MORNINGSTAR | DBRS

Methodology

Rating European Consumer and Commercial Asset-Backed Securitisations

DBRS Morningstar
September 2020

Previous Release
January 2020

Contents

Paolo Conti
Senior Vice President
Head of European ABS
+44 207 855 6627
paolo.conti@dbrsmorningstar.com

Alex Garrod
Senior Vice President
European ABS
+44 207 855 6606
alex.garrod@dbrsmorningstar.com

Kevin Chiang
Senior Vice President
European ABS
+44 207 855 6633
kevin.chiang@dbrsmorningstar.com

Christian Aufsatz
Managing Director
Head of European Structured Finance
+44 207 855 6664
christian.aufsatz@dbrsmorningstar.com

Claire Mezzanotte
Group Managing Director
Head of Global Structured Finance
+1 212 806 3272
claire.mezzanotte@dbrsmorningstar.com

Related Research

For a list of the Structured Finance related methodologies for our principal Structured Finance asset class methodologies that may be used during the rating process, please see the *DBRS Morningstar Global Structured Finance Related Methodologies* document on www.dbrsmorningstar.com. Please note that not every related methodology listed under a principal Structured Finance asset class methodology may be used to rate or monitor an individual structured finance or debt obligation.

Key Updates

For key updates in this methodology, please refer to the press release titled *DBRS Morningstar Publishes Updated Methodology for Rating European Consumer and Commercial Asset-Backed Securitisations* dated 3 September 2020.

Scope and Limitations

A methodology sets forth the key analytical considerations and applicable analytics used when DBRS Morningstar assigns or monitors credit ratings or other opinions. DBRS Morningstar applies approved methodologies in the evaluation of a structured finance transaction or debt obligation. Quantitative and qualitative factors set forth in a methodology or in a combination of methodologies are evaluated by a DBRS Morningstar rating committee or discussion group that exercises analytical judgment and considers the regulatory environment, market standards and customary practices in addition to other factors deemed relevant to the analysis.

As part of the evaluation process, DBRS Morningstar may opine as to whether a sponsor's proposed capital structure supports the assignment of a given rating(s), the loss level(s) the capital structure is able to withstand or the rating level(s) supported by a sponsor's proposed capital structure. Once completed, this process facilitates the assignment of a DBRS Morningstar rating, at a given rating level.

In cases when an applicable methodology does not address one or more elements of a structured finance transaction or obligation, or such element(s) differs from the expectations contemplated when an applicable methodology was approved, DBRS Morningstar may apply analytical judgment in the determination of any related analytical factor, assumption, rating or other opinion. For a methodology that incorporates the use of a predictive model, DBRS Morningstar may also depart from the rating stress(es) implied by the predictive model.

DBRS Morningstar typically expects there to be a substantial likelihood that a reasonable investor or other user of the credit rating(s) would consider a three-notch or more deviation from the rating stress(es) implied by the predictive model to be a significant factor in evaluating the rating(s). When

a rating committee determines a material deviation, DBRS Morningstar discloses the material deviation and its analytical judgment for the material deviation.

Executive Summary

This methodology summarises DBRS Morningstar's rating approach for consumer and commercial asset-backed securitisation transactions originated in one or more European jurisdictions and it is applicable to transactions, securitisation programs, master trusts, or similar structures backed by receivables related to (1) revolving credit lines (e.g., credit cards, overdraft, etc.), (2) consumer loans (sometimes mixed with commercial loans), and (3) consumer and commercial leases (in this methodology generically addressed as asset-backed securitisation transactions or ABS transactions). The underlying pool of receivables typically arises from one or more large homogeneous pool of performing finance contracts. For the avoidance of doubt this methodology does not apply to pools entirely composed of receivables classified as in-arrears, unlikely-to-pay, or nonperforming.

This methodology is also deemed applicable to non-European jurisdictions with equivalent or sufficiently similar legal and regulatory regimes, provided that they do not fall under the scope of any other valid DBRS Morningstar methodology. For instance, DBRS Morningstar deemed this methodology suitable for rating ABS transactions backed by Australian receivables because of the similarity of the legal and regulatory framework currently applicable in the Commonwealth of Australia to that of England and Wales. DBRS Morningstar evaluates on a case-by-case basis whether this methodology applies.

This methodology is meant to provide guidance and should not be interpreted as a strict template. Instead, it should be understood in the context of the dynamic environment in which it is intended to be applied, and the approach described herein may not be equally applicable to all cases. Each asset class, jurisdiction, or legal frameworks exhibits different features, market practices, and product characteristics.

This methodology focuses on historical performance data relevant to the asset class and jurisdiction under consideration, and therefore typically reflects market specificities without the need to introduce jurisdiction-specific adjustments. However, DBRS Morningstar recognises that each ABS transaction may be different, and that special risks and mitigating factors may lead to the different applications, interpretations, or modifications of the criteria set forth in this or other related DBRS Morningstar methodology. An ABS transaction rating analysis may materially deviate from the respective methodology from time to time. Many of the quantitative and qualitative factors that could result in a material methodology deviation are included in the following sections.

DBRS Morningstar reviews the following qualitative and quantitative factors when assigning ratings to ABS transactions:

- Operational risks related to the seller(s), originator(s), and servicer(s);
- Collateral and performance analysis;
- Capital structure and available credit enhancement;
- Cash flow analysis;
- Legal documentation and legal opinions;

- Form and sufficiency of credit enhancement at each assigned rating level.

DBRS Morningstar's review typically comprises an operational risk review of the originator(s) and servicer(s), including their origination, underwriting, and servicing procedures and policies. The operational risk review and assessment provides insight into the manner in which these processes have affected past asset performance and assists in establishing an expectation of future performance of the asset pool to be securitised. DBRS Morningstar reviews consistency with the relevant exhibits within the following methodologies:

- *Operational Risk Assessment for European Structured Finance Originators*, as valid from time to time (or DBRS Morningstar's criteria or methodologies that may replace them); and
- *Operational Risks Assessment for European Structured Finance Servicers*, as valid from time to time (or DBRS Morningstar's criteria or methodologies that may replace them).

As part of the rating analysis, DBRS Morningstar normally reviews the characteristics of the underlying pool of receivables and analyses the originator's historical performance and, in some cases, the performance of assets of a similar nature to project default or charge-off, payment rate or prepayment, and recovery expectations (as may be relevant from time to time, the expected cases) for the underlying pool. DBRS Morningstar then usually applies stresses to the expected cases for each successively higher rating level.

- Consistency with the relevant sections of DBRS Morningstar's *Rating European Structured Finance Transactions Methodology*;
- Consistency with DBRS Morningstar's *Legal Criteria for European Structured Finance Transactions* as valid from time to time (or the DBRS Morningstar criteria or methodology that may replace it); and
- Consistency, where applicable, with DBRS Morningstar's *Derivative Criteria for European Structured Finance Transactions* as valid from time to time (or the DBRS Morningstar criteria or methodology that may replace it).

For each assigned rating, DBRS Morningstar analyses the transaction structure under various stress scenarios to determine the ability of the notes issuer to repay investors in accordance with the terms of the transaction.

Collateral Analysis

Historical Data

As part of the process to rate ABS transactions[1], DBRS Morningstar analyses the historical performance data provided by originators (or sponsoring entities) with respect to their own originated assets or identifiable and homogeneous subsets of them. The purpose of the analysis is to assess certain expected performance metrics that may vary depending on the asset class and the jurisdiction.

When applicable, DBRS Morningstar also considers an originator's corporate history and experience together with its position in the market segments in which it is active, in order to adjust the assessment of the relevant performance metrics in the context of the analysed market segment. Usually, DBRS Morningstar compares and/or supplements originator's data series to comparable

1. This methodology unless otherwise stated should be understood to apply similarly to loans, leases, credit cards and to any other relevant form of financing.

data series (e.g., public transaction performance, peers' data available to DBRS Morningstar, publicly available market or benchmark data, etc.).

The data set typically analysed by DBRS Morningstar is similar across the various asset classes comprised under the umbrella of this methodology and includes:

- Static and dynamic loss data;
- Static and dynamic recovery analysis;
- Static and dynamic payment, prepayment, and/or early settlement analysis; and
- Dynamic delinquency analysis.

Preferably, DBRS Morningstar expects issuers to provide data and information, as described herein that cover performance during at least one economic cycle.

Static and Dynamic Pool Data

For transactions backed by a granular pool of term loans or leases[2] DBRS Morningstar's historical data analysis focuses on static data per vintages from discrete and homogenous pools, originated over a relatively short period of time[3]. Ideally, these time periods should be monthly or at least quarterly and reflect both principal amounts and number of accounts/contracts.

DBRS Morningstar elects to separately review static cumulative defaults (or gross losses) per vintages of origination and their related static recovery rate per vintages of default classification. Static analysis of net losses, in conjunction with recoveries, represents a viable alternative provided that recognition of net losses takes place within a short and well-defined time frame, typically no more than six months. DBRS Morningstar prefers static vintage recovery data to be provided separately to better understand the dynamics of the recovery process and the timing of recovery before write-off. For example, if only static cumulative net loss data was reviewed, periods of elevated defaults could be masked by strong recovery performances that may be incompatible with some rating scenarios. When only net loss data is available, DBRS Morningstar typically estimates defaults by assuming recovery inputs.

For cases where adequate static vintage data is unavailable or limited, DBRS Morningstar may consider using managed portfolio (dynamic) data as an estimation, although this approach has certain limitations. Portfolio performance measures, such as defaults, write-offs, and recoveries, may be concealed by a growing stock of loans during portfolio expansion: while it is possible to adjust the calculations to address this, these adjustments do not provide any insight into the timing of defaults and losses, which may be an important component of DBRS Morningstar analysis. In addition, using only aggregate portfolio information makes it difficult to adjust for changes in asset composition, and the amount and timing of recoveries can also be obscured. DBRS Morningstar may, therefore, be unable to refine its default and loss projections, and may consider alternative data, such as the performance of similarly originated assets, within the same jurisdiction.

2. In this methodology term loans or leases mean finance contracts (including operating leases) that are fully drawn, with a specified legal maturity date and a well-defined amortisation schedule (including repayment of the full amount by a maturity date). An amortisation schedule could be defined in terms of target or minimum principal requirement. Credit cards do not fall under this definition as the concept of minimum payment does not allow for the derivation of a defined maturity date.
3. Static vintage data presents the evolution on a cumulative basis of specific, well-defined events (e.g., prepayment, early settlement and scheduled payment, termination or other defined form of default, or write-off, etc.) over a uniform portion of receivables each originated in a specific time interval (e.g., a calendar month or quarter).

For pools of credit cards and/or revolving lines, DBRS Morningstar focuses on dynamic arrear and default analysis as well as dynamic payment information and yield as opposed to static data analysis. Although the static default analysis[4] is still relevant, DBRS Morningstar determines its stresses on a dynamic basis due to the nature of the underlying contracts that are not repayable according to a fixed schedule or target and are, on the contrary, subject to further draws. DBRS Morningstar typically analyses portfolio delinquencies by monthly or, at least, quarterly arrears buckets to assess roll rates to default together with dynamic payment or prepayment performance. Static recovery analysis is also deemed relevant to incorporate strong recovery performance (if any).

For granular commercial lease contracts, DBRS Morningstar usually assesses its stresses in a similar way as for consumer loans and leases; however, when the key risk is deemed to be enterprise risk, DBRS Morningstar usually applies its *Rating CLOs Backed by Loans to European SMEs* methodology for the purpose of the gross loss stress determination and, thus, the data requests of the aforementioned methodology may apply. Static recovery analysis is still applied to assess strong and consistent recoveries and related assumptions, but the approach may vary depending on the structure and the nature of the receivables, particularly if residual value is or is not applicable. DBRS Morningstar also considers the unsecured recovery levels specified in its *Rating CLOs Backed by Loans to European SMEs* methodology.

Typically, DBRS Morningstar receives a minimum of five years of seasoned performance history to perform a rating analysis, but additional history may be needed during prolonged benign periods to include the negative part of the latest business cycle.[5] The age of a vintage considered seasoned typically depends on the finance product and the repayment characteristics (e.g., original term, average life, balloon repayments, etc.). In cases where originator-specific data is limited or unavailable, DBRS Morningstar may use alternative data from different relevant sources and benchmark its stresses against such data. DBRS Morningstar may decline to rate ABS transactions if data is not sufficient or relevant performance history is not available.

Both static and dynamic pool data should be presented in such a way that the default definition is consistently applied[6] and defaults are identified in a manner that is consistent or at least compatible with the definition of a defaulted receivable in the transaction documentation so that cash flow stresses can be constructed in a way that properly addresses the collateral's loss profile.

DBRS Morningstar may deem representative data presented according to different default definitions provided that the definition is consistently applied to defaults, arrears, and recoveries, so that the net loss obtained would be the same.

