker-than-expected, or less experienced, manager. Conversely, a lower than 100% adjustment corresponds to an exceptional and more experienced manager.

### Sample Calculation - Adjusted Target Break-Even CDR

For a hypothetical transaction with BBB target rating on a note, and collateral with a WARF of 2800, diversity score of 70, and a Manager Adjustment of 110% corresponding to a new manager with relatively less experience than an average manager, we would calculate the Adjusted Target Break-Even CDR as follows:

Assuming –
Base-Case Target CDR for BBB target rating of 6%. See Table 2.
Recovery of 62%, assuming 100% first-lien collateral. See Table 1.

**Adjusted Target Break-Even CDR** = 6% * (2800/2720) * (80/70)^(1/4) * 110% = 7.02%

The rated note in this example would need to withstand a conditional default rate greater than or equal to the target rate of 7.02% to be considered for a BBB rating, when modeled with 62% recovery with 18 months lag.

Please note that these examples are for demonstration purposes only, and Morningstar may modify the assumptions for atypical collateral portfolios, unusual structures, or other reasons. While historical loan performance may provide a starting point for Morningstar's Base-Case Target CDR or recovery assumptions, the numbers shown in Tables 1 and 2 may vary based on the manager's historical performance and other deal-specific characteristics. For example, Morningstar may penalize for higher-than-average defaults or lower-than-average recoveries on the defaulted loans, making the Base-Case Target CDR for each rating category higher, or making the recoveries for each rating category lower. The manager's inability to maintain the portfolio within covenanted levels or continued inability to manage a "maintain or improve" condition, where any trading must result in maintaining or improving certain collateral characteristics, may also increase the Manager Adjustment. These adjustments may happen separately or simultaneously for a given CLO transaction that Morningstar is rating. In addition, while Morningstar typically uses a constant conditional default rate, or a flat CDR curve, for the life of the transaction, it may analyze the effect of different front-loaded or back-loaded default curves on the transaction, as deemed appropriate.

## Section 4 – Combination Notes and Other Derivatives

Morningstar uses the approach outlined herein as the starting point for rating derivatives of CLO tranches such as combination notes or risk-retention notes and for rating revolving facilities of broadly syndicated and middle-market loans that are not as standardized as CLOs. However, Morningstar may apply additional stresses for these transactions to address risks specific to them, if appropriate.

### Combination Notes

A typical combination note is backed by cash flows from several tranches of a CLO, usually a portion of the tranches with A or lower ratings and the unrated equity piece. Combination notes are usually structured as principal-only notes where the interest and principal payments on the underlying tranches and equity pay down the outstanding principal balance of the combination note. A combination note may be additionally sensitive to two key risks: refinancing risk and ramp-up risk.

### Refinancing Risk

On the refinancing of the underlying CLO, if the combination-note investors choose not to acquire the newly refinanced notes, it would result in an immediate paydown of the principal and would eliminate future interest payments from the underlying notes. For a zero-coupon note that is materially dependent on payments from interest proceeds, this might be a considerable risk. To analyze the extent of refinance risk, Morningstar considers the following -

• Refinancing is typically allowed only after the noncall period, usually two years, allowing for significant pay down of the combination note through interest and equity payments.

• In a scenario with rising defaults, the underlying notes are not likely to get refinanced at lower coupons. Reduced coupons on the underlying notes would be likely only in a benign economic environment with low default rates, a scenario that is beneficial to the combination notes.

• Any refinancing, whether of the senior most CLO tranches, which is typical in the market, or of the junior tranches, which are less desirable candidates for refinancing as a result of being issued at a discount, should result in savings from a reduced coupon and would be passed on to the equity tranche as a distribution of excess interest proceeds. This is likely to increase the cash flows to the combination note, which typically does not include the senior tranches but has a significant portion of equity.

If the combination-note issuer turns down the terms of the refinancing, that tranche is repaid at par and used to pay down the outstanding balance of the combination note. While this takes away the benefits of any future cash flows from interest payments, it is important to note that the investors in combination notes usually hold significant, and sometimes controlling, positions in equity and other tranches of the CLOs, and have longstanding relationships with CLO managers. It is unlikely that a refinancing would take place that would be detrimental to their interests.

Morningstar believes that the refinance risk is low for typical combination-note structures. However, after considering the foregoing, if we assess the refinancing risk to be high for a given combination note, for a given target rating scenario, we may apply additional stresses to rate these notes, such as modeling higher prepayments or lower weighted average spread. Some factors that could lead to such additional stresses include materially higher or lower concentration of equity in the combination notes, inclusion of senior notes in the combination note, nonstandard transaction terms such as a shorter noncall period, and weaker voting rights for the noteholders of the tranches constituting the combination note.

**Ramp-Up Risk**

Many CLO managers accrue assets in a warehouse or other credit facilities for a few months prior to closing, but the CLO is not completely ramped-up at closing. A typical CLO has several months after the closing date to complete the acquisition of collateral. Some CLOs acquire a substantial portion of the collateral from a prior CLO, thereby retiring the older transaction in favor of more attractive reinvestment and financing options.

While Morningstar is not aware of any recent failures to ramp up, in the event of failure, there's a significant exposure to the combination notes: CLOs typically issue liabilities in excess of collateral to cover closing costs. This results in issuance of a nominally higher amount of equity compared with the overcollateralization amount at closing. Hence, if the CLO fails to ramp up, the equity portion of the combination note may take material losses. In addition, if the notes are accelerated after the occurrence of an event of default or if the notes are otherwise redeemed pursuant to a tax, optional, clean-up, mandatory, or other redemption, such events could result in similar consequences to those caused by a refinancing.

