

Methodology

*Rating Global High-Yield Loan
Securitizations, Structured Loans
and Tranching Credit Derivatives*

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Insight beyond the rating.

CONTACT INFORMATION

U.S. STRUCTURED FINANCE – STRUCTURED CREDIT

Jerry van Koolbergen

Managing Director
U.S. Structured Finance
Tel. +1 212 806 3260
jvankoolbergen@dbrs.com

Glen Leppert

Senior Vice President
U.S. Structured Finance
Tel. +1 212 806 3272
gleppert@dbrs.com

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All DBRS ratings and research are available in hard-copy format and electronically on Bloomberg and at DBRS.com, our lead delivery tool for organized, Web-based, up-to-the-minute information. We remain committed to continuously refining our expertise in the analysis of credit quality and are dedicated to maintaining objective and credible opinions within the global financial marketplace.



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Introduction

Structured credit products secured by high-yield (e.g., below investment grade) corporate collateral are some of the most ubiquitous in the entire structured finance marketplace. They consist of a broad spectrum of collateral and structure, and have a long history that dates back to some of the earliest structured credit transactions. While the primary scope of this methodology refers to collateralized loan obligations (“CLOs”), the methodology is applicable to all structured credit transactions backed by high-yield corporate debt. In its most basic form, a CLO can be thought of as a simplified financial intermediary, such as a bank. The party that has the legal responsibility to choose the collateral mixture (subject to a multitude of legal limitations on the ultimate composition of the pool) is referred to as the collateral manager or, in the case of balance sheet structures, the collateral selection agent. Like a bank or a specialty finance company, the CLO itself borrows via the wholesale global capital markets, and lends to small- to medium-sized corporations.

The role of DBRS as a credit rating agency in the CLO market is to provide a third-party opinion as to the likelihood of the repayment of principal and interest to the tranches being rated (equity tranches are typically unrated). Traditionally, the primary demand for credit ratings has been driven by investors that purchase CLO debt tranches based on policy driven legal requirements (e.g., certain pension funds are required to have ratings limits on their debt holdings). Due to the significant dislocation in the global credit markets beginning in August 2007, the traditional form of a CLO has changed substantially. As investors have shunned certain riskier and opaque structured finance securities, CLO production has shifted away from an “originate-and-distribute” model, whereby investment banks would provide loan warehouses and CLO underwriting services to collateral managers, toward a model driven primarily by regulatory capital efficiency, risk transfer and balance sheet efficiency. Although the current state of the entire securitization market is in flux, this methodology piece aims to provide appropriate levels of flexibility, while providing a rigorous qualitative and quantitative framework that is both consistent and transparent.

The criteria in this publication should not be seen as static. DBRS reviews market developments on an ongoing basis to ensure that its policies and criteria remain relevant. On an annual basis, DBRS will review these criteria, and may publish interim updates to these criteria as well. Updates will be publically available on www.dbrs.com.



Collateral Overview

BROADLY SYNDICATED HIGH-YIELD LOANS

Broadly syndicated loans are loans originated by large money-center banks and broker dealers. The loans are typically made to large multinational corporations typically for the purposes of re-capitalization or for leveraged acquisitions. The loan interest is typically calculated as a margin over LIBOR or prime, and includes a variety of covenants to protect the lender. The issuance is typically syndicated to various institutional investors while the originating bank typically acts as agent for the lenders, and is the party responsible for distributing payments by the borrower back to the various lenders. The loan facility typically consists of several loan tranches, such as revolving letters of credit, delayed draw commitments and term loans. Although the structure of the loans within individual facilities does vary, the loans rank pari passu to each other in claims against the borrower. In the event that the borrower defaults, loans typically have legally binding liens against either specific collateral or the entirety of the borrower's assets. While the secondary market is often cyclical for all credit-based products, these types of loans have historically been broadly traded with large volumes and tight bid/offer spreads. It is important to note that some of later vintage (post 2005) broadly syndicated loans were structured with significant amounts of leverage (e.g., debt-to-EBITDA), minimal covenants, and the ability to defer interest ("PIK-toggle"). Many of these loans have been and remain publically rated, where the credit ratings on these instruments generally range from BB+/Ba1 to CCC+/Caa1 (Standard & Poor's, Moody's Investor Services).

MIDDLE MARKET HIGH-YIELD LOANS

In form and structure, middle market loans are similar to broadly syndicated loans, but are generally made to much smaller obligors by fewer individual lenders. The typical middle market loan is originated by a bank and syndicated to between two and five lenders ("club syndication"). Another common middle market structure is a bilateral loan, which is usually a credit agreement directly between the borrower and the lender (either a bank or a CLO). From a credit standpoint, the relative small size and lack of a large international revenue base of the borrowers is often a concern, but these factors are sometimes mitigated by structural enhancements of the loans themselves, which can include relatively tight covenants and granting of expanded rights to the lenders if the borrower becomes impaired. Many middle market loans are often not publically rated, but are "shadow rated" by credit rating agencies. These shadow ratings are generally available as a proxy to determining the creditworthiness of these types of loans. For unsecured loan pools, many banks have internal risk grading systems, which are similar to credit estimates provided by credit rating agencies. In either case, DBRS would review the existing available information and determine what additional review might be required to appropriately assess the credit.

HIGH-YIELD CORPORATE BONDS

High-yield bonds differ from securitizations backed by loans in that they are directly tradable securities. These securities typically have fixed-rate coupons bullet maturities and are publically rated. Bonds are considered unsecured obligations of the borrower, and historically have seen low recovery rates upon default.