4. The concept of principal amount may be misleading for credit cards and revolving lines where repayments draws are possible throughout the life of the account. Static default analysis is thus more relevant when considering the number of accounts.
5. DBRS Morningstar may consider rating transactions with limited data history provided that relevant alternative information of satisfactory nature and quality exist in form and quantity sufficient to form an opinion on the expected credit behaviour of the underlying pool. Such circumstances are considered on a case-by-case basis.
6. The same definition should be applied to the construction of arrears, defaults (static and dynamic), and recovery analysis.

Pool Characteristics

Typically, DBRS Morningstar receives stratification tables and/or line-by-line details that provide a summary of the relevant pool's characteristics. DBRS Morningstar analyses the characteristics of the assets being securitised on an aggregate basis, but loan or lease level analysis is often relevant, for instance, if there are concentration risks and/or a reliance on cash flows resulting from the sale of an asset. DBRS Morningstar usually reviews any individual obligors or assets that represent an unusually large proportion of the pool.

In a typical granular ABS transaction, DBRS Morningstar may rely on pool stratifications and a review of the asset pool on a line-by-line basis may not be required. Where a securitised pool is composed of distinct sub-pools that are themselves homogeneous, but have exhibited different credit behaviour, DBRS Morningstar normally analyses each of the sub-pools separately.

Asset deterioration may be affected by the existence of revolving, warehousing, or prefunding periods, since the characteristics of the underlying asset pool may change due to changes in origination or market standards, the evolution of economic cycles, and other factors.

In general, the characteristics of the static pool default, recovery, and net loss should mirror the characteristics of the securitised pool as closely as possible. However, DBRS Morningstar recognises that pools with similar summary characteristics can demonstrate significantly different performance. For instance, two portfolios may have identical remaining terms to maturity but the underlying stratifications may indicate that one pool has a higher share of longer-term loans, which are likely to have higher losses. For this reason, it is important that issuers have the reporting capability to provide static pool performance data that can be stratified by various attributes, e.g., credit score, finance product type, origination channel, customer type, etc., and, specifically for leases and loans, contract original term, amortisation type, financed assets, etc. In cases where the historical performance data provided is sufficiently detailed, DBRS Morningstar can refine its asset analysis by using the data to determine an expected net loss for each distinct component of the pool and then use this information to develop a weighted-average (WA) expected net loss for the securitised pool based on the relative contribution of each segment.

For some granular commercial lease contracts DBRS Morningstar may consider pool data as specified in its *Rating CLOs Backed by Loans to European SMEs* methodology.

Dynamic Portfolios

Some ABS transactions may be structured in a way that all or part of the funds collected, and/or additional proceeds funded on or before issuance (e.g., prefunding periods) or to be funded by noteholders, sponsors, or other parties (e.g., ramp-up periods) may be applied to purchase additional pools of similar receivables after the issuance of the notes

The reinvestment of collections and/or ramp-up periods typically prevents or reduces the amortisation of a transaction and extends the expected life of the securities to be rated.

Pool performance risks are generally higher for transactions including revolving, reinvestment, or warehousing periods because of the potential deterioration and the increased risk of an economic

downturn occurring during the life of the transaction (naturally prolonged by the reinvestment or ramp-up of the portfolio). Furthermore, assignment of additional receivables may alter the characteristics of the portfolio backing the securities to be rated, for instance, by not only modifying the balance of the distinct homogeneous sub-components but also by introducing additional risk factors such as negative carry, excess spread leakage, or asset-liability mismatch. On a lesser scale, the capacity retained by originators, servicers, or sponsors to grant variations to the financial terms of the underlying contract may nonetheless alter the characteristics of the portfolio.

Within the transaction's legal documents, restricting conditions for further assignments included in a revolving transaction or to permitted variations help to establish a threshold for asset quality and are an important part of maintaining pool consistency. Such conditions are usually in the form of eligibility criteria, static or dynamic thresholds, and concentration or performance limits, but also take the form of triggers related to transaction counterparties or structural events (e.g., insolvencies, termination of mandates, or undercollateralisation, reserves not at par). DBRS Morningstar usually addresses the lack of such restrictions assuming adverse selection, although DBRS Morningstar may, to some extent, rely on the consistency and continuity of origination policies.

Revolving or ramp-up periods may be beneficial to some transactions since they can reduce negative carry, provide for an efficient use of collections, or contribute towards structural features such as triggers based on cumulative defaults (typical in sequential/pro rata structures). However, DBRS Morningstar does not usually give credit to potential benefits and typically analyses a transaction in its amortisation phase starting worse than initial portfolio and structural data.

DBRS Morningstar considers credit enhancement[7] and credit losses as the key factors in its rating analysis and considers restrictions applicable to further assignments and permitted variations to establish conservative credit enhancement conditions and loss parameters applicable in the amortisation phase. When revolving or similar phases are envisaged, DBRS Morningstar considers defaults and/or losses that might occur before the amortisation phase in accordance with its expectations based on this methodology and the triggers and/or restrictions applicable. In cases where defaults may be advantageous to specific rated securities (e.g., residual value transactions, sequential/pro rata structures) the benefit from defaults before amortisation would be limited to a reasonable expectation, typically in conjunction with back-loaded default timings, and to the extent that reliance on this trigger does not materially affect the rating.

Secured Financing

Some finance products such as certain auto loans and leases benefit from a security interest over assets that are typically purchased with debt or leased-through contracts. The ABS transaction may benefit from such security interest both as an incentive to pay and as a source of recovery through the sale of the asset. This is typically the case for auto leases and certain auto loans. The ABS transaction may also be exposed to additional risks through this security interest, such as residual value (RV) risk (which is treated in details in the following sections) and DBRS Morningstar considers the nature of the receivables and the structure of the assignment.

7. Credit enhancement may be defined according to a variety of criteria; here it is meant to address the quantity of assets (including cash or other reserves) generating funds that can be applied at any point to pay the securities to be rated.

Auto loans that benefit from a valid and enforceable claim over a motor vehicle typically show high and prompt recoveries. Auto lease contracts and lease contracts in general include RV, which isolates the value of the asset at maturity. Lease contracts may regulate the exchange of RV in various ways including mandatory settlement at a predetermined price, settlement on optional basis (usually a financial lease contract), or restitution of the vehicle (usually an operating lease contract). Typically, when settlement is envisaged at a known cash price the contract does not include RV risk although it may include RV. Auto loans do not usually include RV risk and when RV is included (usually as a balloon settlement at the end of the contract) the final payment is not optional and the amount is contractually set; however, some auto loans include RV similar to a financial lease contract according to a practice that is popular in the auto sector.

RV may or may not be securitised but, if securitised, it may include RV risk, which is addressed in the following sections of this methodology for autos (see page 24).

Ideally, when RV is included, DBRS Morningstar prefers to review RV information at loan or lease level although in some cases it may rely on portfolio information. When the securitisation includes RV risk, DBRS Morningstar usually receives RV historical performance as specified in the following sections.

Italian Salary-Assignment Loans

This asset class is specific to Italy and although it is sometimes identified as an unsecured personal loan, the typical loan benefits from several forms of protection. The product is specifically addressed in this methodology in the "Italian Salary Assignment Loans" section.

Static Default Analysis

As outlined above, historical performance data may be provided on a dynamic or static basis, if the portfolio evolution is observed on a managed portfolio basis, or if various vintages are analysed separately. In this section, the static default analysis typically conducted by DBRS Morningstar is outlined.

Asset characteristics vary across jurisdictions, primarily as a result of different legal and regulatory frameworks, but also because of differing market practices and borrower behaviour. These different frameworks also result in different rights for creditors and lessors, as well as different optimal workout strategies for impaired assets. DBRS Morningstar typically reviews the jurisdictional factors to assess whether historical performance data remains predictive of future performance and whether there is a need to introduce further jurisdiction-specific adjustments.

The expected cumulative net loss rate of a given pool of receivables is DBRS Morningstar's expected cumulative default rate net of relevant recoveries. Typically, the relationship can be expressed as follows

$$N = D\,(1 - R)$$

where N means the pool cumulative net loss rate, typically, expressed as a fraction or a percentage between 0% and 100%, D means the pool cumulative default rate and it is has to be a fraction or a percentage between 0% and 100%, and R means the recovery rate based on the default definition (and (1 - R) = loss given default).

In establishing the expected cumulative default rate estimate and the recovery rate for an ABS transaction, DBRS Morningstar reviews the historical (static) performance data provided for assets with the same or similar characteristics to reach an expected net loss figure. The approach is substantially similar when DBRS Morningstar receives data for net losses and defaults, or net losses and recoveries.

DBRS Morningstar uses the historical static information as a foundation to construct an estimate of the expected cumulative default rate and related recoveries for the analysed pool considering factors such as the economic environment that existed as the pools seasoned and any changes in origination or servicing practices that might result in markedly different performance metrics across different vintages. Various vintages may be weighted or otherwise considered depending on their respective relevance.

Ideally, historical data should be sourced by the same originator of the securitised pool; however, DBRS Morningstar may also contrast the performance metrics with those of other originators operating in the same markets.

Extrapolating Static Vintages

When sufficient data is available, DBRS Morningstar may have to extrapolate or project recent vintages in order to reach the desired term and cover the expected life of the ABS transaction. The relevant term depends on a number of factors, including but not limited to the securitised pool characteristics, the repayment characteristics and the general framework as well as the ABS transaction structure.

DBRS Morningstar typically develops a vintage-timing curve for the collateral pool or each sub-pool or for other discrete categories representative of key portfolio characteristics and uses these curves to forecast vintages that have not yet completed their life cycle or have not yet reached sufficient maturity. Typically, a suitable curve is a double exponential function that fits to the available vintages, but DBRS Morningstar may consider alternative options, especially if the actual behaviour appears different.

There are a number of factors that DBRS Morningstar takes into consideration when extrapolating losses for pools, including:

- The extrapolation technique may magnify performance anomalies;
- Adequate adjustments should be made to properly account for changes in pool composition;
- Vintages covering a small number of observations may not be statistically significant; and
- Increased vintage frequency usually provides useful insight but sometimes introduces variability.

Therefore, DBRS Morningstar only extrapolates static pools that exhibit significant performance history compared to the asset life cycle (typically a minimum of 12 months) and checks that the pool has similar characteristics as the historical vintage performance data.

The relevant maturity is typically set at the portfolio weighted-average maximum term but adjustment may be applied in some cases: for instance, when the available history is short or when there are discrepancies between the portfolio weighted-average term and observed behaviour of the vintages.

Expected Loss Parameters

Provided that available data is sufficient, DBRS Morningstar analyses the relevant historical static vintage data to derive the expected loss parameters consisting of: the expected cumulative default rate, the recovery rate, and the expected cumulative net loss.

Typically, the rating analysis warrants that both the expected cumulative default rate and the recovery rate upon default can be separately determined and, thus, the expected net loss is derived. When separate cumulative default and recovery vintages are available in separate data sets, the expectation is typically derived from the analysis of the series of the extrapolated vintage values.

The expected loss parameters are derived by applying quantitative and qualitative techniques and by considering qualitative aspects, depending on the data and other factors. Since each vintage will perform somewhat differently, static analysis can also be used to estimate to what extent performance data has been deviating from the average. The analysis of past net loss volatility is another important step in DBRS Morningstar's rating analysis, thus expected loss parameters may incorporate a stress based on past volatility.

The Approach Based on the Volatility Stress

DBRS Morningstar examines the inherent volatility and the evolution of the performance of the assets. To assist in this process, DBRS Morningstar uses various statistical techniques to assess the expected asset performance.

The typical technique considers mathematical expectation and its related variance applicable to the relevant set of extrapolated vintages. Usually, weighted average is preferred to the simple average for the expected default rate and the recovery rate. The expected loss parameters are sometimes expressed as a combination of mathematical expectation and its related variance as follows:

$$E + h\sigma$$

where E means the chosen mathematical expectation of series of extrapolated vintages and hσ is an adjustment factor: σ means the standard deviation associated with the expectation, and h is a multiplying factor, typically an integer number or a small fraction (e.g., 0, ±¼, ±½, ±1, ±2). The approach to recoveries is similar (assuming that recovery data are available in a suitable form), although the adjustment is likely to entail the use of a negative value of h.

The expected cumulative default (or the expected cumulative net loss) may incorporate the adjustment factor usually defined as a positive number. The stress factor is typically a negative number for recoveries so that the expected loss parameters may not reflect the historical data's mean performance, but reflect potential uncertainty related to the vintage data.

The adjustment factor and, in general the adjustments applied to and included in the expected loss parameters, depend on both qualitative and quantitative factors, including:

- The amount and relevance of data available.
- The economic cycle covered in the available history, and whether provided history is otherwise representative of an extremely benign or adverse phase of the cycle.
- The unevenness of the vintage curves[8].
- The presence of concentration, spikes, and point-in-time events (such as policy changes or portfolio sales).
- Positive or negative performance trends.
- Corporate events and changes highlighted during an operational review.
- Originator-driven phenomena such as high prepayments, renegotiations, moratoria, and competition by peer lenders.
- The replenishment or replacement of receivables and changes to the pool composition that may challenge reliance on consistency of the origination and underwriting policies.

