MORNINGSTAR | DBRS

Methodology

Rating European Structured Finance Transactions Methodology

DBRS Morningstar
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Christian Aufsatz
Managing Director
Head of European Structured Finance
+44 20 7855 6664
christian.aufsatz@dbrsmorningstar.com

Ketan Thaker
Managing Director
Head of European RMBS & Covered Bonds
+44 20 3356 1525
ketan.thaker@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 Rating European Structured Finance Transactions Methodology and Appendices" dated 15 July 2022.

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

The following methodology summarises the DBRS Morningstar rating approach typically used to rate European structured finance transactions and is complementary to, and may be used in conjunction with, the DBRS Morningstar asset-specific rating approaches. In cases where DBRS Morningstar solely relies on this methodology for the basis of an initial rating in a new asset class to DBRS Morningstar, asset class analytical considerations and/or assumptions are described in the respective asset class appendix. Additional asset class appendices may be added to this methodology at any time and additional transaction-specific assumptions may be outlined in the transaction disclosure or other DBRS Morningstar reports. These documents as a whole are intended to provide readers with a description of the key analytical considerations and/or assumptions used when rating or monitoring a structured finance transaction.

The key analytical considerations evaluated by DBRS Morningstar generally include the following:

- Operational risk review;
- Collateral quality analysis, including collateral composition and historical performance metrics;
- Transaction capital structure and priority of payments; and
- Legal structure, transaction counterparties, and opinions.

When rating transactions, DBRS Morningstar evaluates the risks posed by the sponsor, key transaction parties, counterparties, and credit quality of the collateral. As part of this analysis, DBRS Morningstar typically performs an operational risk review of the parties involved in the origination and servicing of the assets. An operational risk review provides insight into the processes that may affect the future performance of the securitised assets.

DBRS Morningstar typically analyses the transaction's financial structure under various cash flow stress scenarios to determine the ability of the transaction to repay the related securities in accordance with the terms of the transaction documents. DBRS Morningstar typically reviews the transaction's legal structure and opinions to assess whether the relevant steps have been taken to protect the issuer's and noteholder's interests in and to the assets.

Operational Risk Review

As part of the ratings process, DBRS Morningstar typically conducts an operational risk review to assess the adequacy of the originator's and servicer's infrastructure. While DBRS Morningstar does not assign a rating in connection with operational risk reviews, the results of the operational review are incorporated into the transaction rating process. Key aspects of the DBRS Morningstar operational review process for originators and servicers are summarised herein.

Originator Review

The originator review process evaluates the quality of the parties that originate the loans (leases or receivables) that are to be securitised in a transaction rated by DBRS Morningstar. DBRS Morningstar typically begins the initial originator review process by sending a questionnaire to the company that outlines the topics to be covered during discussions with management and includes a list of documents to be provided, such as organisational charts, financial statements, and underwriting guidelines. In instances where DBRS Morningstar determines that the originator is below average, issuers may incorporate certain structural enhancements into a proposed transaction, such as additional credit support or enhanced representations and warranties, in order for DBRS Morningstar to be able to rate the transaction. In the event that DBRS Morningstar determines that an originator is unacceptable and/or appropriate mitigants are not proposed by an issuer, DBRS Morningstar may not be able to rate the transaction.

The originator review process typically involves a review and analysis of the following:

- Company and management,
- Financial condition,
- Controls and compliance,
- Origination and sourcing,
- Underwriting guidelines, and
- Technology.

For details on the originator review process, please refer to the DBRS Morningstar *Operational Risk Assessment for European Structured Finance Originators* methodology.

Servicer Review

The servicer review process evaluates the quality of the parties that administer and manage the loans, receivables, and/or leases that are about to be securitised in a transaction rated by DBRS Morningstar. The review process may also be extended to backup servicers when applicable.

DBRS Morningstar typically begins the initial servicer review process by sending a questionnaire to the company that outlines the topics to be covered during discussions with management and includes a list of documents to be provided, such as organisational charts, financial statements, and presentations regarding the servicer's operations. In instances where DBRS Morningstar determines that the servicer is below average and potentially unable to meet its servicing obligations, issuers may incorporate certain structural enhancements into a proposed transaction, such as additional credit support, dynamic triggers, or the presence of a backup servicer, in order for DBRS Morningstar to mitigate the risk to a transaction. In the event that DBRS Morningstar determines that a servicer is unacceptable and appropriate mitigants are not proposed by an issuer, DBRS Morningstar may not be able to rate the transaction.