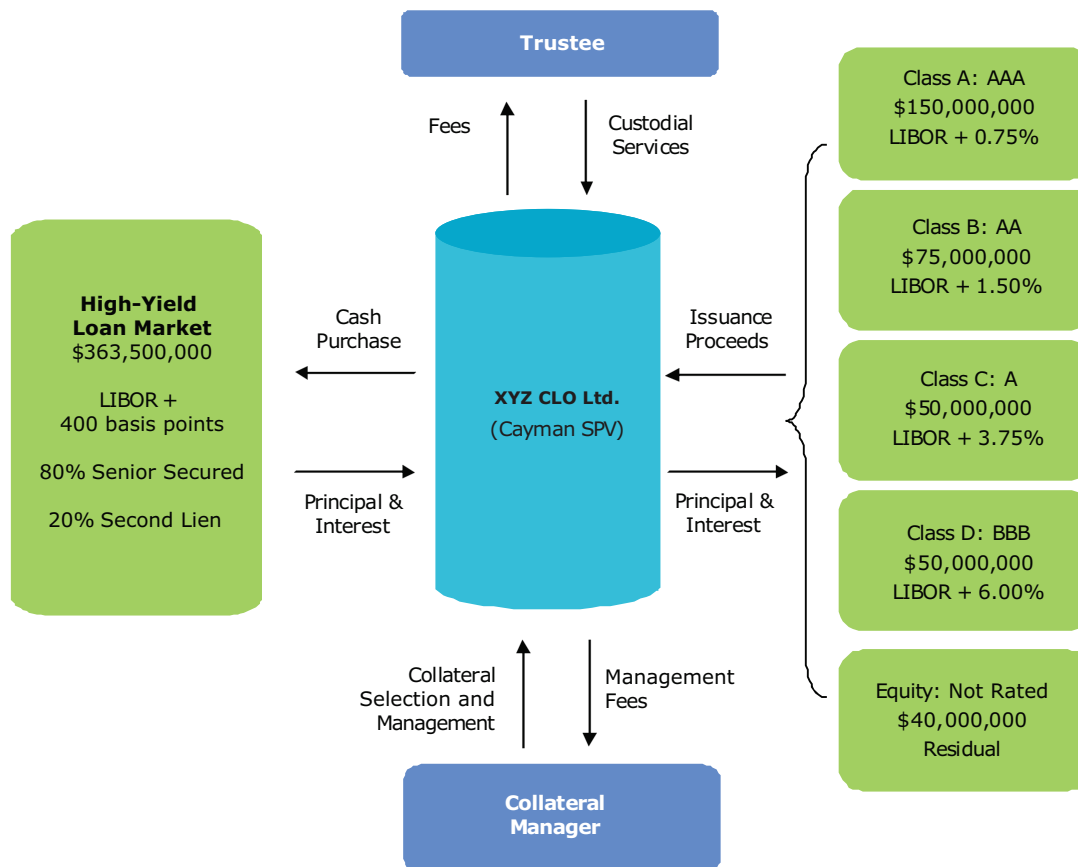
LOAN CREDIT DEFAULT SWAPS

Similar to the investment grade corporate bond market, there exists a synthetic market for high-yield loans via loan credit default swaps (“LCDS”). An LCDS contract binds a protection seller (e.g., risk-taker) to provide credit protection on a reference obligation to a protection buyer. For example, hedge fund ABC can sell protection to bank XYZ on \$10 million notional of Widget Corp, Inc. for 300 basis points (bps) per annum for a term of five years. If Widget Corp defaults, XYZ bank would then deliver \$10 million of cheapest-to-deliver senior secured loans to ABC fund, and ABC fund would have to pay par, or \$10 million, for those loans. The list of eligible senior secured loans per reference entity is kept by MarkIt Partners, an independent third-party provider of credit data. In addition to the physical settlement as described above, some contracts may be cash-settled, where the recovery amount is either determined upfront or is calculated by an auction process. The International Swap Dealers Association (“ISDA”) maintains a standardized set of documents for LCDS, although slight variations are common. Although in most cases the LCDS is not directly rated, the ratings of the underlying reference obligations may be used to assess the risk of a credit event. Given that there are a variety of settlement procedures at a credit event (e.g., physical, auction, fixed recovery) DBRS may apply recovery assumptions in the rating process specific to the settlement procedures detailed in the contract.

Structural Overview

Most structured products backed by high-yield corporate credit obligations utilize securitization technology to tranche pools of loans/bonds into different securities based on credit risk and maturity. The CLO (typically a tax-exempt Cayman Islands special purpose corporation) is capitalized by an equity tranche and one or more debt tranches. The equity tranche is typically structured as preference shares or income notes which receive all residual cash flows, while the debt is structured similar to a corporate bond (stated coupon, stated maturity, CUSIP, T+3 settlement, etc). The CLO uses the proceeds from the equity and debt issuance to purchase a pool of existing high-yield debt securities either in the open market or by making loans directly to borrowers. The interest and principal proceeds from the loan collateral are disbursed to each of the tranches based on a pre-determined set of legally binding priority of payments, often referred to as the “waterfall.”

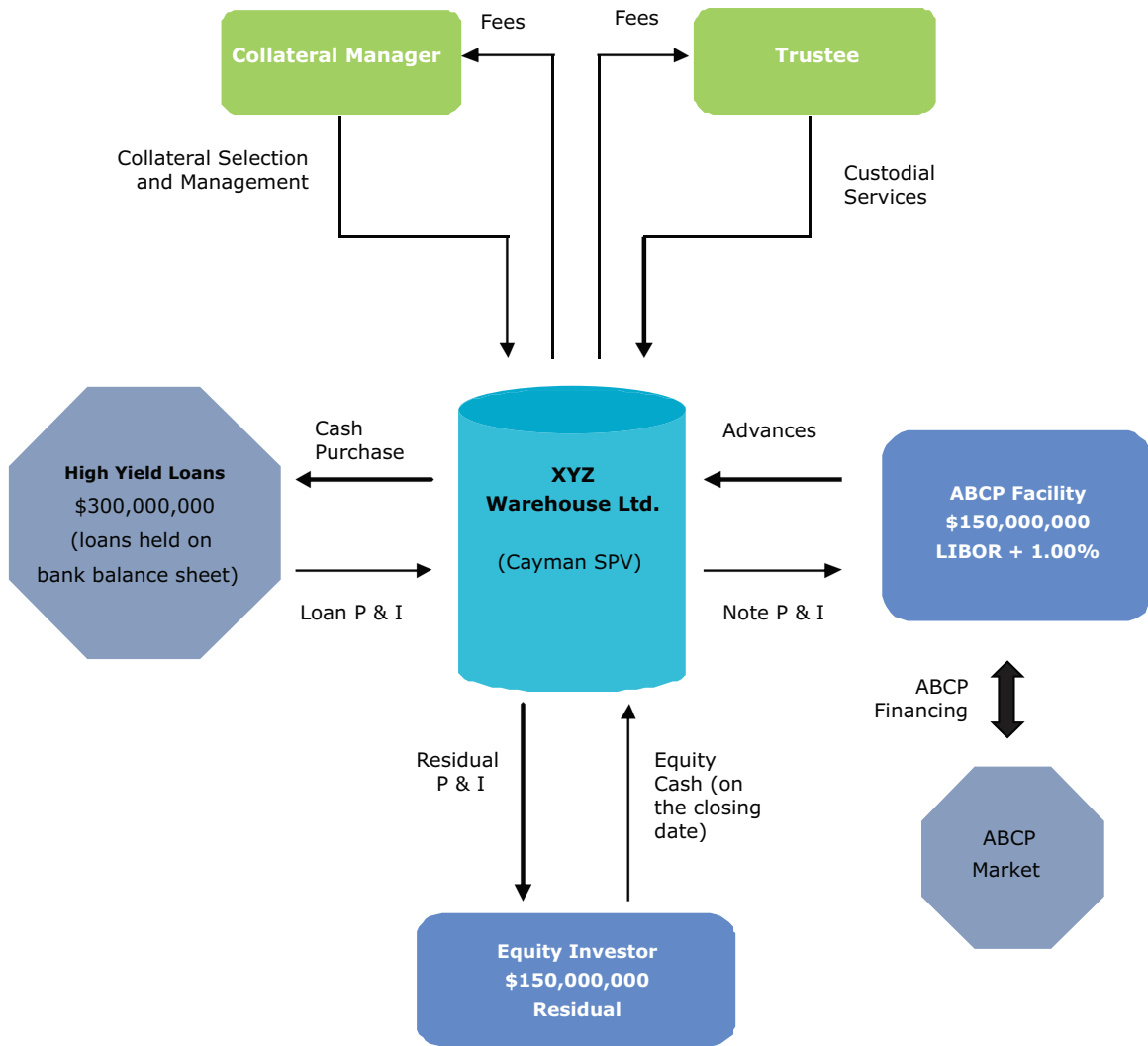
Diagram 1: A Typical Traditional Cash Flow CLO Structure