DBRS Morningstar may adjust its expected loss parameters by applying alternative techniques, including qualitative considerations.

Other factors may be relevant to the definition of the overall stresses applicable to a pool, which may or may not contribute to the adjustments to the expected loss parameters[9]. Other factors include the following:

- Consistency over time of the origination in terms of pool characteristics (e.g., contract or customer type), lender attitude, and business model (e.g., origination policies, target, or objective) or corporate structure (e.g., acquisitions, mergers, or other corporate events, etc.);
- Collateralisation of the receivable payments (e.g., a security interest in an asset or a deposit);
- Position in the economic cycle;
- Timing of recovery and its variability;
- Consistency of the legal framework; and
- The default definition used.

8. The projection approach is designed to be applied to regular and smooth vintages. When it is applied to uneven vintages, it may produce artificially high parameters. In such instances, DBRS Morningstar may consider lower stress factors.
9. As covered herein, DBRS Morningstar also applies stresses in the form of multipliers and recovery haircut; thus, some factors, when not covered under the expected cases, may be applied in the form of higher multipliers.

In some cases, DBRS Morningstar introduces stresses depending on the scenario being assessed. Such scenarios usually reflect different positions in the economic cycle, which represent an important driver of the observed vintage volatility. In such circumstances, DBRS Morningstar may reduce or remove the volatility stress to avoid double counting of similar stress factors. This is typical in cases where, for instance, recoveries are heavily reduced on scenario-based assumptions (e.g., some auto loans, Italian salary-assignment loans, etc.).

Dynamic Data Analysis

DBRS Morningstar analyses dynamic data both to reinforce and verify its analysis of static data and to derive direct measures such as prepayments or arrears.

Some ABS transactions are backed by receivables related to revolving lines (such as credit cards), and the concept of cumulative default rate or cumulative net loss on a static basis is not indicative of the pool performance. Typically, static analysis is less relevant within DBRS Morningstar's cash flow analysis as each credit line is not usually repayable in accordance with an agreed plan, but on more loosely defined principles and the outstanding balance may increase (rather than reduce) due to further draw-downs.

Due to the revolving nature, static data cannot be aggregated in the same way and dynamic losses are deemed more significant.

However, DBRS Morningstar still endeavours to evaluate vintage performance using dynamic metrics such as an annualised charge-off, yield rates, and monthly payment rates for revolving facilities.

Rating Stresses

After establishing the expected loss parameters for a portfolio, DBRS Morningstar normally applies various stresses to assess for each tranche of debt issued against the receivables the default and recovery levels[10] and the other known components that can affect the amount and timing of the cash flow that each tranche of debt should be able to withstand at a specific rating level (the stresses). The stresses vary depending on several factors including the rating level being considered; other factors that may affect the stresses are: the asset characteristics, external support associated with limited financial strength in lower rating scenarios, the legal and regulatory framework, etc.

This methodology focuses on the ranges of stress levels DBRS Morningstar typically applies in relation to credit losses and other additional losses that are strictly related to some consumer or commercial products (such as, for instance, auto loan/lease RV loss or extension loss related to Italian salary-assignment loans) but it does not focus on the approach to other specific stresses (e.g., legal risk, counterparty risk, interest rate risk, foreign exchange risk, market risk) that may be covered in other DBRS Morningstar rating methodologies. Details of the relevant consumer and commercial ABS collateral stresses are described in the asset-specific sections of this methodology.

10. Stresses primarily involve credit risk and are directly linked to default and recoveries, but additional losses can be applicable including, but not limited to, residual value (RV) losses, collection shortfalls, etc.

The DBRS Morningstar approach aims to define an array of rating-specific stresses, including, but not limited to, the stresses detailed in this methodology. Such stresses are considered together with any relevant mitigating factor and applied to the transaction financial structure to verify that stressed cash flows are sufficient to repay investors in accordance with the relevant terms of investment.

DBRS Morningstar recognises that each ABS transaction may be different and that special risks/mitigating factors may lead to the modification of some of the criteria set forth in this methodology. As such, transaction ratings may materially deviate from the methods described herein from time to time.

Term Contracts

Term loan or lease contracts and other similar contracts falling under the scope of this methodology, include secured and unsecured consumer loans and leases (such as auto loans and auto leases, personal loans, and other-purpose loans disbursed for the purchase of goods or services) but exclude credit cards and revolving lines that are analysed in this methodology on page 24.

Real estate-related consumer loans (although not necessarily backed by mortgages) may not be in the scope of this methodology and are the object of other specific methodologies.

When evaluating a pool of term contracts, DBRS Morningstar typically considers the following loan characteristics:

- Contract Terms of Repayment:
  For the most part, term contracts are level-pay instalment receivables payable over a predetermined term. Some contracts (particularly auto loan contracts) or lease contracts are structured as balloon contracts (discussed in more detail in the following section). Balloon contracts have a large payment at maturity but may or may not have substantial residual value risk.

- Original Term and Remaining Term to Maturity
  The original term of relevant contracts may vary depending on the product type, the borrower type, and the lending strategy of the originator(s). For example, a consumer loan usually has an original term up to 10 years but an auto loan contract rarely exceeds a seven-year term (shorter for balloon loans). In many cases, longer-term loans are underwritten to more budget-constrained borrowers and may carry greater default risk than their shorter-term counterparts. However, the elevated credit risk may be offset by more restrictive underwriting policies.

- Financing Rate
  The contract yield charged on a loan is a function of the market environment, prevailing interest rates, and the underwriter's perception of risk of default by the obligor. For floating-rate loans the yield is also influenced by the assumed interest rate development.

Cumulative Default Projections

Usually, DBRS Morningstar establishes the expected cumulative default rate and the recovery rate of a pool of term contracts through a static default analysis as referenced in the previous sections.

DBRS Morningstar reviews the characteristics of the collateral pool separately considering the significant categories to check that the collateral characteristics of the securitised pool are similar to the collateral characteristics of the static pools in the data set. DBRS Morningstar may also consider parameters such as a credit bureau score or the issuer's internal credit score, new versus used vehicles, and term to maturity.

DBRS Morningstar typically defines expected loss parameters by applying a stress factor. However, the described approach based on static vintages is especially effective for consistent and granular pools but may be less adequate for assessing losses within a concentrated portfolio of corporate customers[11]. Expected loss parameters are usually defined for relevant pool components depending on the available information and combined to determine a transaction-specific expected default rate and recovery rate. However, in some cases, different portions of collateral may have to be treated and analysed separately (e.g., concentrated portion of the pool or longer terms as opposed to very short terms).

For some financing products, seasoned cohorts experience lower future losses because defaults tend to occur early in cohort lives. To determine losses for these pools, DBRS Morningstar may estimate a whole-life loss timing curve for a cohort based on historical whole-life results for similar obligors, type of loan, and jurisdiction. The above analysis assumes stable economic risk factors and low or predictable level of prepayments or early settlement; in fact, anticipated economic deterioration or volatile prepayments may force reconsideration of prior seasoning assumptions.

DBRS Morningstar does not normally give any seasoning credit to revolving pools, since the WA seasoning of the underlying collateral may change during the revolving period.

Recoveries

It is optimal to analyse a transaction by separating default and recovery data as opposed to net loss. This distinction is especially relevant when the factors that influence defaults can be different than those determining recovery levels (especially collateral values). For example, automobile values as collateral can be influenced by many variables that may be unrelated to the default of obligors, such as new vehicle pricing and incentive policies of the auto manufacturers that favour new cars over used cars, body-style changes, product line discontinuances, fuel prices, regulatory changes, and overall consumer tastes and preferences.

The recovery rate can also be derived by comparison between historical gross and net loss data, although when there is significant volatility observed between static vintages the result is more difficult to determine.

11. As previously stated, this methodology is not specifically designed for concentrated pools, where other DBRS Morningstar methodologies may be applicable. However, reasonable concentrations or risk concentrations may be addressed within the framework of this methodology.

DBRS Morningstar may define an expected recovery assumption but apply rating-specific recovery assumptions. This is typically true if recoveries are influenced by factors that vary upon different rating scenarios or are directly related to debt sales or the market value decline of an asset.

Similar to its approach to expected cumulative default rate, DBRS Morningstar evaluates an originator's historical recovery experience as well as third-party data relating to the relevant collateral market to develop recovery estimates. The recovery rate used may capture the risk of volatility in recovery values and timing as summarised in previous sections and, when applied to stressed base assumptions, recoveries may not warrant additional adjustments or reductions related to high rating scenarios.

Cumulative Net Loss

The loss upon default rate (one minus the recovery rate) is calculated and then applied to the expected default to arrive at the recovery-adjusted expected net loss.

However, if net loss data is provided and separate recovery data is not available, the expected default would be calculated based on the static loss analysis described earlier in this methodology.

Default Stress Multiples and Rating-Specific Recoveries

DBRS Morningstar applies core multiples to its expected cumulative default rate to determine to what extent the cash flows produced from the underlying receivables may reduce because of defaults in a deteriorating scenario. The stressed assumptions, reflecting the cumulative defaults and the recovery rate compatible with a rating scenario, are thus applied to test features of a structure in accordance with the cash flow analysis approach.

DBRS Morningstar applies core multiples that typically belong to specific ranges defined for each rating level as highlighted in this section. However, DBRS Morningstar may also apply additional stresses or recognise credit support that affect each rating scenario in different measures and incorporate the stresses by adjusting the multiples (adjusted multiples). The adjusted multiples may fall outside the ranges defined for the core multiples due to the adjustments applied.

The multiples aim to emulate the increasingly reduced or otherwise unfavourable cash flow of the receivable pool to probabilities equal to those of the DBRS Morningstar expected default rates.

The indicative ranges in Table 1 (below) are referred to core multiples and may be lower or higher to the extent that DBRS Morningstar has a particularly positive or negative view of qualitative factors or other uncertainties not captured in historical data that could influence transaction performance.

Table 1

Core Multiple of Expected Cumulative Default Rate	AAA	AA	A	BBB	BB
Middle Level Core Multiple	5	3.5	2.5	1.75	1.35
High Level Core Multiple	6	4	3	2	1.5
Low Level Core Multiple	4	3	2	1.5	1.2

Multiples applicable to "high" and "low" notches between middle ratings may be derived by interpolation (usually linear interpolation).

The core multiple ranges above are representative but not prescriptive of those that DBRS Morningstar applies to the expected gross loss that reduce collateral pool collections in term contract transactions.

Typically, DBRS Morningstar starts with the middle level core multipliers and moves toward higher or lower multiples based on qualitative and quantitative factors. Some quantitative or qualitative factors may already be included in the adjustments applied to the expected loss parameters and such factors would therefore not be reflected in higher or lower multiplier choice. Some factors typically included as adjustments to the expected default rate are outlined in previous sections. However, DBRS Morningstar may elect to adjust the multipliers based on some of these factors rather than the expected loss parameters. The alternative approaches are not typically equivalent for all rating levels, thus DBRS Morningstar may apply different approaches to different proposals.

The position in the business cycle is perhaps the only factor that may induce adjustments both to the expected loss parameters and to the multiples.

The expected loss parameters and the combination of the relevant factors ultimately result in the multiple used to assess the amount of loss coverage for each tranche of notes. The factors specifically relevant for the definition of multiples typically include:

- Sovereign risk[12].
- The industry outlook and the position of the sponsor within the market[13].
- The position in the economic cycle or local market, which, for instance, may be exhibited by unusually low expected losses.
- The findings of an operational risk assessment from an originator and/or servicer perspective.
- Operating environment or macroeconomic conditions, which have not been reflected in the determination of the loss parameters including the stress factor.
- Concentration of risk (not addressed otherwise) or exposure to a sector (e.g., geographical, industry or business sector, etc.).

The absolute level of a pool's cumulative expected defaults is capped at 100%; thus, lower multipliers may be chosen in cases of pools with unusually high expected cumulative defaults.

If all or part of the term contracts are granted to corporate customers (i.e., large, medium, or small businesses but excluding individuals) and/or the pool is not considered granular, DBRS Morningstar may consider applying its *Rating CLOs Backed by Loans to European SMEs* methodology to define the level of stress applicable for the entirety or for part of a pool in respect of a rating scenario. The aforementioned DBRS Morningstar methodology contains a specific approach to defining

12. DBRS Morningstar may apply sovereign stresses in accordance with its sovereign approach. See also "Appendix C: The Impact of Sovereign Ratings on Other DBRS Morningstar Credit Ratings" of DBRS Morningstar's "Global Methodology for Rating Sovereign Governments" methodology (www.dbrsmorningstar.com).

13. The industry business model and/or the position of the lender within the local or global market may hide or enhance risk factors that cannot be properly reflected in the available data (e.g., refinancing risk).

recoveries. Accordingly, in such circumstances, DBRS Morningstar may apply the approaches discussed herein.

Multipliers are typically applied to the expected cumulative default rate and the rating-specific cumulative net loss is affected because of a higher default rate. However, different recovery rates by rating scenario may be defined as highlighted in previous sections.