The servicer review process typically involves an analysis of the following:

- Company and management,
- Financial condition,
- Controls and compliance,
- Loan/lease administration,

- Customer service,
- Account maintenance,
- Default management:
    - Collections and
    - Loss mitigation,
- Investor reporting, and
- Technology.

For details on the servicer review process, please refer to the DBRS Morningstar *Operational Risk Assessment for European Structured Finance Servicers* methodology.

Collateral Quality Analysis

In the rating process, DBRS Morningstar assesses the credit quality of the collateral. As part of its analysis, DBRS Morningstar may develop an expected loss figure for each securitised pool. In certain transactions, instead of an expected loss, DBRS Morningstar may develop expected cash flows giving effect to existing contractual receivables at the time of transaction closing and future cash flows expected to be realised post-closing. Where cash flows depend on factors beyond borrower credit quality, DBRS Morningstar considers available information on these factors to develop an expectation.

DBRS Morningstar analyses issuer-specific performance history and pool-specific characteristics provided by an issuer. This often includes historical arrears, defaults, recovery, prepayment data, and repossession data. DBRS Morningstar may also look to compare the issuer's performance with that of other issuers within the same or similar asset classes. DBRS Morningstar typically uses this historical data and information to assess future performance. Preferably, DBRS Morningstar expects issuers to provide loss and/or realised cash flow information, as described below, that covers asset performance during various economic cycles. This enables DBRS Morningstar to assess the impact that general economic factors may have on collateral performance and assess volatility over time. DBRS Morningstar may also analyse the origination and future revenue generation strategies that the originator has employed in the past to assess the degree of applicability of the past performance to the collateral securing a structured finance transaction.

In several asset classes, DBRS Morningstar receives loan-level data for the securitised portfolio that contains relevant information about the borrower, loan, and loan security (if any). If loan-level data is available and used in the analysis, to gain comfort on the accuracy of loan-level data relative to the underlying documents and data specific to each loan, DBRS Morningstar may seek to access Agreed Upon Procedures (AuP), or audit reports, which are performed by an issuer and/or seller for regulatory purposes. In situations where DBRS Morningstar reviews AuP reports, DBRS Morningstar considers the procedures performed for the following: (1) the quantity of the loans reviewed; (2) the confidence level of the tests performed; (3) the nature of the tests performed; and (4) the results of the tests and the nature and quantity of the exceptions. DBRS Morningstar may reflect these results directly in its analysis through additional loan-level or portfolio-level tresses or, in certain situations, may not be able to rate a transaction.

For very granular and homogeneous assets, DBRS Morningstar typically receives pool stratifications that summarise key features of the assets such as interest rates, original and remaining terms, obligor characteristics, seasoning, and any other characteristics necessary to evaluate the credit quality of an asset pool. Ideally, the characteristics of the underlying assets that generate the historical performance data should reflect the characteristics of the pool as closely as possible; however, DBRS Morningstar recognises that pools with similar summary characteristics can demonstrate different performance. DBRS Morningstar prefers that originators/sellers have the reporting capability to provide static pool performance data that can be stratified by various attributes. In cases where sufficient performance detail has been provided, DBRS Morningstar may refine its analysis by using the data to determine a more precise loss and/or cash flow estimate for each distinct component of the pool and then use this result to develop an expected loss and/or cash flow generation expectation for the securitised pool based on the relative contribution of each segment.

Historical Performance

In the assessment of expected future collateral performance, DBRS Morningstar typically analyses historical performance data provided by the originator/seller and compares the originator's experience with the performance of industry peers (if available), as well as general economic trends. DBRS Morningstar typically uses this historical data and information to assess future collateral performance. Preferably, DBRS Morningstar expects originators to provide separate default and recovery rate experience or realised cash flow (gross and net of recovery-related expenses, as applicable) that covers asset performance during various economic cycles. This data and information assists DBRS Morningstar in assessing the impact that general economic factors may have on collateral performance. By assessing default and recovery rates separately, DBRS Morningstar can gain additional insight into the unique factors that affect default and recovery rates. In addition, DBRS Morningstar can also better understand the volatility drivers behind each set of data and information and develop more refined rating stresses. Separating any recovery-related expenses from the gross realised cash flows may provide better insight into the projected ability of a special-purpose vehicle (SPV) to service its debt obligations after paying the fixed and expected servicing and/or asset management expenses during the recessionary periods. To the extent that only net loss or gross realised cash flow data are available, DBRS Morningstar typically applies adjustments to the data presented that take into account historical recoveries and/or recovery-related asset management expenses.