Note: The above capital structure is not necessarily indicative of actual tranche sizes and spreads

The following is a variation to this is a simplified structure that has only one debt tranche and one equity tranche, where the debt tranche is structured as a direct loan between the borrower (in this case, the CLO) and the lender (either a bank’s balance sheet or an asset-backed commercial paper conduit). This format is most commonly seen in CLO warehouse restructurings and balance sheet-driven transactions.

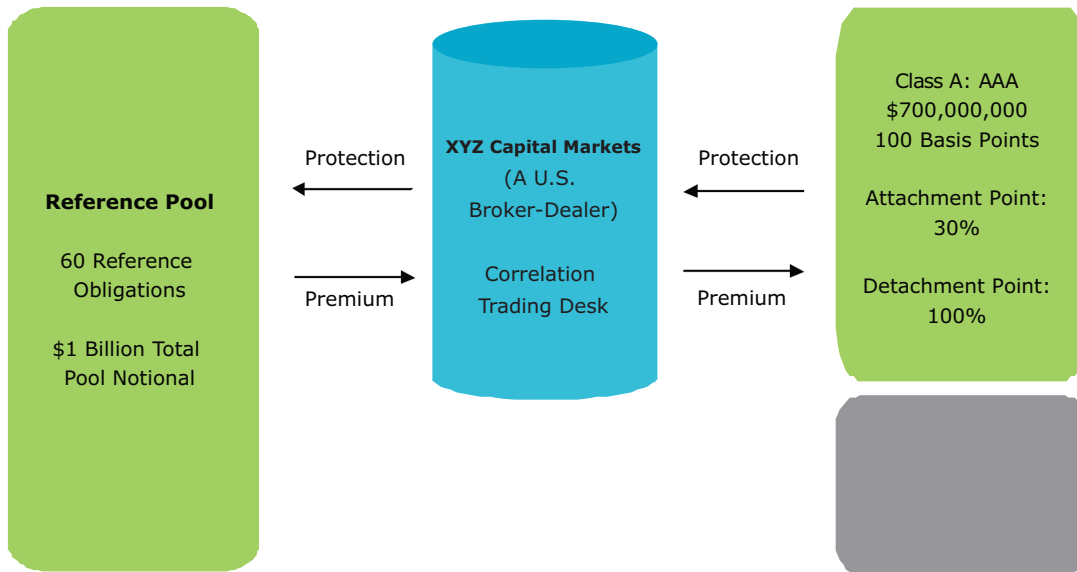
Diagram 2: A Balance Sheet-Oriented Structure



In addition to cash securitizations, CLOs can also be structured synthetically. In a synthetic CLO, a special purpose vehicle is created that (“SPV”) that sells credit protection (i.e. agrees to take on risks based on certain performance parameters). The credit protection is typically provided to a financial institution that has an ownership interest in a pool of high-yield corporate reference obligations. The special purpose vehicle (essentially the CLO itself) then buys credit protection from different investors. The risk profile and associated ratings are expressed by an attachment point and detachment point (a performance band for the underlying reference obligations) for each class.



Diagram 3: A Synthetic CLO Structure





Transaction Parties

ARRANGER

The arranger of a CLO transaction is typically a large investment bank, responsible structuring, arranging and distributing the securities issued by the special purpose vehicle. The arranger often provides warehouse funding for the collateral pool and sources investors for the various debt and equity tranches issued by the transaction. While historically the originate-and-distribute model has been most prevalent, drivers to many current transactions include regulatory capital efficiency, internal risk transfer and balance sheet efficiency. In these cases, the arranger often acts as one of the primary investors (either in the equity or rated debt) in the transaction.

TRUSTEE

The trustee plays an integral part in a CLO transaction. The trustee acts as custodian, collecting principal and interest from the loan collateral, creating monthly reports, and disbursing proceeds to the investors according to the governing documents of the CLO (usually an indenture). DBRS mandates that a CLO transaction use an approved trustee. Having a reputable trustee as the custodian of the transaction ensures that most operational risks are minimized, as the trustee employs its own set of criteria and utilizes external counsel to ensure that the governing documents are well-defined and consistent. Please contact DBRS for the most current list of acceptable trustees.

COLLATERAL MANAGER

The collateral manager acts as the selection agent of the initial pool of loans, as well as provides ongoing management of the assets over the term of the transaction. Depending on the transaction, the manager may or may not be charged with reinvesting principal proceeds into new loan collateral. In most transactions, there are significant collateral quality covenants and concentration limitations specific to the pool. There are duties that the manager must provide (e.g., default workouts) and decisions that the manager is typically required to make (e.g., reinvestment) that make it mandatory for DBRS to perform an on-site review of the collateral manager at least once every 12 months. For pure static transactions, there may not be a collateral manager (e.g., the arranger acts as the selection agent of the pool). In these situations, either the arranger or the trustee typically assumes responsibility for voting on loan amendments on behalf of the rated notes.

LEGAL

The arranger retains its own counsel; “Deal counsel” works on directly on behalf of the arranger and is responsible for drafting all governing documentation, and providing true sale and tax opinions. Typically, DBRS has minimal direct contact with deal counsel, as most comments and concerns are routed directly through the arranger. If there are concerns regarding legal risk to DBRS ratings, independent, external counsel (representing DBRS) may be required.