Concentration of Risk

DBRS Morningstar deems this methodology suitable to analyse pools that show some degree of borrower or segmental concentration. Concentration refers to both the borrower (borrower, geography, sector, etc.) and the cash flows when a substantial part of the cash flows may be impaired by an event or events, which are not otherwise mitigated.

The concentration is typically addressed by isolating the concentrated portion of the pool or of the cash flows. In this case, the nonconcentrated granular portion of the pool is reviewed in accordance with the analysis described herein, with an adjustment to the stressed scenarios to factor in risks related to the concentrated positions.

For example, concentration of risk from or around a single name (typically a sovereign institution, an insurance company, or a banking institution or group performing several roles or providing some form of financial support) may create a certain degree of dependence upon the credit standing of one or few entities, in the absence of mitigating factors such as downgrade provisions, reserves or collateral, regulations, etc.

DBRS Morningstar analyses the concentrations and assesses (when possible) if the structure can support additional stresses that may vary depending on the following:

- The availability of a DBRS Morningstar internal assessment for the relevant entities;
- The likelihood that the financial support from the relevant party continues over a specified time horizon compared to the likelihood of repayment of the notes commensurate with the rating of notes;
- The level and type of concentration; and
- The mitigating measures in place, such as transaction structural features or regulatory requirement.

If the concentration relates to a counterparty with a rating or financial strength comparable to the rating to be assigned to the securities, the ratings assessed may be linked to the rating or the credit standing of the party and if such linkage induces a substantial uplift, the linkage will be disclosed.

Cash Flow Analysis

DBRS Morningstar typically uses a cash flow engine that shows the cash flows from the receivable pool under rating-specific stresses as they pass through the transaction waterfall, giving effect to credit enhancement and performance triggers. These cash flows are then compared with the payment requirements of the notes within the transaction.

The cash flows are run on a number of scenarios defined by various assumptions including:

- The cumulative defaults affecting the collateral during its amortisation;
- The pattern that determines the default distribution;
- The recovery from defaults;
- The recovery timing and the final write-off;
- Changes in the interest rate environment;
- Changes in foreign exchange rate (if applicable);
- The collateral yield;
- The costs of the issuer (including fixed costs, management costs, and hedging costs); and
- Prepayments.

Other factors may affect the cash flows such as prepayment losses or loss of collections, and the effect may not be the same for all rating levels.

DBRS Morningstar also considers arrears, payment holidays, and contract extension, which may affect collection volumes and the timing of cash flows available to pay the securities.

Default Timing

DBRS Morningstar analyses the historical performance data to develop a default pattern that is expected to be observed during the life of the transaction. Default timing is an important component of the cash flow analysis because it generally affects the cash flows and/or the availability of excess spread to offset losses and other potential liquidity stresses, but it may also determine the timing of significant events that may be triggered by losses (for instance, in a mixed pro rata sequential structure).

As mentioned, DBRS Morningstar analyses historical cumulative default curves (or the cumulative net loss curves when relevant or separate data is not available) to develop the average amount of defaults (or net losses) experienced at each period. This average curve is sometimes smoothened by approximation to a model curve (usually a double exponential) or by averaging.

After the base shape of the default curve is determined, DBRS Morningstar develops alternative loss distributions to evaluate scenarios whereby default and losses materialise quicker or later than expected. Typically, DBRS Morningstar defines the patterns over three identical periods obtained by dividing the significant life of the portfolio (when all or most of the defaults are expected to affect) into three identical portions.

Under a sequential structure, the front-loaded loss scenarios typically add more stress to the available credit enhancement levels of senior securities in the structure while back-ended losses cause more hardships on the subordinated bonds. Table 2 shows an example drawn from an average curve distributed over a time horizon of four years. Period 1, 2, and 3 are three identical portions of significant life of the portfolio (for a four-year horizon each is a time period of 16 months).

Table 2

	Front Ended	Middle	Back Ended
Period 1	50%	30%	20%
Period 2	30%	50%	30%
Period 3	20%	20%	50%

Note: The respective amount of losses is spread evenly throughout the period.

Prepayments

Evidenced by historical performance, prepayments and other forms of early termination other than defaults (voluntary prepayments) may vary from one jurisdiction to another and from one finance product to another.

DBRS Morningstar typically analyses the historical dynamic performance in terms of early repayment to assess a range of prepayments to be tested: DBRS Morningstar typically runs low, medium, and high prepayment scenarios.

The definition of the high prepayment scenario is typically critical, since the high prepayment scenario is likely to cause adverse selection in the underlying pool and compress the pool's yield. However, when the early repayment is not a contractual right and has to be individually negotiated and agreed with the sponsor/originator (or the receivables assignees) or otherwise entails additional cost for the borrowers (or other form of incentive not to prepay) that cannot be waived, the level of stress may be limited. This is due to the likelihood that under a stressed scenario the sponsor (possibly insolvent or under distress) is not usually expected to be in a position to authorise repayment above the scheduled amount without appropriate indemnification. This is typically the case in lease contracts where early settlement is not usually a right and has to be agreed with the issuer (as the assignee of the receivables) that is not typically allowed to take additional losses without indemnification.

DBRS Morningstar usually models prepayments by applying a constant prepayment rate (CPR) to the portfolio outstanding at each period. Average or low CPR is usually considered constant over the life of the deal but variable CPR may also be applied. A zero CPR is usually modelled and considered, but the scenario may be modified to reflect a low CPR scenario if justified (for instance, see section on RV analysis "Residual Value" on page 24).

DBRS Morningstar notes that very high or very low prepayments may affect the assumed timing of defaults or losses. In cases where very high prepayments are applied throughout the life of the transaction, DBRS Morningstar may disregard some results in favour of back-loaded scenarios on a case-by-case basis.

Some forms of contractual or regulatory early termination may cause losses to the issuer. DBRS Morningstar analyses these instances on a case-by-case basis. Typically, early terminations with embedded losses for the lender will be treated by DBRS Morningstar under the same approach described above for credit defaults (for instance, voluntary termination applicable to UK auto loans) but in other cases it may be applied as a haircut to the prepaid amount (e.g., to factor retention of amounts or to model cases of assignment at discounted value).

Some specific cases are covered in the next sections.

Auto Loans and Auto Leases

Auto loans are loans disbursed by banks, financial services providers, or the financing arms of motor manufacturers to facilitate the purchase of a car or another motor vehicle. In some jurisdictions the securitised receivables comprise a strong security interest over the financed vehicle whereas in other jurisdictions the auto loan is considered unsecured since the security interest is not typically formed or is in a weak form. Auto leases are similar to auto loans except that the amortisation usually includes a larger final payment that offsets the leased vehicle residual value and the security interest over the vehicle typically exists (usually the lessees do not acquire ownership of the vehicle or do so only with the agreed payment of the final instalment). However, for some auto leases, the enforceability of the security interest is tied to the solvency of the originator or the manufacturer. The securitisation risks and the strength of the security may depend on the nature of the receivables assigned, in particular if the RV is or is not securitised.

Some secured auto loans or leases provide for a right (or an obligation) of the borrower or lessee to turn in the financed vehicle instead of making a scheduled payment. When contracts are securitised in a way that the risk of remarketing the turned-in vehicle is transferred to the securitisation, the transaction comprises RV risk. Although RV risk is a form of market rather than credit risk, DBRS Morningstar approach to it is covered in this methodology under a specific section.

From the credit perspective, auto loans and leases are treated as the other unsecured consumer loans with the exception of the RV risk (if any).

When evaluating auto loans and auto leases, DBRS Morningstar typically considers additional characteristics. Some of the specificities of an auto loan (or lease) securitisation are summarised in the following sub-sections.

Down Payment and Advance Rates

The advance rate is defined as the initial loan balance, or financed amount, as a percentage of the sale price of the motor vehicle. The financed amount typically includes the sale amount (less the value of any trade-in) plus taxes minus the cash down payments. The financed amount may also include additional costs such as the insurance premium and extended warranty as well as any other fees.

High advance rates and/or rapid vehicle depreciation, particularly in the first few years of vehicle life, can turn equity negative when the borrowers' obligation under the loan exceeds the market value of the vehicle, resulting in a loss to the transaction if the customer defaults and the vehicle is repossessed and sold. In auto loans, the concept of advance rates is analogous to the concept of loan-to-value ratios in other asset classes.

New and Used Vehicles

Auto loans can be secured by either new or used vehicles. Used vehicles typically have flatter depreciation curves than new vehicles; however, used vehicles often experience higher default frequency due to obligors' credit quality. Whereas a new vehicle always has a list price to help

establish a valuation, particular care must be taken when valuing used vehicles to avoid overadvancing, because there can be a wide discrepancy among the various industry guides in determining the vehicle's market value.

Make and Model

The value of a vehicle is determined by an assortment of factors. Depreciation is the single largest reason for the decline in a vehicle's value. Depreciation levels vary by manufacturer, vehicle make, vehicle model, and fuel type, and can be affected by economic and regulatory conditions and model discontinuances. The manufacturer's ability to maintain warranty coverage also affects the depreciation rate. As a result, it is beneficial to ensure that vehicles in the securitised pool are diversified across make, model, and manufacturer.

Loan Amortisation, Balloon Payment, and Vehicle Residual Value

Auto loans and leases usually repay principal during the life of the loan through broadly equal instalments (comprising interest and principal), but in some case (typically for leases but more recently for loans) the last instalment envisages a bigger final repayment (balloon payment for loans or RV instalment for leases). Although not all of the auto loans or leases bear a real claim over the purchased asset, the balloon size is usually associated with the vehicle RV.

For auto loans, the payment of the final balloon instalment by the borrower is usually mandatory. Certain products envisage dealer repurchase arrangements but should the dealer default, the responsibility to pay the balloon payment is transferred to the borrower. In most jurisdictions, the auto lender does not typically take RV risk within auto loan products.

Therefore, the analysis of an auto loan securitisation does not usually entail direct RV risk analysis although the RV risk and, more in general, the risk of remarketing of the vehicle is related to the recovery rate. Certain types of auto loans (e.g., the UK personal purchase contract) may feature the option for the borrower to return the vehicle instead of paying the final balloon instalment, hence either exposing the lender or the securitisation to RV risk.

The size of the balloon payment is particularly important when the securitisation is exposed to RV risk and the actual payment of the final instalment is subject to the risk of fluctuation in the vehicle market. When RV risk is relevant, DBRS Morningstar addresses the risk as specified in the following sections related to RV risk.

When RV risk is not borne by the securitisation, the balloon payment may still introduce additional risks for the issuer. Market practice suggests that captive lenders usually encourage settlement of the balloon by means of vehicle replacement or refinancing. Under a refinancing arrangement the initial loan is repaid in full but through the proceeds of a new loan rather than being specifically repaid by the customer.

This cyclical behaviour introduces support by the manufacturer's network, which may artificially enhance the performance of balloon loans. DBRS Morningstar usually adjusts the stresses applicable to balloon loans for ratings above the financial strength of the manufacturer group and for ratings above investment grade.

Servicing and Vehicle Remarketing

As repayment of the auto loans depends in part on the sale of repossessed or returned collateral, DBRS Morningstar deems it important for servicers to strictly manage the vehicle remarketing process to ensure that vehicles are repossessed or returned and then sold in a timely and effective manner. Accordingly, in respect of defaulted contracts, DBRS Morningstar assesses whether servicers' repossession policies are consistent with default and recovery timings prescribed in the transaction documents. Failure to do so could result in liquidity strains and reserve account draws in instances where the transaction does not receive the vehicle sale proceeds in a timely manner.

DBRS Morningstar's review takes into account the legal framework of the jurisdiction, which governs how and when the lender or servicer is entitled to repossess and sell the vehicle, in an effort to refine its view of potential recovery delays.

Prepayments

In retail auto finance, prepayments are usually stable (albeit affected by seasonality) and generally independent of interest rates. Refinancing activity, the major driver of prepayments in the auto loan sector, is initially suppressed due to: (1) the sharp initial fall in the market value of a vehicle when it leaves the showroom and over its first few years of use often outpaces the amortisation of loan principal, giving lenders little incentive to offer refinancing against the depreciated collateral; and (2) auto loans have a relatively short term to maturity, reducing the amount of total interest savings to borrowers from refinancing. However, with the growth in balloon loans, prepayment activity has consistently increased later in the life of a contract. This reflects the customer behaviour as they approach the repayment of the final instalment and the options presented to them. Conversely, consumer loans not secured by a vehicle may experience more volatile prepayment behaviour, due to a longer term to maturity or the unsecured nature of the underlying collateral.

DBRS Morningstar's expected loss parameters for prepayments reflect the actual rates experienced by collateral similar to securitised assets. High prepayments reduce the effective life of the asset pool for potential defaults to occur, while compressing available excess spread whereas slow prepayments lengthen the life of the asset pool to allow more time for defaults and excess spread to realise.

When RV loss risk at contract maturity is significant, prepayments may actually reduce the impact of losses on the structure. When prepayment is possible and considered feasible, DBRS Morningstar applies a haircut to the prepayment rate experienced to determine the minimum level of prepayment speed to be considered.