To analyze ramp-up risk, Morningstar will consider the CLO manager's performance history, operational capabilities, and alignment of incentives with the investors. This is considered in conjunction with the market conditions, amount of accrued assets, sources of assets, evaluation of transaction documents and other deal-specific considerations. If Morningstar considers the ramp-up risk material, we may run additional stresses on prepayment or weighted average spread of the collateral pool.

**Risk-Retention Notes**

Pursuant to the U.S. and EU risk-retention rules, the retention holder, which is usually the manager, would be required to purchase the retention interest in the CLO. A portion of the retention interest may be set aside in a special-purpose vehicle to be rated. This risk-retention note may be a vertical slice, wherein the retention holder is holding a portion of every tranche across the capital structure; a horizontal slice, representing a part of just the equity piece; or an L-shaped slice of the structure, a combination of the two. The cash flows for a risk-retention tranche are usually a pass-through of the underlying notes, in contrast to the principal-only structure of a combination note. However, depending on the structure of the tranche, it may also be subject to similar refinancing and ramp-up risks.

Morningstar will analyze risks specific to risk-retention tranches depending on the exposure to different parts of the capital structure, and may apply additional modeling stresses to rate them.

**Nonstandard Broadly Syndicated and Middle-Market Loan Facilities**

Some loan facilities are structured with nonstandard eligibility criteria, covenants, and waterfall as compared with a typical CLO. Morningstar will apply the approach outlined herein to rate such facilities. However, as in the case with combination notes or risk-retention notes, Morningstar may apply additional stresses to rate these facilities as well.

For example, it is common to see that the eligibility criteria in these facilities allows for the life of an asset longer than the facility maturity date. To address the additional liquidity risk posed by the outstanding loans at the facility's maturity date, Morningstar may apply a market-value haircut to such assets, or assume them to be defaulted at maturity and apply recovery to those assets similar to the ones shown in Table 1, to analyze whether there is sufficient collateral at maturity to pay off the outstanding liabilities.

**Section 5 – Regulatory Concerns**

Morningstar will review, with the assistance of legal counsel, the CLO's compliance with rules and regulations, such as the Dodd-Frank Wall Street Reform and Consumer Protection Act, the Investment Company Act of 1940, the Securities Act of 1933, the Employee Retirement Income Security Act of 1974, and the Commodity Exchange Act. Many rules and regulations including, but not limited to, the risk-retention requirements may affect the manner in which the CLOs are issued and structured and may adversely affect the CLO issuer and the notes.

**Risk Retention**

There is uncertainty with respect to what is required to comply with the risk-retention rules, and there is no assurance that the steps taken by the transaction parties of the CLO would be sufficient to meet the risk-retention requirements.

Noncompliance with rules and regulations may result in a default under the CLO or other adverse consequences to the transaction, the manager, the CLO issuer, the notes and the investors. As such, Morningstar requires that notice of any such defaults be provided to Morningstar in order that Morningstar may take the proper rating action.

**Section 6 – Legal**

Morningstar uses external legal counsel to perform the legal review of certain items in these transactions relevant to Morningstar's ratings analysis, including a review of the transaction documents and opinions.

A typical CLO issuer is a bankruptcy-remote limited-purpose Cayman Islands exempted company. Morningstar expects the issuer's purposes to be limited to acquiring underlying loans and performing under the transaction documents and related matters. Morningstar expects to receive and review legal opinions from counsels to the various transaction parties. We typically receive opinions such as those regarding corporate, security interest, enforceability, tax, and other matters. The issuer's assets typically consist of the underlying loans, the accounts, and all proceeds of the foregoing.

A typical combination-note issuer is a limited-liability company organized under the laws of the state of Delaware.  Morningstar expects to receive and review legal opinions from counsels to the transaction parties with respect to the combination notes, similar to those received for a CLO.  When Morningstar rates revolving facilities of broadly syndicated and middle-market loans, Morningstar expects to receive and review legal opinions from counsels to the transaction parties involved.

**Limited Rating-Agency Confirmation/Notice**

In many CLOs, rating-agency confirmation may not be required for certain material amendments or modifications to the contractual terms for the underlying loans and/or material amendments to the indenture and investment-management agreement. In addition, notice of such items may be provided to Morningstar after such items are effectuated. Because Morningstar may obtain knowledge of these various items later, surveillance activities and any related rating adjustments may occur later than if rating-agency confirmation and/or prior notice of such items was provided.

**Section 7 – Surveillance**

After Morningstar initially rates a CLO, we will review and update the letter ratings periodically if Morningstar is engaged to do so. Morningstar typically receives periodic reporting that includes details of collateral performance and trigger tests. We will consider whether deal performance indicates that the inputs used in assigning ratings should be updated. If the model outputs we considered when first assigning ratings change materially, we will consider reviewing the transaction for a possible rating action. However, as a transaction seasons, the performance of the portfolio becomes a bigger driver of Morningstar's rating analysis than do initial assumptions.

**Morningstar Credit Ratings, LLC**

**For More Information**
Norman Last
+1 646 560-4508
norman.last@morningstar.com

Sales and Customer Service
+1 800 299-1665
ratingagency@morningstar.com

4 World Trade Center
48th Floor
150 Greenwich Street
New York, NY 10007 USA