ACCOUNTANT

Third-party accounting firms are often employed to audit the transaction portfolio at closing and issue ongoing opinions, as needed.



Qualitative Methodology

The guidelines below outline the qualitative framework that is applied by DBRS to each transaction that is reviewed for the assignment of potential ratings. As each transaction reviewed by DBRS is unique, these guidelines are not intended to be exhaustive. DBRS appropriately applies expert judgment in cases where transactions have attributes that may mitigate certain risks in a manner that is beyond the scope of this analysis. Conversely, in cases that introduce certain risks that are not contemplated in standard credit analysis, DBRS would opine on those risks on a case-by-case basis.

RATIONALE

Although it does not directly affect DBRS's analysis, the motivation for obtaining the rating needs to be clearly articulated and well understood. Examples of typical ratings drivers include, secured 3rd party funding, asset restructuring and warehouse take-out. It is also important that the end user of the rating be known and identified. For example, it is important to determine whether the product being rated will be distributed to third-party investors or the rating will be used for regulatory capital purposes. Though the techniques applied to develop and assign the rating do not vary as to the ratings application, the ultimate use of the ratings impact the rationality and appropriateness of the ratings being considered.

COLLATERAL POOL

First and foremost, it is imperative that the documentation and the modeling be coordinated. The collateral pool (either an explicit list of collateral or a group of eligibility criteria and concentration limitations) is explicitly matched against the modeled pool to ensure consistency.

Static Pools

At closing, DBRS will request an independent accountant's certificate listing the schedule of assets as of the closing date.

The following exceptions apply:

- If the rating is being provided for a transaction where the majority of risk before and after the closing date is held by the same party, DBRS may rely on information provided by the rating letter addressee (provided that such reliance is reflected in the rating letter).
- If the rating is being provided for the restructuring of a single asset, DBRS requires the last two monthly trustee reports, last two payment date reports and the original rating reports from each rating agency on the original transaction. The client should also provide a spreadsheet from the trustee with collateral level detail for all assets securing the restructured asset as of the execution date of the rating (i.e. closing date of the transaction).

Revolving Pools

At closing, DBRS will request an independent accountant's certificate (addressed to DBRS) listing the schedule of assets at closing (or, at some agreed upon prior date sufficiently close, to the closing date). The accountant's certificate should also indicate whether coverage and quality tests are satisfied as of that date.



If the transaction has a ramp-up period, the transaction will be evaluated to determine whether or not it is appropriately ramped up by the ramp-up effective date (as defined in the governing documents). DBRS reviews the transaction documents to ensure that the documents require (a) notification to DBRS, and (b) either an accountant's certificate (identical to the one provided at closing, as of the ramp-up date) or a current monthly trustee report be provided to DBRS. To the extent that the transaction is insufficiently (or inappropriately) ramped up either at or prior to the ramp-up effective date, DBRS may take rating action.

DOCUMENTS

All documentation is appropriately reviewed and internal or external counsel may be consulted on a case-by-case basis. Although it is not considered a governing document of a transaction, the Offering Memorandum must be reviewed by DBRS. The review will verify that disclosure is made regarding the risk that any amendments approved by note holders may cause DBRS to take rating actions on the rated notes.

OPINIONS

DBRS reviews all legal opinions relevant to the transaction. The legal opinions delivered on the closing date should correspond to the law of the jurisdiction that has been chosen by the transaction parties as governing law of the transaction documents. Enforceability (e.g., corporate level) opinions should be received for all named transaction counterparties. Lastly, DBRS should be included as an addressee on all related opinions.

Tax Opinions

Typically transactions are modeled assuming the entity is not subject to entity level taxation. DBRS will review tax opinions that verify this. Typically, DBRS reviews an opinion from the issuer's counsel indicating that the issuer will not be subject to taxation in the SPV jurisdiction, as well as a U.S. tax opinion as to whether or not the entity will be considered to be engaged in a U.S. trade or business.

Liens, True Sale, and Non-Consolidation Opinions

The transaction must have a fully perfected, first priority lien on all assets. For all transactions involving the transfer of cash assets to the issuer, DBRS requires true sale and non-consolidation opinions stating that the assets would be bankruptcy-remote to the asset seller. An exception to this would be in a situation where the asset seller will be the purchaser of 100% of the notes and equity of the issuer. In this case there is no accounting true sale, and the assets of the issuer would be consolidated. DBRS will consider rating these types of transactions under the following scenarios:

- The purchase agreement states that the asset seller will be purchasing all of the notes and equity from the issuer.
- DBRS is immediately notified upon the transfer of any notes or equity to parties other than the original purchaser (this process must be fully described in the governing documents).
- The rating letter must state that "in the event of a transfer of any notes or equity, DBRS will withdraw all ratings unless suitable true sale and non-consolidation opinions are provided to DBRS at the time of transfer."
- If the rating is public, a rating report or an offering circular would be published that states that the notes are subject to the appropriate rating withdrawal risks.



DERIVATIVE DOCUMENTATION

Interest rate options, currency options and credit default swap agreements should be in ISDA format. Schedule, confirmation and credit support annex (“CSA”) will be reviewed for each transaction...In general, DBRS does not mandate any fixed-versus-floating interest rate hedges, as the maximum amount of fixed/floating rate risk is reflected in the cash flow modeling stresses. Transactions that incorporate a material amount of basis risk (e.g., one vs. three month LIBOR, LIBOR vs. Prime, etc.) must either be 100% hedged or appropriately stressed in the cash flow modeling analysis.

EVENTS OF DEFAULT

DBRS will selectively review transactions that have entered events of default based on calculations that involve one or more prices on any of the securities that comprise the collateral pool. This review will determine the degree to which further analysis is required to determine the creditworthiness of the individual securities.

MANDATORY DBRS NOTIFICATIONS AND APPROVALS

DBRS requires that the following notifications be included in the governing documents of the transaction:

- Ramp-up completion.
- Any and all amendments.
- Optional redemption (and any withdrawal of optional redemption).
- Events of default, and waivers of events of default.
- Material breach of any transaction document.
- Change in tax status.
- Any legal action taken under the transaction documents.
- A monthly report prepared by the trustee that includes the current collateral pool (par balance, public ratings, performing vs. defaulted, etc.), note balances, and any coverage or collateral quality tests
- A payment report on each transaction payment date detailing the application of interest and principal proceeds within their respective priority of payments.
- Any notice received or sent to the investors of a DBRS rated security should also be sent to DBRS.

DBRS should be given consent on the following:

- Substitution of any transaction party.
- Any amendment that does not require at least 66 2/3% noteholder consent, provided that DBRS consent is not required to clarify document conflicts.