Voluntary Terminations

In the United Kingdom, an obligor is entitled[14] to terminate an agreement after paying the financing provider half of the total price (a voluntary termination). The obligor is expected to take reasonable care of the goods and the lender is entitled to compensation should that not be the case. In essence, once a customer pays 50% of the total amount payable under the auto finance contract, he or she is permitted by law to return the car to the credit provider. This may lead to a loss for the

14. As provided under the Consumer Credit Act of 1990 (CCA), Section 100.

originator should it not be able to dispose of the vehicle at a price that covers the outstanding finance amount.

DBRS Morningstar reviews voluntary termination rates either on a static or line-by-line basis as part of the transaction's loss analysis. Static voluntary termination vintage curves and related proceeds of sale are analysed by DBRS Morningstar in line with its assessment of credit losses and a stressed multiple is applied to the expected cumulative voluntary termination rate. When DBRS Morningstar considers that a transaction may be exposed to increased voluntary termination risk, typically as a result of longer contract terms, low initial deposits and vehicle depreciation volatility, DBRS Morningstar may request loan-level data that allows an assessment of vehicle depreciation against the amortisation of the underlying financing agreement.

Lease ABS

Leases in ABS transactions include leases for both road-going and industrial vehicles; industrial, medical, and computing equipment; and sometimes real estate, in addition to other types of assets. The participants in the lease market include banks, captive finance subsidiaries of vehicle and equipment manufacturers, and independent finance companies.

A finance lease is a contractual arrangement whereby a lessor makes an asset available to a lessee (or obligor) for the term of the lease in exchange for the payment of repayment instalments. Consumer leases typically provide for level instalments, whereas commercial leases may be more complex (including interest-only periods or tailored instalments). At the end of the lease contract, the lessee may have an option to acquire the asset at a predetermined price (a closed-end lease) or is committed to purchase the asset at a predetermined price (an open-end lease). The predetermined price, or RV, is set so that the net present value of the instalments plus the RV is equal to the amount financed upfront by the lessor.

At the end of a closed-end lease term, the lessee, with an option to purchase the asset for a predetermined amount, is likely to evaluate the value of the asset versus the cost of acquiring the asset from the lessor. If the value of the asset is lower than the cost of buying it, the end user is likely to forfeit the option.

An operating lease is a contractual arrangement similar to a finance lease with the difference that at the end of the lease contract, the lessee always has to hand back the asset and has no contractual right to purchase it. In such contracts, the asset is usually sold in public auctions at the then prevailing market price. Although there may not be any contractual RV specified, the concept still exists for the lessor as the difference between the amount financed upfront and the discounted instalments payable by the lessee (this being equal to the discounted value of the RV of the asset). Operating leases may be closed-end or open-ended leases through a more or less complicated mechanism of adjustment whereas the lessee may take the risk or sometimes benefit from a positive change in the price of the asset.

Both financial and operating closed-end leases entail that the lessor (or its assignee) bears the risk that the remarketing price of the asset is lower than the contractual RV.

The prevalence of open-end or closed-end and financial or operating leases varies by jurisdiction, driven by the legal and tax environment and customer preferences. Lease ABS transactions may involve the securitisation of payments from closed-end leases, open-ended leases, the separate sale of lease instalments, or solely the RV payments. In fact, depending on the mechanism of assignment, the securitisation may or may not be exposed to RV risk. In circumstances where the RV risk is appropriately mitigated[15] the RV may be disregarded. Otherwise, where the securitisation is exposed to RV risk and mitigating factors are not sufficient, the risk of loss is separately analysed by DBRS Morningstar assuming a haircut to collections at contract maturity. DBRS Morningstar approach to RV risk is covered in another section of this methodology.

The analysis of the lessees, collateral assets, term, and payments of the leases backing a securitisation help to assess how the securitised pool of receivables is likely to perform. This analysis is substantially similar for a pool of loans with an additional consideration of potential RV risk where applicable for lease transactions.

Residual Value Risk

In some securitisations the RV risk of loans or leases may be transferred to the issuer and the risk that remarketing of assets turned-in may not produce sufficient cash flows to fulfil the issuer's obligations may result in a loss for some of them. This is typically the case for balloon payments of auto leases and certain auto loans.

This section outlines the DBRS Morningstar approach to RV risk and the determination of rating-specific RV losses in auto loan and auto lease securitisations. The same approach could be applied to other assets provided that, after few necessary alterations, appropriate information is available to assess the RV risk and quantify the RV loss.

Collateral Analysis in Auto Loan Securitisation with RV Risk

For securitisation of auto leases or auto loans with RV risk, DBRS Morningstar focuses on the following:

- Original term;
- Remaining term distribution;
- Vehicle make and model;
- New versus used;
- Geographic distribution; and
- Residual value determination

Original Term

The terms of consumer auto loans with RV or leases typically range from 24 months to 48 months, but may be as short as 12 months or as long as 60 months. As a result, the average term of securitised pools of leases is shorter than the average term of auto loans, typically 24 months to 48 months although in recent years a tendency to grant such loans and leases on longer terms has been observed.

15. For instance, if the residual value is not securitised or, if securitised, it is not paid or there is appropriate guarantee in place that meets the DBRS Morningstar European Legal Criteria, or other situations that DBRS Morningstar may consider on a case-by-case basis.

Most vehicles depreciate sharply in the first year, with an average decline of 15% to 25% of the purchase price in first year. Over the following years, a vehicle may lose an additional 10% to 15% per year; however, there is wide variability in these depreciation rates, based on makes and models, as well as operational factors such as vehicle condition and mileage. Furthermore, the resale value at the end of the leases' or loans' term can be affected by wholesale market conditions, such as supply of similar used vehicles and health of the original manufacturer (which may reduce brand value and threaten future parts and service availability), as well as broader economic factors, such as fuel prices, the regulatory framework, personal income, and employment. Consequently, the longer the term of the lease or loan, the higher the uncertainty associated with the depreciation rate and future wholesale market conditions, leading to higher RV volatility.

Remaining Term Distribution

DBRS Morningstar examines the distribution of maturities within the securitised pool. A large portion of the contracts maturing in a short period concentrates and increases RV risk in a weak wholesale used car market. An even distribution of maturities diminishes the proportion of the pool subject to a brief downturn in used vehicle prices. Nevertheless, in deeply stressed environments downturns are more severe and longer, creating a sustained, higher exposure to the financing company for vehicles to be returned at a loss against RV.

Vehicle Make and Model

Diversifying the distribution of vehicle make and model reduces concentration risk due to any particular make or model. RVs can fall due to economic factors, as well as manufacturer-specific items, such as body-style discontinuances or deterioration in the financial condition of the manufacturer, resulting in concerns about their ability to satisfy warranty claims.

Residual Value Determination

The RV or the amount for which the lessee may buy the vehicle directly from the financing company at the end of the lease is determined at the inception of a lease by the finance company. This is sometimes referred to as contractual RV to distinguish it from the resale value of the vehicle at the end of the lease term. RV affects not only monthly lease payments, but also the likelihood that the consumer will turn in or buy the vehicle at the end of the lease term.

Leases with lower contractual RV will entail higher payments from the lessee, but can offer the opportunity for the lessee to take ownership at the end of the term by paying less than the price of a similar used vehicle. From the noteholders' perspective, this is a conservative RV policy, which assures a predictable cash flow at lease maturity when the lessee (or the dealer on his or her behalf, if taking the car in a trade) will tend to pay the RV amount. From a manufacturer's perspective, the higher lease payments might slightly dampen initial vehicle sales, but may help the brand over the long term by giving dealers the opportunity to engage the lessees by using the equity they have in their leased vehicle to offset some portion of the costs of a new vehicle.

Leases with a higher RV offer low lease payments, which helps manufacturers to move vehicles from dealer forecourts, but they pass more risk to noteholders, as a large share of vehicles may be returned for resale at lower prices potentially resulting in RV losses.

Credit Losses

RV losses can only take place when contracts reach their maturity; thus, RV loss and credit loss (as following contract termination) are mutually exclusive. The credit losses in a transaction can actually reduce RV losses (although typically not the overall loss of a pool) by impeding contracts to reach their scheduled maturity.

To determine credit losses on a pool of lease contracts, DBRS Morningstar assesses the expected default rate in the same manner as for other term contracts, using the techniques previously described in this report.

Turn-In Rates and Residual Value Losses

The RV risk depends on two factors: (1) the percentage of vehicles returned to the lessor at the end of the lease term (turn-in rate); and (2) the market value of the returned vehicles compared with the contractual RV at the end of the lease term.

DBRS Morningstar examines the finance company's policy for setting future repurchase prices to gauge the expected baseline RV exposure for each securitisation.

Turn-In Rates

The aggregate turn-in rate at maturity for a securitised pool depends in part on the lessees' exercise of the vehicle purchase option at lease maturity (if permitted), in addition to defaults and early terminations. The higher the percentage of lessees with purchase options who choose to purchase the vehicles at lease maturity[16], the lower the turn-in rate and the RV risk. As a share of total lease outcomes in the pool, aggregate turn-in rates are reduced by customer defaults, insurance proceeds collected in connection with accidents, or early prepayments (potentially substantial in some markets). Turn-in rates at maturity can vary widely and tend to rise when market prices for similar vehicles fall substantially below contractual residual values.

DBRS Morningstar expects that a consumer who has the option to purchase a vehicle at a RV less than the used-market value will do so as a rational economic behaviour. Conversely, a consumer facing a RV repurchase price higher than the market value will return the vehicle to the lessor, in effect transferring that loss to the lessor.

In establishing a turn-in rate at maturity for lease contracts, DBRS Morningstar assumes that when the RV payment is paid by the lessee (or dealer on the lessee's behalf) this will be done at a gain for the lessee, but it results in a loss compared to the amount securitised against the RV in the pool. As a result, lower turn-in rates are more beneficial to a lease securitisation.

DBRS Morningstar establishes an expected turn-in rate by examining historical data. Where data is adequate, past turn-in rates per make and model in a recession and where market values fell substantially below contractual RV are used as a proxy to interpolate future turn-in rates for similar makes and models in progressively worsening economic and wholesale vehicle market conditions. This analysis includes application of stresses to the expected case, considering the manufacturer's

16. This includes settlements with dealers for purchase of a new vehicle. In these cases, the financing company will have received contractual payment instead of a physical vehicle. The dealer will then end up owning a fresh off-lease used vehicle, which, after its negotiations with the lessee, it expects to sell for profit.

aims of using the RV provisions as short-term sale, neutral or longer-term repeat sale strategy, economic risks, or competitive pressures, all of which could drive used car prices below projections.

The projection of the aggregate turn-in rate of the original pool first depends on the survival rate, which is the proportion of all leases on which all scheduled payments are successfully made before the end of the term. This leaves a portion of the lessees in good standing with the choice to turn in the vehicle or exercise any available purchase option. Before this point, however, both stressed and unstressed environments will produce early terminations such as default-triggered repossessions, stolen or written-off vehicles because of accidents, or lessees moving abroad or otherwise experiencing lifestyle changes that may contribute to their need for a replacement vehicle. In these cases, the lease will expire prior to its scheduled termination but, due to its low frequency and/or sufficiency of insurance (generally a condition of the lease), is unlikely to generate a meaningful loss to the lessor.

Of the many factors leading to early termination of a lease, the repossession rate has the largest influence on turn-ins or survivorship, particularly in a stress scenario where the repossession rate is assumed to be several multiples of the historical level. DBRS Morningstar also considers the total number of vehicles in the pool that can be deemed as scheduled turn-ins during the term of the transaction because of the expected negative equity position of the lessee at the end of the term.

For leases, there is a natural turn-in ceiling at 100% (i.e., the worst-case scenario will be that the entire portfolio is returned to the originator). The turn-in rate assumptions for lease agreements at maturity are typically 100% for AAA ratings. A lower turn-in rate may be considered in light of mitigating factors and for lower rating scenarios.

Impact of Prepayments

In auto finance products, prepayments are typically very high, because car dealers and/or manufacturers actively solicit customers throughout the life of the agreement to use potential equity in the underlying vehicles to prepay their lease contracts and to purchase new vehicles. The level of prepayments is a function of the contractual RV level, the actual depreciation rates, and the performance of the used car market. When analysing a transaction, DBRS Morningstar determines a base-case constant prepayment rate derived from historical data to identify the principal repaid in relation to vehicles that are not returned at maturity, in addition to defaults. The prepayment rate is then stressed by applying the following rating-dependent haircuts:

Table 3

	Rating Haircut Applied to Base-Case Cumulative Early Settlements
AAA	75% - 90%
AA	65% - 75%
A	55% - 65%
BBB	35% - 55%
BB	15% - 35%

Although the reduction in the early settlement rate may lead to an increase in interest collections on the receivables, this is typically offset by the increased RV exposure. DBRS Morningstar,

therefore, assesses early settlements under both base-case and stressed scenarios. Examples of how this affects DBRS Morningstar's approach to determining turn-in rate are outlined in Table 4:

Table 4

Rating Level	A % of Loans Defaulted (stressed)	B % of Loans Early Settled Prior to Maturity (after haircut)	Reach End of Term (100%-A-B)	Turn-In Rate at Maturity	Aggregate Turn-In Rate
AAA	15.0%	10.0%	75.0%	100.0%	75.0%
AA	12.0%	15.0%	73.0%	95.0%	69.4%
A	9.0%	20.0%	71.0%	90.0%	63.9%
BBB	6.0%	30.0%	64.0%	85.0%	54.4%

Notes: A Defaults are stressed according to credit loss multiples. B Assumes that a base case of 50% of contracts are settled early prior to maturity.