DBRS Morningstar seeks to receive historical data with granularity across the key risk components of the pool. Such granularity may include defining appropriate stratifications or pooling data by cohort relevance. While aggregate pool characteristics may differ by transaction, subpools within the aggregate pool likely share characteristics that aid in the determination of expected losses or expected future cash generation of the pool. DBRS Morningstar may request an issuer to segregate historical static pool performance data and the securitisation pool into subpools of these common collateral characteristics. In cases where sufficient performance detail has been provided, DBRS Morningstar may refine its loss and/or cash realisation analysis by using the data to determine an expected loss estimate for each distinct subpool, then use this information to develop an expected loss and/or cash flow generation expectation for the securitised pool based upon the relative contribution of each subpool.

Developing Assumptions/Expectations

While it may vary by asset class, originator, or sector, DBRS Morningstar typically requests performance history from an asset originator to develop rating assumptions and perform a rating analysis. In the absence of asset originator-provided data, DBRS Morningstar typically requests supplemental data to support its expectations/assumptions. Where the performance history for the originator's assets is insufficient, DBRS Morningstar may consider proxy data, such as the performance of similarly originated assets from another originator (or originators) deemed comparable. In cases where originator-specific data is unavailable, DBRS Morningstar is likely to use a higher expected loss and/or lower realised cash flow expectations than would otherwise be the case. DBRS Morningstar may also seek additional data from industry sources to assist in development of an expectation for defaults, losses, or cash flow reductions. In the absence of adequate comparable performance information, DBRS Morningstar may not be able to rate the transaction.

DBRS Morningstar assesses the provided performance information to determine if the attributes of the pool are similar to the attributes of the pools underlying the performance data. If the data is deemed sufficient, DBRS Morningstar may use the provided performance data to construct an expected loss and/or cash flow generation expectation.

DBRS Morningstar generally determines estimates that reflect historical performance of the relevant assets and, where appropriate, adjusts for other drivers of performance. DBRS Morningstar may consider factors affecting performance, such as the economic environment, variations in asset value, and changes in origination or servicing practices during the life of the assets. DBRS Morningstar may also consider performance of other originators operating in the same markets and review the volatility of performance for similar assets.

When the cash flow characteristics of assets are primarily dependent on factors other than the ability and willingness of an obligor to pay, DBRS Morningstar develops an expected case or estimate for the relevant risk factor or variable to establish a baseline cash flow scenario.

Transaction Financial Structure

The DBRS Morningstar rating analysis focuses on the assessment of credit enhancement available to support the securities issued in connection with the transaction and the relative ranking of the issuer's obligations, which is usually provided from in the priority of payments and may include triggers related to asset performance. Credit support can be provided in various forms including overcollateralisation (OC), excess spread, reserve accounts, and subordination, each of which is discussed in greater detail in the next section. Transactions may also include third-party support agreements, such a guarantees or surety insurance.

Forms of Credit Enhancement

Subordination

European structured finance transactions typically include multiple classes (i.e., tranches) of debt where the noteholders have either senior or subordinate claims on collateral cash flows. Including subordinate debt in the SPV's capital structure creates protection for the more senior noteholders. Collateral losses are typically applied in reverse order, with the most junior bond absorbing losses first. The most senior bond will be the last bond to absorb losses and will receive principal payments ahead of the other bondholders given its priority claim on the collateral. The holders of senior tranches have priority over junior tranches in respect of payments due, enforcement claims, and/or acceleration of the debt until the claims of the holders of the senior tranches are satisfied.

Excess Spread

Another form of credit enhancement which may be present in a transaction is excess spread. Excess spread arises when the amount that the SPV pays in respect of its liabilities is less than the yield amount it receives from the underlying assets (excess spread). The transaction may be structured such that, in certain circumstances, the SPV retains some or all of excess spread through the mechanism of trapping in a reserve fund or a principal deficiency ledger (PDL), thus improving the credit enhancement available to the rated securities it issues[1].

Reserve Funds

Transactions may be structured with one or more reserve funds. The purpose of the reserve funds is to supplement the cash flows from the collateral and to provide liquidity and/or credit support to one or more classes of securities. Reserve funds are typically funded at issuance although they can also be designed to trap excess spread until a targeted balance is achieved. Reserve funds are typically held in a deposit account with an eligible institution and are invested in high-quality, short-term securities. Reserve funds can provide liquidity to a transaction when there is a sharp spike in arrears or losses.