DBRS expects to be in contact with the trustee and arranger during any amendment discussions, as certain amendments may result in rating actions on one or more of the rated notes. DBRS anticipates that the trustee and the arranger will disseminate information regarding a potential rating action to the note holders upon the execution of an amendment.

Redemptions

Optional redemptions should only be permitted to the extent that DBRS has sufficient comfort that all rated note holders will be redeemed in full.

INTEREST AND PRINCIPAL PROCEEDS

The definition of interest and principal proceeds has an impact on modeled results, in view of the fact that interest and principal are generally treated differently in the structural waterfalls. Interest proceeds and principal proceeds should be held in separate accounts, managed by the trustee or collateral agent. Funds should not be comingled for any significant period of time.



Interest Proceeds

Interest proceeds should include interest and credit default swap (“CDS”) premiums paid on assets in the collateral pool. Recovery proceeds in excess of par may be treated as interest proceeds, but interest on defaulted assets should be classified as principal proceeds until 100% of par is recovered. Any interest proceeds received on eligible investments should be considered interest proceeds.

Principal Proceeds

Accrued interest purchased with principal must remain classified as principal (e.g., principal proceeds cannot be converted to interest through purchase of accrued interest). If the asset defaults before making its interest payment or if the transaction payment date occurs before the asset makes an interest payment, excess spread must be used to top up the principal account to the extent used to purchase accrued interest.

Proceeds from the sale of defaulted assets, credit improved assets or credit impaired assets shall be deemed principal proceeds. Unused deal proceeds on the ramp-up date should be deemed as principal proceeds.

It should be noted that unrated “equity” in these types of structures may take the form of income notes, preference shares, or common stock. In no case will DBRS assign ratings to a transaction where principal proceeds may be paid to the equity holders prior to all of the DBRS-rated obligations being paid in full.

TRADING AND SUBSTITUTION

Trading

DBRS will selectively review transactions in which trading is permitted. In order for trading to be permitted, trading gains and losses must be appropriately defined and accounted for in the documentation and reporting. In addition, a defined amount of cumulative trading losses must be appropriately capped, and trading must be terminated once that threshold is breached. Regarding the sale of defaulted assets, trading gains/losses are calculated based on the difference between the sale price of the asset and the DBRS recovery assumption for that particular asset (governed by the original rating category of the highest rated tranche in the transaction). DBRS will assume that the maximum amount of trading losses occurs at the onset of the transaction when performing pro forma cash flow modeling. For example, if a transaction has a maximum cumulative trading loss cap of \$50 million, DBRS will assume that \$50 million of collateral par is lost at the onset of the transaction. While this constitutes our general guideline, DBRS will endeavor to evaluate the impact of structural features that can have a material economic impact on the creditworthiness of the transaction as a result of proposed trading activities. While the range of these examples is beyond the scope of this document, DBRS will consider approaches that appropriately capture trading gains and losses and, specifically, how these approaches potentially affect the creditworthiness of individual transactions.

Substitution

Proceeds from scheduled principal proceeds or unscheduled principal proceeds may be reinvested, subject to par-for-par matching and maintaining or improving all coverage tests and collateral quality tests, as described in the transaction documents. No substitution is permitted after the reinvestment period. DBRS will ensure that if the transaction suffers impairments that meaningfully impact the ability of the rated liabilities to be paid in full, reinvestment would be terminated. Methods of ensuring the termination of reinvestment include ending the reinvestment period if any OC test is breached, if the amount of ‘CCC’ assets exceeds the maximum, or if a separate par-based ‘reinvestment test’ is used. DBRS will review the governing documents of the transaction to ensure that these representative reinvestment features are appropriately identified and illustrated.



ELIGIBLE INVESTMENTS

Uninvested cash may be invested in eligible investments. Eligible investments should minimize the transaction's exposure to credit, duration and counterparty risk. Eligible investments must mature before the next transaction payment date. If eligible investments reside in accounts where payment could be demanded at any time, such eligible investments should be redeemable on demand at par. Each eligible investment must have an R-1 (high) short-term rating by DBRS or, if not rated by DBRS, the lowest public rating short-term rating (including a one-notch downgrade for on-watch rating) must be equivalent to R-1 (high).

FEE AND EXPENSE ISSUES

No credit will be given to any cash flows distributed below uncapped expenses as described in the transaction documents.

COLLATERAL MANAGER

To the extent reinvestment of collateral is permitted, DBRS will assess the impact of a collateral manager on the rated notes by evaluating the manager's previous performance on rated CDOs (or comparable structured vehicles) and by considering the documents that define the manager's role for the CDO. Such a review of the manager should include an on-site review of operations as well as the depth and breadth of knowledge of the manager, a review of the manager's form ADV (if a U.S. Registered Investment Advisor), review of any potential key-man issues, review of audits (and any irregularities discovered in those audits), and any outstanding issues that might have an impact on the manager's performance (potential staffing changes, legal issues, corporate control issues, conflicts of interest, etc.). Regarding the collateral management agreement, the manager should agree to exercise a degree of care that is no less than that which an institutional manager of international standing would exercise when managing comparable assets. The degree of care should be no less than that which the manager exercises when managing comparable assets for itself, affiliates or third parties.

DBRS will assess a manager's ability to perform should the manager incur financial liability for losses suffered due to any of its actions that are deemed "grossly negligent". Managers should be able to be removed by investors "for cause" including any willful violation or breach of the CMA (without a cure period or "material effect" carve-out), as well as misrepresentations and breaches of warranties (allowing for a cure period or material effect carve-out). A majority and/or supermajority may be able to remove the manager without cause, as well. The manager should not be allowed to vote on its termination or replacement, whether directly or through investments it holds, through investments its affiliates hold, or any accounts managed by the manager. A replacement manager should be identified with a prevailing decision of the controlling class or the trustee.

DBRS will also assess the extent to which management fees should be bifurcated between senior and subordinated fees. The senior fees should not be so small as to impair the manager should the subordinated fees be shut off, nor be small enough that a replacement manager would be difficult to appoint (assuming the replacement manager would be needed when the transaction is in distress, and therefore the subordinated fees are cut off). Lastly, managers should be required to deal with related parties (e.g., hedge funds they may manage) on an arm's-length basis.



Quantitative Methodology

In addition to the qualitative measures discussed above, DBRS utilizes a variety of parameters to measure the likelihood of a CLO tranche paying both interest and principal. The primary drivers are:

- Default probability assumptions on each asset in the collateral pool.
- Recovery assumptions (e.g., loss-given-default) on each asset in the collateral pool.
- Correlation between each asset in the pool.
- Assumptions on reinvestment.
- Interest rates.
- Foreign exchange risk (if applicable).
- Structure (e.g., tranche sizes and the cash flow waterfall).