Residual Values

Contractual RVs, or guaranteed purchase prices at lease-end, are typically set according to published industry guides on future value or proprietary models of the originators, which then may be further subsidised by the manufacturer to be set at a higher level to make monthly payment amounts lower and more affordable and to increase sales. To the extent that contractual RVs in the securitised leases are set above the predicted future value of the vehicle, DBRS Morningstar would expect the transaction to incorporate sufficient credit enhancement to accommodate the anticipated amount of embedded loss on the resale of returned vehicles. DBRS Morningstar only gives limited benefit to any manufacturer subsidies to cover losses, particularly for lower-rated manufacturers.

To analyse an originator's historical RV performance, DBRS Morningstar compares its original forecast of the value of the vehicle at lease-end to actual sale proceeds upon disposal. DBRS Morningstar requests that this information be provided for the prior three to five years, by lease term for each make and model. DBRS Morningstar also uses this data to assess the capacity for the financing company to face losses on sales of turned in vehicles compared with the contractually priced purchase.

To determine the adequacy of protection for noteholders, DBRS Morningstar assumes volatility in the underlying market value of the vehicles caused by unanticipated market and economic developments, leading to a systematic overestimation of contractual RVs. The DBRS Morningstar analysis is based on the assumption that any industry guide forecast will not reflect all potential factors that could result in a systemic devaluation of the vehicles at the end of the lease term.

DBRS Morningstar derives a base-case RV haircut by assessing at least two out of the following three sets of data:

- A minimum of three years of the originator's historical realised vehicle data versus contractual RV and variability;
- Five years or more relevant market used car price data and variability; and
- An assessment of future market prices of used vehicles compared with the securitised contractual RVs by an independent third-party provider.

DBRS Morningstar may consider alternative RV data available to assess whether the RV haircut can be determined. The base-case RV haircut, as a percentage loss, is typically the worst historical realisation of the contractual RVs versus the then-current vehicle market values. Rating-dependent multiples are then applied to this base case, as shown in Table 5 below:

Table 5

Residual Value Haircut Multiples	Maximum	Minimum
AAA	3.00	2.25
AA	2.50	2.00
A	2.00	1.50
BBB	1.75	1.25

In determining RV losses, DBRS Morningstar reviews other quantitative and qualitative factors that include the strength of an issuer's claim over the underlying vehicle sale proceeds.

Cash Flow Analysis

DBRS Morningstar applies various stresses to assess the ability of the notes issuer to repay the notes in full in accordance with the terms of the transaction documents. DBRS Morningstar performs this analysis within a cash flow analysis that incorporates (1) increasingly stressed cash flows (including the stressed gross/net loss and RV loss assumptions) from the receivable pool for each successively higher rating and (2) the flow of these funds through the securitisation, considering triggers and credit enhancement. DBRS Morningstar compares the amounts and timing of the receivable pool collections under a given set of rating-specific stresses as shown above, including available credit enhancement.

Credit Card Asset-Backed Securitisations

This section concerns the DBRS Morningstar approach to rating ABS transactions that are backed by receivables of credit cards or certain revolving lines of credit. As a revolving line of credit functions like a credit card in many ways, except for the lack of a physical card, the approach to rating unsecured revolving lines of credit is also addressed by this section.

For the avoidance of doubt, some credit lines may not fall under the scope of this methodology, such as home equity credit lines and certain types of overdrafts offered to commercial customers or small and medium-size enterprises. Furthermore, when a revolving line of credit or an overdraft account prescribes a fixed amount of mandatory or scheduled repayment, this section may not be applicable.

Credit card ABS transactions can be broadly characterised as follows:

- The underlying receivables are typically unsecured and very granular, usually from thousands or millions of account holders.
- Due to the revolving nature of the assets, credit analysis focuses on dynamic rather than static variables that seek to assess the impact of a deterioration in key metrics such as charge-off, payment, and yield rates.

- Excess spread may be volatile because of the variation in finance charges billed to account holders and funding costs incurred by the issuer (the latter being dependent on the sponsor's future access to securitisation).
- The notes may be issued in multiple series simultaneously or at different times and backed by revolving receivables that fluctuate with frequent repayments and purchases of new receivables. This means:
    - The business strength, competitive position, and underwriting quality of the originator to generate new receivables through its franchise is carried over to the stability of the securitised assets;
    - The allocation of payments from the receivable pool between series of notes that amortise simultaneously (for instance, due to an accelerated amortisation event or due to the unwinding of the issuer) may have different rating implications than sequential repayments of senior and subordinate notes backed by discrete pools.

Given their often-higher interest charges than other lending products and increasingly widespread use in personal finance, credit cards tend to attract more regulatory scrutiny/action. These may entail limits to finance charges paid by the credit card holders and/or an increase in minimum payments such as those seen in France, Belgium, the Netherlands, and the UK.

Credit Card Receivables

A credit card provides its holder with a credit limit that may be used and typically stipulates a fixed or floating annual percentage rate (APR) to be applied to balances that are not repaid in full each month. Outstanding balances increase as new purchases and spending are made and decrease when outstanding principal is repaid. Finance charges typically include late payment, over-limit, foreign exchange, or annual fees, in addition to interest charges that accrue on unpaid balances. Finance charges may also include interchange fees received by card issuers as compensation for fraud, temporary credit risk of borrowers on a given transaction, and the cost of funding receivables until the due date.

Cardholders that repay their balance in full each month are often referred to as *convenience users or transactors*. Cardholders that make only partial payments are referred to as *revolvers* as they carry or revolve an outstanding balance from month to month.

Revolving Lines of Credit

Typically, a revolving line of credit offers the same features as that of a credit card except for the lack of a physical card. There may be different jurisdiction-specific frameworks for this product, and local regulation may impose an APR more aligned with that of a standard unsecured loan and an ultimate maturity on the outstanding balance such that the borrower is obligated to repay the balance in full by a specific date. DBRS Morningstar assesses the contractual terms as well as the applicable laws and regulations on a case-by-case basis to determine whether an ABS transaction backed by revolving lines of credit would fall under this section of this methodology.

Originator and Servicer Review

DBRS Morningstar believes that the quality, capacity, and financial strength of the originator directly affects the likelihood that the notes will be fully repaid. Originators typically maintain a

strong vested interest in maintaining the credit quality of the underlying receivables, as excess spread in a credit card-backed ABS transaction is typically released back to the originator. Most originators proactively manage their customer accounts and aim to promote consistent and robust usage to drive profitability. Such active management includes originating receivables amid intense competition, reviewing and modifying credit terms, targeting promotional offers, adjusting the APR for better risk pricing, and performing collection activities to minimise credit losses.

Due to the revolving nature of the receivables, where amounts may be further drawn against the credit limit by the customer, the originator also typically acts as the servicer and remains closely associated with the receivables as the sponsor of the transaction.

Although the issuer of the notes is a bankruptcy-remote or bankruptcy-proof special-purpose vehicle distinct from the originator, an evaluation of the originator and the replacement servicer (if applicable) is key to the sustainability of the securitisation funding as they provide critical ongoing support to the receivables. For example, if the originator becomes insolvent, generation of additional receivables would likely dramatically decline or stop, rendering the receivable pool static and the transfer of servicing to a replacement servicer could disrupt or affect the collection of receivables, resulting in potential performance deterioration.

Performance Metrics

DBRS Morningstar assesses the performance data based on the collateral characteristics of the historical portfolio. If the receivable parameters are considered to be a good proxy for the potential performance of the securitised portfolio, DBRS Morningstar may use the data to derive expected collateral performance for charge-off, payment, and yield rates. DBRS Morningstar also evaluates the reported receivables balance to determine the principal component separated from any billed but unpaid interest amounts.

As credit card, or line of credit, portfolios are generally very granular with thousands or millions of accounts, DBRS Morningstar conducts its performance analysis typically on the entire portfolio on a dynamic basis supported by cohort analysis by variables such as credit score, origination vintage, and product type that may display noticeable differences in performance.

Charge-Off Rate

Delinquent receivables are charged off by the servicer based on criteria typically followed by prudent lenders or specific regulations. Nonetheless, charge-off timings may differ between originators depending on their servicing and collection procedures and, as DBRS Morningstar has observed, charge-off timings in Europe range from 90 to 360 days in arrears. Receivables related to borrowers filing for bankruptcy or equivalent proceedings are also typically charged off by the servicer and/or in line with transaction documents. Subject to the transaction documentation, the charge-off rate is typically calculated as an annualised percentage of the principal amount charged off in a month in relation to the outstanding principal receivables.

Generally, charge-off rates are affected by three main variables:

- Macroeconomic factors, such as unemployment trends, household income, and leverage ratios, addressed on case-by-case basis by DBRS Morningstar's combined view of the sovereign and the specific market;
- The underwriting and servicing practices; and
- The consumer's personal situation, an idiosyncratic risk, which is assumed to have nominal impact on the performance of a highly granular portfolio with little single borrower concentration.

Adjustments to the Charge-Off Rate

Typically, adjustments to the expected charge-off rate are based on factors such as the originator's financial strength, origination consistency, account management, collection and servicing practices (including forbearance measures), and the overall variability, sufficiency of, and trends in the performance data provided to DBRS Morningstar.

The nature of a credit card may also affect the expected charge-offs. For example, private label retail cards typically incur higher expected charge-off assumptions than a general-purpose card of similar credit quality because of the opportunistic, incentive-driven origination and more limited utility in a stress scenario such as the financial difficulty of the retailer and/or the originator. As the utility of credit cards drives the originator's ability to originate, transfer, or sell its receivables, the financial viability and overall health of the originator and the retailer's ability to continue as a viable entity and trade is affected. On the other hand, a personal line of credit is usually for general consumption, not restricted to a certain merchant like private label credit cards.

To the extent that DBRS Morningstar determines changes have been made to an originator's risk appetite or underwriting practices that may affect future performance, an adjustment to the expected charge-off rate may be warranted. An adjustment to the expected charge-off rate may also occur as a result of changes in the servicing practices, most notably for the use of repayment plans and the reaging of delinquent accounts.

Given the unsecured nature of lending, recoveries are expected to be low and DBRS Morningstar typically assumes zero recoveries in its the cash flow analysis.

However, DBRS Morningstar may recognise recoveries in certain jurisdictions where the recovery process and/or charge-off timing is prescribed by legislation or historical static data shows consistent and positive performance. DBRS Morningstar may apply a lagged expected recovery on case-by-case basis, which may be subject to further rating-specific adjustments.

Monthly Payment Rate

Monthly payment rates represent total monthly collections of principal and finance charges divided by the receivables balance. Payment rates are critical in evaluating credit enhancement levels as higher payment rates result in more funds available to repay the notes either during controlled accumulation or amortisation periods and the notes would have been repaid faster.

Monthly payment rates are affected by several variables, such as delinquencies, which adversely affect the payment rates. In addition, the mix of transactors and revolvers in a given pool including

borrowers who make the contractual minimum monthly payments can have a significant impact on a portfolio's payment rate. In comparison, line of credit borrowers are genuine revolvers and do not use the product as a payment medium for convenience.

When determining the expected payment rate, DBRS Morningstar expects the sponsor to supply data on principal payment rates. If the data does not include a breakdown of finance and principal collections, DBRS Morningstar typically nets out the finance charge component embedded in the total payments to determine the expected monthly payment rate. DBRS Morningstar also considers the contractual minimum payment terms and any repayment requirement of the outstanding principal balance or total balance.

Yield

Credit cards or revolving lines of credit typically have APRs that are fixed or based on a floating reference rate plus a premium. The premium is often reflective of risk pricing and is based on the credit quality of the obligor and the lender's experience with the obligor. While APRs are intended to attract certain types of consumers, the originator's ability to reprice the APRs is an effective risk-management tool. DBRS Morningstar notes that lenders may not adjust APRs quickly or frequently in response to a change in reference rates due to the legislation (usury rate) or market competition.

In addition to the finance charges from APRs, portfolio yield may be supplemented by annual fees, interchange fees, late payment fees, cash advance fees, foreign exchange fees, over-limit fees, and other fees or charges levied on the use of credit line. In general, portfolio yield is calculated as the annualised ratio of the monthly nonprincipal amounts collected (not billed interest amounts) on the receivables divided by the principal receivables balance. Recoveries may be included as an additive item in the calculation of yield or as a subtractive item to the charge-off, depending on the transaction documents or originator's practices.