Overcollateralisation

OC refers to situations where the SPV issues securities in an amount less than the value of the collateral (meaning the advance rate is less than 100%) and where the SPV's securities are overcollateralised in terms of face values. OC is available if the assets of the SPV are greater than its liabilities. Consequently, when some assets do not perform or the assets have to be liquidated sufficient assets may still be available to cover the SPV's remaining obligations.

Financial Guarantee or Surety Insurance – (Wraps)

Transactions may include a financial guarantee or surety insurance from a third party to provide additional credit support. DBRS Morningstar assesses the value of any additional credit enhancement provided by such insurance on a case-by-case basis. In order for DBRS Morningstar to rate a security on the basis of the guarantor's credit strength, DBRS Morningstar would expect the guarantee to present the same characteristics as those listed under the "Guarantees" subsection in the "Transaction Parties" section of DBRS Morningstar's *Legal Criteria for European Structured Finance Transactions* methodology, available at www.dbrsmorningstar.com.

1. For instance, it is common in RMBS or ABS transactions to have a PDL to record losses taken on the underlying assets. Excess spread is then used to reduce the losses accumulated in the ledger on an ongoing basis. Excess spread may also be used to ensure that reserve accounts remain funded at target levels.

Liquidity Facilities

Liquidity facilities from an eligible institution can be an essential part of structured finance transactions to cover temporary cash flow interruptions. However, to the extent that liquidity facility draws have to be repaid senior in the priority of payments when collections become available, the liquidity facility provides temporary liquidity versus credit enhancement. See the "Liquidity Providers" section in DBRS Morningstar's *Legal Criteria for European Structured Finance Transactions* methodology.

Priority of Payments

The priority of cash flow payments for a European structured finance transaction depends on the type of payment structure employed in that transaction. On a periodic basis, cash collections from the collateral are aggregated and then distributed to noteholders based on the priority of payments established in the transaction documents. Interest and principal collections may be required to be segregated and passed through the payment waterfall as either interest collections or principal collections, or the transaction documents may require that interest and principal collection be combined and then passed through one waterfall. Once the amount of available funds is determined, such funds pass through a payment waterfall that allocates collections in descending order of priority. Recurring transaction expense items, such as servicing and trustee or transaction management fees, are commonly senior in the waterfall, after which noteholders receive interest and principal.

The allocation of interest payments due to noteholders is typically sequential. There are two common methods for allocating principal payments in a transaction structure—sequential and pro rata pay. A sequential-pay structure provides for all principal collections to be allocated to the senior-most class and the shortest maturing class in the case of time-tranched senior classes, until it is paid in full. Time-tranched classes typically switch to pro rata/pari passu upon default of the SPV. In a sequential-pay structure, after senior bonds have been repaid in full, available funds are then directed to the next most-senior class outstanding. With a pro rata structure, principal payments are made pro rata to the noteholders to maintain constant credit enhancement levels. However, pro rata pays structures typically contain a performance trigger mechanism that, when breached, requires principal payments to the noteholders to be made in sequential order. Such triggers can be irreversible or reversible. Some European structured finance transactions are initially sequential pay but can, subject to performance tests, switch to pro rata pay when a certain credit enhancement level is reached. Typically, such structures contain a performance mechanism that, when breached, the transaction switches back to sequential pay.

An example of a typical (simplified) payment priority under a sequential-pay structure is as follows:

1. Trustee, custodian, backup servicer, and other fees up to a specified limit (as applicable);
2. Servicing fees and any servicing transition fees to any successor servicer up to a specified limit (if applicable);
3. Interest in order of seniority;
4. Principal in order of seniority;
5. Amount, if necessary, to be deposited into the reserve fund if it is below a target balance; and
6. Any remaining amounts to the residual noteholder (seller or sponsor).

Losses are allocated in reverse priority order. Losses that exceed any amounts in a reserve account or the current period excess spread are absorbed by the most junior note (e.g., by principal writedown or by debiting the class' PDL). Once the most junior note is written down completely or its cumulative PDL debits reach the class' outstanding principal balance, losses will be absorbed by the next most-junior class of notes. Likewise, if the transaction structures allows for principal proceeds to pay interest, such principal deficiencies are allocated reverse sequentially to the notes, either by writedown or by PDL debit.