DBRS forms its credit opinion on individual CLO tranches by comparing the default distribution of the pool of assets to the subordination of the particular CLO tranche. DBRS uses its proprietary model, the CDO Toolbox, to estimate the pool default distribution of the pool. The model utilizes Monte Carlo simulation to generate rating-based percentiles of the pool default distribution (“Rating Based Default Rate Percentiles” or “RBDRPs”) based on a variety of inputs for each asset in the pool (please see Methodology – The CDO Toolbox, April 2007, for a detailed description of the asset input parameters and default probability tables). To determine the level of overcollateralization required, DBRS reviews cash flow modeling analysis performed by the arranger to confirm that DBRS-driven assumptions and inputs are correct and appropriate. In addition, DBRS also performs pro-forma cash flow analysis to verify the arranger’s results. The goal of the analysis is to determine how much of the collateral pool may default before the tranche starts to incur losses (the “Break-Even Default Rate” or “BDR”).

ASSET DEFAULT MODELING

Composition

For new issue transactions (with reinvestment capability), DBRS assumes a worst-case portfolio based on the covenanted concentration limitations. DBRS applies expert judgment to determine a worst-case scenario that is conservative yet rational. For static (or secondary market) transactions, the actual portfolio may be used for rating analysis if there is a reasonable expectation that either reinvestment is unlikely (e.g., nearing the end of the reinvestment period, inability to buy discounted assets) or the current pool is close enough to a worst-case scenario based on the concentration limitations and collateral quality tests of the transaction. If this is not the case, DBRS uses the same approach as a new issue transaction, assuming a worst-case portfolio composition. It should be noted that this methodology is only relevant to pooled transactions. If a transaction has less than 12 obligors or has more than a 50% maximum concentration in any one industry, additional stresses or alternative methodologies may be appropriate.

Rating

For the CDO Toolbox to assign a default probability for each underlying asset, a DBRS-equivalent credit rating needs to be determined. For any obligor that is not rated by DBRS, an approach has been developed that utilizes publically available ratings from other Nationally Recognized Statistical Rating Organizations (“NRSROs”) or External Credit Assessment Institution (“ECAI”) ratings. To generate a DBRS-equivalent rating, DBRS uses the average public rating of each security in the pool. To calculate an average rating, DBRS takes the average default probabilities associated with each public rating on the obligor and uses these in the analysis. For example, if an obligor has a public rating of “Ba1” from Moody’s and a public rating of “BB-” from S&P, DBRS would use the arithmetic average of its “BB (high)” and “BB (low)” default curves. This calculation is automatically performed in the analysis by DBRS’s CDO Toolbox. For obligors on either credit watch negative or outlook negative, DBRS applies a one-notch downgrade to the relevant public rating prior to applying the above criteria.



For non-public ratings from other NRSROs (“external credit estimates”), DBRS may utilize such ratings on a transaction-by-transaction basis. It should be noted that using external credit estimates is only permissible if DBRS receives the data on an ongoing basis from a third party, such as the trustee or the collateral manager. That is to say, these external credit assessments must be published in the monthly trustee report, or received by DBRS from an appropriate third party as described in the transaction documents. In certain transactions, no external ratings information may be available. If the asset pool currently resides on a bank balance sheet, internal risk metrics may be available from the originating institution. On a bank-by-bank basis, DBRS’s U.S. Structured Credit Group will utilize both publically available and proprietary bank data to map the bank’s internal rating scores to DBRS equivalents. The logistics of this process are quite complex, and are beyond the scope of this methodology. For loans with no available rating, DBRS assumes a rating range of CCC (high) to CCC (low), depending upon the performance of the particular obligor and the transaction structure. Unrated assets are capped at a maximum of the following:

- For transactions where the senior-most liability is rated AAA, 20% of the total pool (par weighted).
- For transactions where the senior-most liability is rated AA (high) through A (low), 30% of the total pool (par weighted).
- For transactions where the senior-most liability is rated BBB (high) and below, 40% of the total pool (par weighted).

Diversification

For each asset in the pool, a country code (needed to determine the geographic region) and an industry code are required in order to calculate the asset correlation between corporate obligors. DBRS assumes the following asset correlation assumptions between obligors (as per *The CDO Toolbox*):

- Same region, same industry: 15.00%.
- Same region, different industry: 6.00%.
- Different region, same industry: 11.00%.
- Different region, different industry: 2.00%.

Exposure Amounts

In order to account for the maximum amount of risk that a CLO may take on, DBRS assumes all revolvers and delayed draw loans are immediately drawn down at the inception of the transaction. When determining the exposure term of each asset, DBRS assumes the weighted average life (“WAL”) of the scheduled amortization of the loan (e.g., no credit to prepayments). If the amortization schedule is not available, the arranger may provide a weighted average life number for each asset. If neither piece of information is available, DBRS assumes a bullet to the legal maturity. In order to determine the RBDPRs, a maturity assumption must be made regarding the expected average life of the CLO tranche. For most transactions, DBRS assumes the par-weighted average of the pool WALs. In rare circumstances, it may be prudent to assume a different tranche WAL if the tranche is either very senior or very subordinated, and if there is a large degree of variability in the WALs of each asset.

Outputs

The CDO Toolbox outputs an RBDPR for each rating (from AAA to B (low)). Below are RBDPRs for two sample pools, both with a diversified pool of 60 assets, all maturing in seven years. In the first pool, all assets are rated B and in the second all assets are rated CCC (high).



Rating Based Default Rate Percentiles (RBDRPs) for Sample Pools

Assets Rated B		Assets Rated CCC (high)	
Rating Category	RBDRP	Rating Category	RBDRP
AAA	47.15%	AAA	79.88%
AA (high)	44.90%	AA (high)	78.32%
AA	43.62%	AA	77.18%
AA (low)	43.13%	AA (low)	76.66%
A (high)	42.61%	A (high)	76.24%
A	41.90%	A	75.66%
A (low)	41.03%	A (low)	74.78%
BBB (high)	38.61%	BBB (high)	72.42%
BBB	36.56%	BBB	70.24%
BBB (low)	33.63%	BBB (low)	67.31%
BB (high)	30.29%	BB (high)	63.71%
BB	28.47%	BB	61.61%
BB (low)	26.66%	BB (low)	59.45%
B (high)	25.17%	B (high)	57.45%
B	23.74%	B	55.67%
B (low)	21.29%	B (low)	52.43%

In the B-rated asset pool, the AA RBDRP is 43.62%, while in the CCC (high)-rated pool it is 77.18%. The interpretation is that for the B rated pool, under a AA stress scenario, the pool will suffer defaults of no more than 43.62% over a seven-year time horizon (in this case the assumed tenor based on the average life of the assets). For the pool consisting of CCC (high)-rated assets, the level of expected defaults increases dramatically.