To determine the expected portfolio yield, DBRS Morningstar requests the data for monthly interest income collected in addition to the billed amount. As the billed income or accrued yield figure typically is not adjusted for delinquencies, waived fees, or waived charges, DBRS Morningstar may discount billed yield to estimate the collected yield.

As the yield figure may include interchange and other fees, DBRS Morningstar may reduce or remove these fees from the reported yield to determine the expected yield relevant for the cash flow analysis, especially during the note amortisation period as the ability to generate certain types of fee income may be limited or may have ceased. DBRS Morningstar notes that some transactions may not transfer fee-related receivables to the issuer.

Interplay of Performance Metrics

The net yield is affected by the levels of charge-offs, delinquencies, and payment rates. Charge-offs are inversely correlated to net yield, meaning the higher the charge-offs, the lower the net yield. On the other hand, early stage delinquencies may contribute to higher yields because of late payment or processing fees levied on delinquent accounts (if permitted under the legislation) and interest charges accrued on outstanding balances. However, these billed fees and interest charges may not be fully collected if the delinquent receivables are written off eventually. The impact of payment

rates (and the mix of transactors and revolvers) on yield is more subdued. While high payment rates typically entail faster turnover of receivables and higher transaction volumes and related interchange fees, the interchange fee cap imposed by European Union (EU) directives reduces the yield contribution seen in portfolios of other jurisdictions without such cap.

If a portfolio has more transactors with higher payment rates, the charge-offs are typically lower as transactors pay in full each month without falling delinquent. The net yield is positively influenced by the lower charge-offs and higher transactional fees but may be negatively affected by the lower outstanding balance accruing interest charges.

Cash Flow Analysis and Stress Scenarios

Cash flow scenarios are performed on each class of debt with higher ranking classes being subjected to more severe stresses. The input of the cash flow analytics includes the expected asset performance of the yield, payment, and charge-off rates. Other elements essential to the cash flow analysis, such as the capital structure, priority of payments, transaction expenses, and interest rate and basis-risk assumptions are also considered.

Credit card and revolving line of credit securitisations normally incorporate the concept of an early amortisation event that, when triggered, ends the revolving period or the controlled accumulation period as the case may be, and starts the repayment of the notes. Early amortisation may apply to one or multiple series simultaneously. A trigger breach may be a result of declining performance of the receivables affecting one series more than others, or sponsor/originator/servicer-related failures, which would affect all series at the same time. In DBRS Morningstar's cash flow analysis, a transaction enters an unscheduled early amortisation period typically as a result of a quantifiable trigger breach, for example, related to the deteriorating performance of the collateral, instead of issues related to the sponsor/originator/servicer's performance, which are difficult to quantify due to the binary nature.

The cash flow analysis imposes increasingly severe stress scenarios on the expected collateral performance for each higher rating level. The stresses applied for each rating level are summarised in Table 6 as general guidelines and the actual stresses applied are determined on a case-by-case basis. The following factors are considered in determining the ultimate stress parameters:

- Absolute levels of performance metrics;
- Nature and utility of products; and
- Features specific to the jurisdiction and/or transaction whose definitions and related calculations are considered nonmarket standard.

For example, absent other factors, DBRS Morningstar may apply a lower multiple in the stress range to a portfolio with a high expected charge-off rate to avoid unrealistically high stressed charge-offs as the relative scope of anticipated volatility would be smaller in a stressed environment. This could delay the breach of a trigger based on charge-offs (or excess spread) and allow a longer period of collateral deterioration in the assessment of available credit enhancement levels. Conversely, DBRS Morningstar may apply a higher multiple in the stress range on a portfolio with relatively low expected charge-offs, which tend to have higher volatility in a stressed environment.

In addition, DBRS Morningstar may apply more severe stresses to portfolios of private label cards as they are typically expected to perform worse than general purpose cards or lines of credit when the sponsor or the cobranded entity is under stress as the utility of the cards is severely limited due to the merchant availability and the borrowers' motivation to repay the outstanding balance is considered significantly reduced.

In jurisdictions such as Belgium and France where the repayment timeframes for credit cards and revolving lines are legislatively mandated and the related receivables are essentially turned into an amortising pool from a specific point in time with a finite maximum duration, the stressed payment rates would be subject to a floor that is below the statutory minimum payments to reflect stressed delinquencies and charge-offs.

Contractual minimum payments are transaction-specific and may be set in various forms as a percentage of the total outstanding balance including both finance charges, fees and principal amounts, a percentage of the outstanding principal balance plus accrued interests, and fees or other variations and are typically subject to a floor value. DBRS Morningstar notes that in the first case principal repayment of receivables may not occur in a stressed scenario of low payment rates under an environment of high yield rates.

Table 6

Summary of Stresses by Rating Category	AAA	AA	A	BBB	BB	B
Portfolio Yield (reduction of expectation)	30-45%	25-35%	20-30%	15-25%	5-10%	0-10%
Monthly Payment Rate (reduction of expectation)	35-50%	35-45%	30-40%	25-35%	10-20%	0-10%
Charge-Off Rate (multiple of expectation)	4.0-5.0	3.0-4.0	2.5-3.5	2.0-2.5	1.5-2.0	1.0-1.5

The analysis typically begins in a benign credit environment where the portfolio performs in accordance with expectations, followed by a simultaneous deterioration in charge-offs, payment rates, and portfolio yields along with, if applicable, interest rate stresses commensurate with the rating (in accordance with the applicable DBRS Morningstar methodology). To assess the impact of revolving periods, DBRS Morningstar typically delays the commencement of performance deterioration and/or interest stresses until the time close to the end of the scheduled revolving period to reduce the cash flow available to repay the notes and, if applicable, to apply the higher margins on the notes after the end of the scheduled revolving period.

In the stress scenarios, yield, monthly principal payments, and charge-offs are assumed to reach their respective stressed level between six and 12 months and held constant thereafter. The ramp-up (or down) curve is typically assumed to be linear but could be amended according to the nature of portfolio or obligor behaviour. For example, where a portfolio has a high proportion of transactors, DBRS Morningstar may elect to use a shorter period of six months for the decline in payment rates or a nonlinear stress curve to address the possibility that the number of transactors in the pool may decline quickly in the stress scenarios. DBRS Morningstar may also elect to stress the asset deterioration over a longer period for the lower rated notes (such as below the investment grade), but typically no longer than 18 months.

Early Amortisation

From a cash flow perspective, DBRS Morningstar assumes that during the revolving period the originator continues to transfer additional receivables to the issuer until the transaction enters into an unscheduled early amortisation caused by a performance trigger breach. Depending on the severity of the stress scenarios and the prescribed triggers in the transaction documents, the repayment of notes usually commences later than the start of the performance deterioration as a performance-based trigger is typically measured over several months.

Additional stress factors that are not covered above are discussed in the following sections.

Purchase Rate

The purchase rate is the rate at which new receivables are generated under the accounts assigned to the collateral pool. For cash flow purposes, DBRS Morningstar calculates the purchase rate as the ratio of new receivables over the balance at the end of the previous month.

The purchase rate may affect the speed of note repayment during the amortisation period based on the transaction documents. For example, a higher purchase rate means a larger receivable pool and the cash flows available to the transaction may be larger if it is permitted under the transaction documents. Everything else being equal, a higher purchase rate would benefit the transaction as the finance charges collected on the new receivables can offset the charge-offs allocated to the transaction.

In the assessment of credit enhancement, DBRS Morningstar determines expected purchase rates based on, among others, the utility of card, the viability of continued origination, the sponsor's financial strength, and the transaction documents. DBRS Morningstar typically assumes a zero purchase rate under the following circumstances: private label or retailer cobranded cards, as the usage of these cards in a stressed, accelerated unscheduled amortisation scenario (such as due to the insolvency of a retailer or sponsor) may be limited or severely impaired and the sponsor is considered to have insufficient capacity to support the lending operation; portfolios related to unrated or financially weaker sponsors as the sponsor's ability to support the operation is also considered constrained. These portfolios are essentially transformed into an amortising collateral pool in a stressed scenario.

On the other hand, large portfolios of general-purpose cards and lines of credit portfolios from financially strong originators are given the benefit of positive, albeit low, purchase rates in a stressed scenario. As the usage of these products is not limited to particular merchants or locations, stronger sponsors are considered able to support the operation and less likely to severely curtail card activity. Furthermore, these portfolios may also be attractive to potential acquirers. For lower rating categories of notes, more benefit may be given to the purchase rate.

Principal Deficiency Ledger (PDL)

Transaction documents may record receivable charge-offs in the current period allocated to a specific note series in a PDL. The PDL amount is typically first covered by finance charge collections. If finance charge collections, along with the reallocation of funds (when permitted under the transaction documents), are insufficient to cover the charge-offs, the shortage could cause either a

draw on enhancement, a writedown of note balances starting from the most subordinate class or, instead of a direct writedown of the notes, a debit in the PDL.

If finance charge collections (along with reallocation) in the current period are more than enough to cover the charge-offs, the excess may be used to cover cumulative net charge-offs to cure the PDL starting from the amount related to the most senior class of notes.

Some issuance programs may allow reallocations of unencumbered principal collections to cover charge-offs, reducing the likelihood and amounts of PDL debits. While this feature may reduce the need of an enhancement draw or a note writedown, the repayment of notes is adversely affected and delayed due to lower principal available after the reallocation.

Interest Rate and Basis Risk

Interest rate risk in credit card ABS transactions may come from the mismatch between the APRs of the receivables (fixed or floating) and the note coupon rates (floating or fixed). Basis risk stems from the different interest rate indices used for determinations of APRs and the coupons of the notes.

To assess the impact of interest rate risk on the transaction, DBRS Morningstar assumes that floating-rate note coupons are subjected to a stress in accordance with DBRS Morningstar's *Interest Rate Stresses for European Structured Finance Transactions* methodology while the APRs may or may not be adjusted accordingly, subject to the operational servicing arrangements, market dynamics, and local regulatory limitations and requirements. DBRS Morningstar considers the extent of APR repricing arrangements on a case-by-case basis.

Securitisation Structures and Cash Flow Allocations

Master Trust

Credit card and line of credit securitisation programs typically employ a master trust structure or an equivalent form (in some jurisdictions a fund may be used instead of a trust), under which all eligible receivables from a lender's brand(s) of cards or line of credit accounts are designated to a single pool and from which all notes are issued and repaid. This approach provides a lender or sponsor with the ability to issue multiple series backed by the same collateral pool. Master trust structures typically incorporate a revolving period (for the entire trust/fund or for specific series) during which principal collections are used to reinvest in new receivables to maintain the collateral balance. This feature extends the duration of the collateral cash flows, allowing the creation of long tenor notes backed by assets of faster turnover.

Generally, security interest in master trusts are divided between investors' and seller's interests. The investors' interest is designated for repayment of the notes and is determined by the percentage of the aggregate amount of notes outstanding divided by the amount of master trust receivables. The percentage cannot be more than 100%.

The seller's interest is the residual amount beyond the investors' interest and ranks pari passu with the investors' interest in terms of cash flow allocation and is typically not considered by DBRS Morningstar as part of credit enhancement. There is usually a minimum seller's interest or similar seller facility that exists to absorb fluctuations in the trust receivables balance because of changes

in outstanding balances or reductions in the balance from factors other than defaults or repayments (e.g., merchandise returns, rebate or rewards schemes, noncomplying receivables and/or fraud). The seller's interest (or similar seller facility) may also absorb declines in receivables balance resulting from a breach of a representation or warranty by the seller/originator. Generally, when the seller's interest falls below a level specified in the transaction documents, the sponsor or the originator is obliged to cure the deficiency within a certain period by adding more receivables until the seller's interest is restored to its minimum level. If the minimum seller's interest is not met, an early amortisation event may be triggered and the notes may begin to amortise.

DBRS Morningstar notes that some programs provide an excess seller interest (or similar facility) over the amount described above. The excess seller interest would rank pari passu with the investor's interest during the revolving period but is subordinated to the investor's interest in terms of cash flow allocation during the amortisation period. Such arrangement may be considered as part of credit enhancement depending on the transaction documents.

Master Trust Cash Flow Allocations

Cash flows from the receivable pool are typically segregated into two components: principal collections and finance charge collections. Allocations of these two components to each series of notes depend on the transaction documents and are typically determined by whether a particular note series is in the revolving, accumulation, or amortisation period.

During the accumulation period, collections are accumulated for the upcoming scheduled redemption as a single (bullet) repayment. During the amortisation period, collections are applied when available to amortise the notes. The amortisation may be controlled or partial, used as an alternative to scheduled redemptions of the notes under sound asset performance. The amortisation may also arise from the breach of a performance trigger or the failure to repay a soft-bullet note series in its entirety on its scheduled repayment date.

