

U.S. CMBS Conduit/Fusion Ratings Methodology

Proposed Appendix 3 — Transitional Assets (CRE CLOs)

Morningstar Credit Ratings

January 2019 Version: 1.0

Contents

- 1 Summary
- 2 Arriving at Morningstar NCF and Value
- 3 Calculating Stressed Value and Loss
- 4 Fusion of Loans with IG Charateristics
- 5 Pool Level Concentration Adjustents
- 6 Adjustments to Base Credit Enhancement
- 7 Surveillance of CRE CLO Ratings

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Methodology (November 2018) document that outlines Morningstar's approach to analyzing transitional real estate collateral. It does not make any changes to the parent document.

Summary

Securitizations of transitional real estate loans, commonly known as commercial real estate collateralized loan obligations, or CRE CLOs, are more complex and generally require more specialized credit and structural analysis than typical conduit/fusion transactions. This appendix details Morningstar Credit Ratings, LLC's approach to analyzing these transactions and how the analysis may differ from that of a conduit/fusion deal.

Broadly speaking, Morningstar will employ an underwriting philosophy that is consistent with our approach to conduit collateral but with certain adjustments to account for the fact that many of the properties in CRE CLO pools are un-stabilized or otherwise transitional in nature. Furthermore, our approach to modeling both loan-level and pool-level expected losses will generally mirror our conduit/fusion framework but with certain adjustments to account for structural features unique to CRE CLOs. We may also apply additional adjustments to our base credit enhancement levels for relevant credit or structural features, including reinvestment criteria adjustments to account for potential credit drift and manager adjustments to account for manager quality. All steps outlined in the Ratings Process section of our U.S. CMBS Conduit/Fusion Ratings Methodology document will typically remain the same with the following exceptions:

Step One: Arriving at Morningstar Sustainable NCF and Value

Like a conduit/fusion transaction, Morningstar analysts first conduct collateral-level underwriting to arrive at a sustainable net cash flow and value for a portion (or, in some cases, all) of a pool's collateral. For properties that are un-stabilized or otherwise transitional in nature, Morningstar employs certain adjustments that vary from its approach to properties in conduit CMBS. These adjustments and other additional considerations are used to derive a stabilized Morningstar net cash flow and value for a transitional property. The decision to stabilize is asset specific and based on the property's operating history, borrower's business plan and experience, market fundamentals and certain loan structural features. Please refer to our Addendum to CMBS Property Cash Flow Underwriting and Valuation

<u>Guidelines for Transitional Properties (January 2019)</u> for more detailed information on our approach to analyzing and stabilizing transitional commercial real estate loans.

Step Three: Calculating Morningstar's Stressed Value and Loss

Morningstar will typically utilize its CRE Credit Model as the basis for calculating expected losses for a pool of transitional commercial real estate loans. The CRE CLO version of our CRE Credit Model incorporates certain changes to account for the structural features not present or allowable under a real estate mortgage investment conduit, or REMIC. Specifically, we modified our CRE Credit Model to account for the presence of future funding components, ramp up and reinvestment periods and adjusted our approach to assessing diversity within the CRE CLO structure.

For properties that we elect to stabilize, we will typically model the loan's fully funded commitment balance when calculating the loss. For loans analyzed on an as-is basis, we will typically exclude any future funding component and model loss based on the loan's cutoff date balance.

If a pool has a ramp-up period for which the future collateral has been preidentified, we will usually include these loans in our modeled pool. In instances where a pool has a ramp period for which the collateral has not yet been identified, the base credit enhancement levels from the modeled pool will be applied to the fully ramped up pool balance.

Step Six: Fusion of Loans with Potentially Investment-Grade Credit Characteristics

Given that transitional loans are primarily highly leveraged and generally do not exhibit investment-grade credit characteristics, it is unlikely that we would elect to fuse a loan unless we deemed it to pose an outsize binary risk to the transaction.

Step Seven: Pool-Level Concentration Adjustments

We make certain adjustments to our blended Herfindahl score (the MCR Diversity Score) in order to incorporate additional elements of our U.S. CMBS Single-Asset/Single-Borrower Ratings Methodology and account for the smaller expected pool size given the greater complexity and management intensive nature of CRE CLO loans. The minimum thresholds required to avoid incurring a concentration penalty are generally as follows:



	Herfindahl Score Threshold	
Factor	(Conduit/Fusion)	(Transitional/CRE CLO)
Effective Loan Count	40	30
Effective Property Types	4	3
Effective MSAs	20	15
Effective States	10	7

These adjustments create a lower ideal pool diversity, but the slope of our Herfindahl penalty function is modified to make it more onerous. This results in a lower initial hurdle but a more punitive increase to the enhancement penalty when a pool's concentration metrics fall below our thresholds.

If the legal documents for a given pool enumerate a minimum required loan Herfindahl score, we will typically model the Morningstar diversity score using the specified value. Otherwise, we will usually default to the loan Herfindahl score of the reviewed pool when calculating the Morningstar diversity score.