LIABILITY MODELING

Collateral Pools

DBRS requires that collateral be segregated into buckets differentiated by interest rate type (fixed/floating) and seniority (secured (senior), secured (subordinate), unsecured (senior), unsecured (subordinate)). The maximum amount of different rep lines is eight, but in most deals there will be fewer, as it is rare to see fixed-rate secured debt. The amortization schedule for each rep line should be an aggregation of all of the individual asset amortization schedules in that particular rep line. If the entirety of the pool is not yet known, a reasonable assumption may be used. It is imperative that the WAL of the rep lines be equal to the WAL of the pool used in the CDO Toolbox. Lastly, DBRS does not assume reinvestment, as there will likely be no reinvestment occurring under the stressed modeling scenarios (due to the required shut-off of all reinvestment upon the breach of a coverage test).

Default Timing

Collateral default rates are applied based on the following timing patterns. For each of the below scenarios, defaults are assumed to occur evenly over each deal payment period in the year, at the beginning of each payment period. The required default timing scenarios are as follows:

- Front-loaded
 - 40% in year 1 (starting in period 2)
 - 30% in year 2
 - 20% in year 3
 - 10% in year 4



- Back-ended
 - 20% in year 1 (starting in period 2)
 - 30% in year 2
 - 40% in year 3
 - 10% in year 4
- Smooth
 - 30% in year 1 (starting in period 2)
 - 30% in year 2
 - 30% in year 3
 - 10% in year 4

For transactions with either unusually short or long maturity structures, these scenarios are adjusted. DBRS will determine appropriate default patterns on a case-by-case basis for these types of transactions.

Recoveries

Due to the rapid deterioration in the credit markets and an ongoing global recession, DBRS has lowered its loan recovery assumptions by a material amount. In addition to a looming spike in default rates, the high degree of leverage and minimal covenants seen in recent vintage high-yield loans (2006-2008) justify a downshift in recovery assumptions. In addition, DBRS assumes varying recovery rates under different rating scenarios (e.g., to obtain a AAA CLO tranche rating on a CLO tranche, the tranche would have to pass using much lower recovery rates than for a BBB-rated CLO tranche). Each asset within the pool should have a defined DBRS Seniority Categorization according to the four categories below:

- Secured (Senior): Debt that has a first-priority lien against a majority (if not all) of the assets of the obligor (some room allowed for asset-based loans on accounts receivable and inventory).
- Secured (Subordinate): Debt that has a lien against a majority (if not all) of the assets of the obligor, but is subordinated to the Secured (Senior) lenders in the event of a bankruptcy (e.g., second and third lien secured loans)
- Unsecured (Senior): Debt that does not have a lien on any assets, but is senior to all other unsecured debts in a bankruptcy.
- Unsecured (Subordinate): Debt that does not have a lien on any assets, and is subordinated to at least one other class of unsecured debt in the event of a bankruptcy.

Once each asset is defined according to the above definitions, recovery rate assumptions are ascertained as per the below table:

Recovery Rate Assumptions

Liability Rating	Secured (Senior)	Secured (Subordinate)	Unsecured (Senior)	Unsecured (Subordinate)
AAA	44.50%	32.00%	22.00%	10.00%
AA (high) through A (low)	49.50%	34.50%	24.50%	12.50%
BBB (high) and below	54.50%	37.00%	27.00%	15.00%

Note* These numbers are based on publicly available information and DBRS's expert judgment based on past and current performance.
 Note** These recovery assumptions are only applicable to obligors domiciled in the United States. Other jurisdictions will be modeled on a case-by-case basis

In the cash flow modeling, DBRS assumes that recoveries are realized one year after default, with no interest. If the maximum concentration of Secured (Subordinate) assets is greater than 50% or if the maximum concentration of unsecured assets is greater than 30%, additional stresses will need to be applied on a case-by-case basis.



Interest Rates

The arranger will be responsible for generating a forward LIBOR curve (typically, a linear interpolation between the different key rates that make up the U.S. dollar swap curve). DBRS runs three interest rate scenarios – the forward rate, a rising interest rate environment, and a declining interest rate environment. The rising and declining interest rate curves are generated by DBRS via stochastic models which are calibrated on historical data. Please contact DBRS for the most current set of interest rate stresses.

Foreign Exchange

Most CLOs are structured in one currency, so foreign exchange (FX) risk is rarely an issue. When multiple currencies exist in the asset pool, the liability structure of the CLO may be structured to have a natural ‘hedge’ by issuing tranches in each currency of the pool. If DBRS is cognizant of any material FX risks, an appropriate set of scenarios that define FX volatility and default biasing between currency buckets will be identified.

Other Modeling Assumptions

DBRS assumptions for miscellaneous items commonly found in CLO structures:

- Senior expenses assumed to hit the cap (e.g., if senior expenses are capped at \$100,000 per annum, \$25,000 of senior expenses are assumed to occur in each quarterly payment period).
- Any uncapped expenses are assumed to extinguish all remaining cash flows.
- Careful consideration must be given to how the coverage tests are calculated (e.g., haircuts, carry values for defaulted assets, etc.).
- No intra-period reinvestment of interest and principal proceeds (e.g., no income on eligible investments is assumed).

Outputs

For each tranche, nine scenarios are developed (three default patterns times three interest rates). For each scenario, DBRS determines the maximum amount of collateral that may default without the tranche losing any interest or principal (the Break-Even Default Rate or BDR). For AAA-rated tranches, the minimum BDR is used. For all other tranches, the average overall BDR is used.

Sample Break-Even Default Rate (BDR) Outputs for Class A (Rated AAA)

Default Timing	Forward LIBOR	Up LIBOR	Down LIBOR		
Front-Loaded	60.05%	56.54%	58.56%	Maximum	60.05%
Back-Ended	59.42%	56.24%	58.06%	Minimum	56.24%
Smooth	59.80%	56.60%	58.41%	Average	58.19%

For each tranche, a stability cushion is typically calculated, equal to the applicable BDR minus RBDRP. For example, if the collateral pool backing this transaction had a AAA RBDRP of 47.15%, DBRS would calculate the cushion as 56.24% - 47.15% = 9.09%, which is quite ample. DBRS would conclude that this tranche should be rated AAA.