Fixed and Floating Allocation Methods

Finance charges are typically allocated pro rata among outstanding series (floating allocation). However, finance charges may also be allocated using the fixed allocation method if an early amortisation event occurs. On the other hand, principal collections are accumulated or used to amortise the notes based on either the fixed or floating allocation method once the revolving period ends. Under the fixed allocation, principal collections are allocated to a series based on its respective interest in the master trust as at the end of its revolving period: the numerator of the allocation ratio is held constant at the amount of its outstanding note principal balance as at the end of its revolving period, and the denominator of the allocation ratio is the outstanding principal amount of the receivable pool of each determination period, which can change with each period. As the numerator remains constant and the receivables balance declines due to the cessation of new receivable additions, the fixed allocation method generally amortises a specific note series more quickly than a floating allocation. As the fixed allocation could advantage the note series with earlier scheduled redemption dates as it would receive proportionately more allocation than that under the floating (or pro rata) allocation, it is typically allowed only when there is no early amortisation event related to the trust or to all the outstanding note series to avoid time subordination among the outstanding series.

The use of different allocation mechanisms in different periods of the transaction's life provides the originator/sponsor and the issuer the flexibility to issue any amount of debt as desired as long as adequate asset cover and credit protection for noteholders are ensured.

Master Trust Cash Flow Analysis

As mentioned above, a master trust allows the issuance of multiple note series at different times that are backed by the same revolving collateral pool. As such, master trust structures have more variability in respect of assets and the liabilities compared to other types of securitisation structures. To address this potential variability, DBRS Morningstar stresses many variables simultaneously to assess the sufficiency of credit enhancement for the assigned rating in several scenarios. The results of the scenario analysis are typically used as guidance and are not considered determinative or predictive.

As master trusts typically have ongoing issuance, the expected collateral performance is reassessed by DBRS Morningstar upon each new issuance. As the portfolio is generally very granular, DBRS Morningstar typically does not set the expected performance under a theoretical worst-case portfolio composition unless there are concentration limits by specific product types with noticeable, diverse performance. DBRS Morningstar also reassesses the expected performance upon other significant changes to the collateral pool such as large additions or changes in product types with noticeable, diverse performance. However, given that master trust structures provide the flexibility in respect of both the assets and liabilities, DBRS Morningstar generally does not take positive rating actions without significant structural improvements or during controlled accumulation periods even if collateral performance is better than the expectation, the specific transaction is de-levering, and/or the then-current portfolio and related cash flow analysis based on recent performance would have warranted a higher rating in a comparable static or standalone transaction with a predetermined revolving period.

On the other hand, in the surveillance of key performance metrics to analyse the general trend, unfavourable material deviations from DBRS Morningstar's expectation may have a negative rating impact.

Italian Salary-Assignment Loans

Italian salary-assignment loans (SAL) are amortising consumer loans where borrowers commit a part of their monthly income to the repayment of the loan, such that the monthly instalments under the loan are paid to the lender directly by the borrower's employer or pension provider. SAL may take the form of a salary or pension assignment loan (*prestito estinguibile con cession del quinto di stipendio* or *prestito con cessione del quinto di pensione,* respectively), or a payment delegation loan (*prestito estinguibile con delega di pagamento*). Salary and pension assignment loans are governed by the same regulation[17] and only differ by the type of income that secures the repayment. Italian law prescribes certain characteristics to the loans, including, most importantly, that the amount of net monthly income devoted to payment of the loan instalment may not exceed 20%. The loans can have up to a 10-year term and insurance must be taken out for the benefit of the lender to cover the risk of death of the borrower and, for employees, termination of employment. Lenders also benefit

17. Presidential Decree n. 180 of 05/01/1950, as subsequently amended (Law n. 80 of 14/05/2005 extends the framework to pensioners).

from a security interest over the severance payment payable to the employee upon loss of employment.[18] Payment delegation loans are designed to replicate a salary-assignment loan (or, more rarely, a pension assignment loan) in the more general (and less restrictive) framework of the Italian Civil Code[19]. A borrower could take out both an assignment loan and a payment delegation loan, resulting in the total commitment of up to 50% of income.

Due to the irrevocable commitment of the borrower's income and the presence of insurance against the main causes of income interruption, SAL historically exhibit much lower credit losses than other regular unsecured consumer loans. Losses arise under SAL because the insurance policy sometimes covers only the scheduled principal balance of the loan, not interest or arrears. As the protections present in SAL depend on the performance of the insurers and employers, the analysis of a SAL securitisation should address risks related to these parties. To properly assess the extent of loss mitigation they provide, DBRS Morningstar also considers the terms of the insurance agreements, such as the amount of cover, the time limits, and the events covered.

Salary and pension assignment loans provide more solid framework for the lender compared to payment delegation loans. In fact, a payment delegation is an ordinary loan agreement with a third party, the employer, that undertakes the irrevocable obligation to pay the lender on behalf of the borrower. Instead, under a salary assignment, the obligation to pay the lender is enforceable upon notice without any formal acceptance of the employer.

Payment delegation loans, thus, are perceived to be riskier than assignment loans and are generally granted on top of assignment loans, so that the payment delegation borrowers are more indebted.

Although a payment delegation loan is an irrevocable undertaking, contrary to a salary-assignment loan, it may be voided by a receiver or liquidator[20]. Under such circumstances, it is likely that a job event would occur, allowing a claim under the insurance and limiting any incremental losses.

Upon loss of employment (whether voluntary or not) the first stage of recovery of a SAL is through seizure of the severance payment, due by the employer and guaranteed by the sovereign. With respect to their claim over a severance payment, salary-assignment creditors are expected to rank pari passu, but are expected to rank in priority to any payment delegation creditors.

Framework

In analysing securitisations of SAL, DBRS Morningstar first assesses the level of defaults[21] likely to occur under different stresses as a result of idiosyncratic borrower behaviour, employer default, and the decisions of the Italian sovereign. DBRS Morningstar then considers the extent to which insurance policies will mitigate the losses based on the terms of the insurance contracts and the credit strength of insurers.

18. *Trattamento di fine rapport*.

19. *Codice civile italiano* and *Codice di procedura civile italiano* originally introduced in 1942 and subsequently updated and reformed.

20. Where relevant concentration of payment delegations exist on individual defaultable employers DBRS Morningstar may consider additional stresses.

21. In the context of SAL, the term "default" should be understood as a loss of job event or a loss of life event.

Default Risk: Assessment of Generic Default Rate

As with other consumer loans, DBRS Morningstar analyses the historical performance of loans similar to those being securitised to reach an expected case for the default rate and determine appropriate stress multiples for different rating levels[22].

Default Risk: Credit Risk of Private Sector Employers

Besides a borrower's behaviour, a cause of loan default is the failure of the borrower's employer. Provided the securitised pool does not contain any significant exposure to a single employer, the typical analytical framework for consumer loans is used. If a significant proportion of the borrowers are employed by a small number of employers, DBRS Morningstar considers the concentration risk of one or several of the employers defaulting and multiple borrowers losing their jobs by using the *Rating CLOs and CDOs of Large Corporate Credit* methodology, as described herein. The resulting stressed default level is then applied to the portion of the pool with concentrated exposure to employers.

Default Risk: The Special Case of the Italian State

The biggest exposure to a single employer is usually to the Italian state. Employees of the Italian state and sub-sovereigns have strong employment protection, reflected in the result that historical losses on loans to civil servants are usually much lower than those on loans to private sector employees. Furthermore, salary assignments by civil servants automatically convert into pension assignments upon retirement, so the primary risk for loans to civil servants, like pensioners, is death of the borrower (loss of life event).

Contrary to private sector employers, it is unlikely that a default by the Italian state would result in significant job losses amongst civil servants; nonetheless, extraordinary measures are likely to be taken in such event. DBRS Morningstar assumes that significant financial stress would result in reductions in pensions and civil servant salaries (see Table 7). Significant reductions would in all likelihood cause a reduction in the monthly instalments and an extension of the loans. This increases the risk of a borrower's loss of life event during the term of the loan. To obtain an estimate of the incremental balance of defaults in each rating stress case, DBRS Morningstar uses mortality tables[23] to compute the probability of each loan defaulting in each year and multiplies these probabilities by the updated exposure at default for each loan resulting from the relevant reduction[24].

22. DBRS Morningstar uses lower multiples for pension-assignment defaults as mortality risk is a lot less volatile than traditional consumer credit risk.

23. See www.istat.it/

24. Where line-by-line information is not available, DBRS Morningstar uses the pool-level information to determine a conservative assumption regarding the age of borrowers and terms of the loans.

Table 7

Rating Stress Level	Assumed Pension/Salary Reduction and Redundancy Stress
At or below the rating of Italy	0%
1 notch above	10%
2 notches above	20%
3 notches above	30%
4 notches above	40%
5 notches above	50%
6 or more notches above	100%

Default Risk: Publicly Held Private Companies

Employees of private companies owned, partially or fully, by the Italian state (semi- or para-public) also exhibit good historical performance. Nevertheless, DBRS Morningstar believes it is likely that there could be job losses or privatisation in an environment where the Italian state was financially distressed, contrary to civil servants. DBRS Morningstar assumes that the rate of job losses would occur in the same proportion as salary/pension reductions described above in Table 7.

Recoveries

DBRS Morningstar analyses the historical recovery levels[25] of loans similar to those being securitised to determine an expected recovery rate. DBRS Morningstar then considers the terms of the insurance contracts to assess the level of cover in each stressed rating scenario described above, especially in the case of a loan extension as life insurance coverage is typically limited to a certain period of time (e.g., until the 85th birthday of the borrower). DBRS Morningstar assumes no recoveries if death were to occur after the insurance policy expires.

In a SAL the lender seeks protection through insurance cover, but the borrower remains responsible for repaying the full amount due[26]. Amounts that cannot be recovered from the insurance company may still be recovered if the borrower is alive. DBRS Morningstar considers such potential recoveries. However, DBRS Morningstar notes that payment delegation borrowers are usually more indebted and thus unsecured recoveries are likely to be lower.

Recoveries: Credit Risk of Insurers

The collection of recoveries from the insurers depends on their credit performance, so DBRS Morningstar analyses the credit risk of the insurers present in a portfolio using its *Rating CLOs and CDOs of Large Corporate Credit* methodology. Provided the distribution of insurers is broadly similar across the different types of borrowers (i.e., employees of granular private sector, concentrated private sector, public, semi- and para-public sectors, and pensioners), DBRS Morningstar applies the relevant stressed default rate to reduce the recoveries on the defaulting SAL.

For ratings below or at the sovereign's rating, DBRS Morningstar considers the beneficial effect of severance payment collateral. In fact, Italian law provides that amounts set aside and accumulated for the severance payments are held by employers and are deemed payable during liquidation if the employer is insolvent or under receivership, but such amounts are guaranteed by the sovereign state and are assumed payable (although not timely) even in cases of defaulted employers. Credit

25. In the context of SAL, the term "default" should be understood as a loss of job event or a loss of life event.

26. Through the payment of the indemnity the insurance company acquires the right to claim the paid amount from the borrower.

given to severance payments is subject to availability of information and to the existence and validity of the pledge over such amounts. DBRS Morningstar observes that severance payments cannot be validly pledged for some state employees and civil servants.

Liquidity Considerations

When rating securitisations backed by SAL, DBRS Morningstar analyses whether the transaction structure benefits from sufficient liquidity as a mitigant against the potential delay in the payout by insurance companies. Likewise, the transaction structure should provide for sufficient liquidity in a scenario where private or public sector employers and/or pension providers temporarily stop salary and/or pension payments to the borrowers. DBRS Morningstar understands that such a scenario would not qualify as loss of job event or loss of life event, which are insured.

About DBRS Morningstar

DBRS Morningstar is a global credit ratings business with approximately 700 employees in eight offices globally.

On 2 July 2019, Morningstar, Inc. completed its acquisition of DBRS. Combining DBRS' strong market presence in Canada, the U.S., and Europe with Morningstar Credit Ratings' U.S. footprint has expanded global asset class coverage and provided investors with an enhanced platform featuring thought leadership, analysis, and research. DBRS and Morningstar Credit Ratings are committed to empowering investor success, serving the market through leading-edge technology and raising the bar for the industry.

Together as DBRS Morningstar, we are the world's fourth-largest credit ratings agency and a market leader in Canada, the U.S., and Europe in multiple asset classes. We rate more than 2,600 issuers and 54,000 securities worldwide and are driven to bring more clarity, diversity, and responsiveness to the ratings process. Our approach and size provide the agility to respond to customers' needs, while being large enough to provide the necessary expertise and resources.

The DBRS group of companies consists of DBRS, Inc. (Delaware, U.S.)(NRSRO, DRO affiliate); DBRS Limited (Ontario, Canada)(DRO, NRSRO affiliate); DBRS Ratings GmbH (Frankfurt, Germany)(CRA, NRSRO affiliate, DRO affiliate); and DBRS Ratings Limited (England and Wales)(CRA, NRSRO affiliate, DRO affiliate). Morningstar Credit Ratings, LLC is a NRSRO affiliate of DBRS, Inc.

For more information on regulatory registrations, recognitions and approvals of the DBRS group of companies and Morningstar Credit Ratings, LLC, please see: http://www.dbrsmorningstar.com/research/highlights.pdf.

The DBRS group and Morningstar Credit Ratings, LLC are wholly-owned subsidiaries of Morningstar, Inc.