We reserve the right to apply an additional diversity penalty if a given pool exhibits, in our analytical opinion, substantially higher property type, geographical, loan size, or sponsor concentration risks.

Programmatic Adjustments to Base Credit Enhancement

To account for the unique structural features present in both static and managed CRE CLO transactions, Morningstar typically makes the following programmatic adjustments to a pool's required base credit enhancement levels:

Manager Score

As CRE CLO managers, or affiliated entities, are usually heavily involved in loan origination and potential workouts, Morningstar applies an adjustment to the base required enhancement levels for both static and managed pools. We analyze the analytical and operational capabilities of the manager and may consider the manager's financial condition, business model, management personnel experience, investment-advisor status, origination experience, workout capabilities, technology infrastructure, internal controls, risk-retention strategies, marketing and collection practices. We may also compare the manager's capabilities with generally expected performance of comparable managers. Experienced managers with diversified real estate platforms typically receive a credit positive adjustment while new managers or managers for whom CRE CLOs are their sole business typically receive a credit negative adjustment to their base credit enhancement levels.



Ramp-Up and Reinvestment Periods

If a transaction has a ramp-up period or reinvestment feature, Morningstar will typically apply a penalty to the transaction's base credit enhancement levels in order to account for potential credit drift. In dimensioning this penalty, we consider several factors, including initial pool composition, length of the ramp-up or reinvestment period, eligibility criteria, and permitted property and state concentration limits. We assume that, to some degree over time, the loan pool will migrate in concentration from lower-volatility property types (such as, multifamily, industrial, and self-storage) to higher volatility property types (such as, office, retail, and hotel).

The magnitude of our adjustment will be determined based on the size and scope of the collateral box and the flexibility of the eligibility criteria. Pools with tighter criteria (i.e. lower permitted limits of volatile asset classes and allowable loan-to-value ratios) and shorter periods will generally receive more favorable treatment. Morningstar classifies pools as either having a low, medium, or high level of migration risk. However, we reserve the right to apply whatever penalty we deem analytically necessary.

Static pools with ramp-up provisions of less than 20% or with periods of 180 days or less will generally be assumed to have a low risk of credit drift. However, pools structured with larger ramp-up provisions, longer ramp-up periods, or weak eligibility criteria will generally exhibit a larger degree of credit drift. Morningstar reserves the right to make adjustments to its base enhancement levels to account for this risk.

Benefit of the CLO Structure

Morningstar views the structural features of a CLO, such as overcollateralization and interest-coverage tests, as credit positive compared with a conventional REMIC structure. We will usually utilize a cash flow engine such as Intex DealMaker to determine the benefit of this structure from an advance rate/credit enhancement perspective.

In order to do this, we will load the details of the pool's collateral and liability waterfall, including the OC and IC tests, into our cash flow engine of choice. Each liability tranche is then assigned a monthly default rate, or MDR, and weighted-average loss severity, or WALS, from the CRE CLO version of our CRE Credit Model. The MDR is based on the stressed probability of default for the respective tranche from the CRE Credit Model, and the WALS for each tranche is based on the adjusted base credit enhancement at each rating category from the CRE Credit Model.

Intex or a similar cash flow engine generates periodic asset cash flows, to which Morningstar then applies interest rate stress assumptions and weighted average asset spread assumptions. If a



transaction's legal documents enumerate a minimum weighted average spread for the collateral loans, Morningstar will stress to that value. Otherwise, we may apply a standard penalty.

Finally, the Intex Subordination Solver or a similar utility is applied to the periodic cash flows to solve for the required credit enhancement at each rating category. These minimum required credit enhancement values are then compared to the levels generated by the CRE Credit Model (inclusive of any and all adjustments). The delta between the two values at each rating category represents the benefit of the CLO structure. This delta is then applied to the levels generated by the CRE Credit Model in order to arrive at the final required credit enhancement levels for the pool, inclusive of the benefit of the CLO structure and all applicable adjustments.

Surveillance of CRE CLO Ratings:

For a managed CRE CLO, Morningstar may be requested to provide a no-downgrade letter addressed to the securitization trust when new loans are contributed during the reinvestment period. Morningstar may either decline to review such a request or if the no-downgrade request is reviewed, Morningstar may agree to provide or deny providing a no-downgrade letter. A no-downgrade letter is confirmation from Morningstar that the reinvestment loan, in and of itself and solely as of the date requested, will not result in a qualification, withdrawal, or downgrade on any of the current ratings of the rated deal securities by Morningstar. The letter shall not constitute any consent, approval, agreement, and/or advice or affirmation and is based solely on the information provided to Morningstar at the time of request. In addition, any no-downgrade letter and analysis by Morningstar does not address whether the reinvestment loan is permitted, consistent, or otherwise approved under the rated deal documents; any benefits or effect of the reinvestment loan on the security holders or parties to any rated deal documents or any such parties' interests; and/or any considerations not considered or enumerated pursuant to the no downgrade letter and the ratings letters issued in connection with the rated deal. Any ratings of the deal remain subject to and qualified by the initial ratings letter.



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