Appendix: DBRS Rating Process

APPLICATION OF THE METHODOLOGY

The following describes the overall process of analyzing a security backed by pools of high-yield corporate credits.

Asset Modeling

- (1) DBRS requests information for each asset in the collateral pool.
- (2) DBRS assigns default probabilities to each asset based on ratings and tenor.
- (3) DBRS assigns asset correlation assumptions to each pair of assets based on industry.
- (4) DBRS generates pool-wide default rates for each rating level (RBDRPs) using the CDO Toolbox Model.

Liability Modeling

- (1) DBRS generates rep lines for the asset pool categorized on interest rate type and seniority.
- (2) DBRS generates a set of scenarios that varies the pattern of defaults and interest rates.
- (3) DBRS models the structural features of the transaction (hedges, waterfall, coverage tests, etc.) in the DBRS Cash Flow Model.
- (4) DBRS calculates the maximum amount of defaults that the tranche can withstand, the break-even default rate (BDR), for each scenario using the DBRS Cash Flow Model.
- (5) For AAA-rated tranches, the minimum BDR is used. For all other ratings, the average across all scenarios is used.



Determining the Rating

DBRS compares the BDR to the set of RBDRPs to determine the appropriate rating (e.g., the maximum RBDRP that is less than the applicable BDR).

Liability Modeling

			Minimum	54.1500%
			Average	56.4414%
Scenario	Interest Rates	Defaults		BDR
1	Forward	Front Loaded		57.2300%
2	Forward	Back Ended		56.3400%
3	Forward	Smooth		55.9800%
4	Rising	Front Loaded		57.4500%
5	Rising	Back Ended		57.6926%
6	Rising	Smooth		57.9200%
7	Declining	Front Loaded		54.1500%
8	Declining	Back Ended		55.3200%
9	Declining	Smooth		55.8900%

Asset Modeling

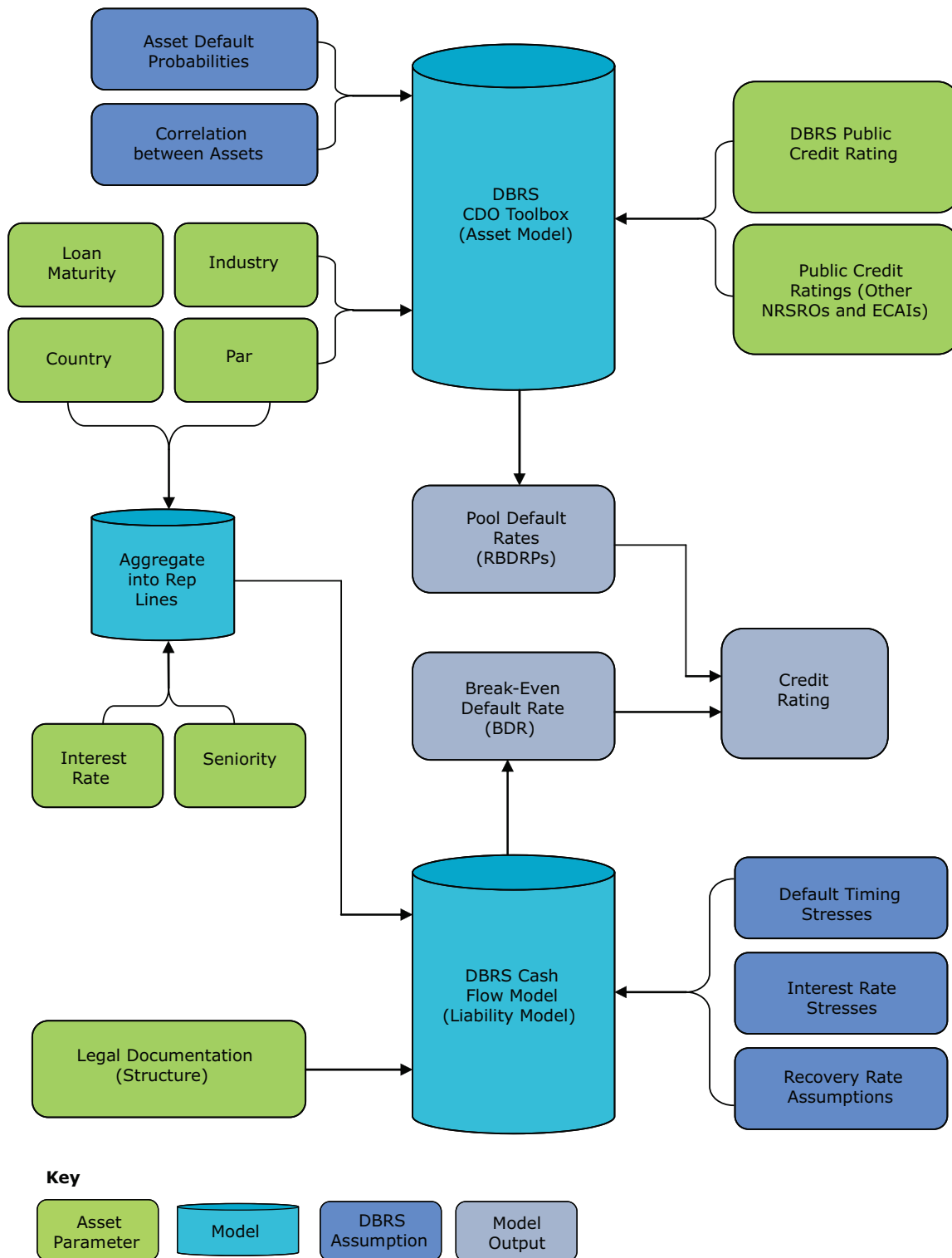
Number of Trials 250,000

Seed 1

Rating Category	RBDRP
AAA	64.9062%
AA (high)	62.7080%
AA	60.7817%
AA (low)	59.5794%
A (high)	58.6926%
A	57.3626%
A (low)	55.2150%
BBB (high)	51.9793%
BBB	48.5993%
BBB (low)	45.0420%
BB (high)	38.9991%
BB	35.8381%
BB (low)	32.9636%
B (high)	29.6472%
B	26.6820%
B (low)	22.6261%



DBRS CLO Rating Process



The CDO Toolbox Model and the DBRS Cash Flow Model are substantial components of the DBRS rating process. A material deviation from the rating implied by both models would be defined as a three-notch rating difference. The quantitative and qualitative factors that could result in a material deviation are included in this methodology.

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Corporate Headquarters

DBRS Tower
181 University Avenue
Suite 700
Toronto, ON M5H 3M7
TEL +1 416 593 5577