Some transactions also include swaps. In these cases, the net swap payments (other than termination payments) typically rank senior in the priority of payments. In the event that the swap terminates, the ranking of any termination payment typically depends on the on which party defaulted on the swap. When the SPV is the defaulting party, the swap termination payment is typically senior in the priority of payments. When the swap provider is the defaulting party, the swap termination payments are generally expected to be subordinated to payments of interest and principal on the rated securities. For more details, please refer to DBRS Morningstar's *Derivative Criteria for European Structured Finance Transactions* methodology. As mentioned, European structured transactions may contain liquidity facilities to bridge temporary cash flow shortfalls. Commitment fees, interest due on drawn amounts, and typically also the repayment of liquidity draws rank senior in the priority of payments.

Transaction Performance Thresholds and Triggers

Depending on the structure of a transaction, performance thresholds or triggers can mitigate the risk arising from deteriorating collateral performance. Performance triggers are designed to increase credit enhancement levels beyond what is initially included in the transaction, enabling the transaction to absorb more losses or to change payment priorities to accelerate repayment of the rated notes and/or create added protection for the more senior tranches. The degree to which triggers are beneficial in building additional credit enhancement or changing payment priorities depends on the level at which the triggers are set and the available transaction cash flows.

Transaction triggers may be based on managed portfolio and/or transaction pool performance and may measure levels of current delinquencies, defaults, and/or losses or cash flow shortfalls as well as cumulative defaults and/or losses. Other kinds of triggers can be based on the maintenance of certain enhancement levels at or above predefined levels. DBRS Morningstar typically assesses the transaction cash flows that incorporate transaction trigger mechanisms in its rating analysis.

Asset Eligibility Criteria

It is common for structured finance transactions to set forth eligibility criteria for the collateral. Asset eligibility criteria is one structural mechanism used to ensure that the assets are eligible for securitisation, that asset quality is consistent, and that increase the likelihood of the pool to perform as expected. These criteria establish a standard for asset composition and are a particularly important part of maintaining consistency in asset quality for transactions where new assets are permitted to be added to the transaction or the transaction includes a revolving period. Common eligibility criteria typically address the following items:

- Assignability of Assets: Assets are freely assignable subject to proper notice to or consent from the underlying obligor;

- Delinquencies: Assets are not in arrears (for more than a specified period) or defaulted;
- Concentrations Levels: Assets are subject to certain specified concentration limits (obligor, asset type, and geographical);
- Asset Type: Specification of asset class, loan collateral, repayment type, etc.;
- Compliance with Origination Guidelines: Assets have been originated according to the written credit and collection policies;
- Title: The originator and/or seller holds valid legal title to the assets;
- Security: No liens, encumbrances, or other security exists over the assets (other than certain permitted encumbrance);
- Set-Off Risk: The assets are not subject to set-off or other defences to payment, unless the risk is otherwise mitigated;
- Taxes: No tax liabilities arise because of the transfer of the assets from an originator or seller to the seller to the SPV and no withholding tax will be imposed on payments made by the underlying debtors to the SPV;
- Enforceability: The assets create legal, binding, and enforceable obligations on the underlying debtors (subject to applicable insolvency laws);
- Compliance with Applicable Laws: The assets comply with and have been originated in compliance with all applicable laws, including all relevant consumer and data protection regulations;
- Minimum and Maximum Terms of the Asset;
- Minimum and Maximum Asset Balance;
- Asset Cash Flows: Minimum interest rate requirements or excess spread levels; and
- Limits on Newly Originated Loans.

Different or additional eligibility criteria may be appropriate, depending on the relevant transaction and asset class. For revolving transactions where the addition of new assets is permitted after the initial transfer of assets, DBRS Morningstar analyses the asset eligibility and incorporates its view on the likely long-term portfolio composition.

Financial Covenants

Certain transactions may include financial covenants related to the financial stability of the originator and/or servicer during the life of a structured finance transaction. To the extent that a transaction includes such covenants, DBRS Morningstar assesses the potential impact of financial covenants and how they relate to the financial health of the originator and/or servicer during the remaining life of the transaction. In the event that a transaction does not include sufficient financial covenants, the issuer may incorporate covenants that provide greater protection to noteholders. DBRS Morningstar evaluates financial covenants, or lack thereof, on a case-by-case basis.

Cash Flow Analysis

DBRS Morningstar typically performs cash flow analysis to assess whether the transaction cash flow and structure are adequate to make the contractually agreed payments on the rated notes. DBRS Morningstar's cash flow analysis reflects the transaction priority of payments waterfall and trigger mechanisms, if applicable. DBRS Morningstar may apply a variety of stresses to the cash flows to simulate the impact of adverse conditions during the remaining life of the assets. The cash

flows may be expected to withstand a stressed loss level, or a haircut to an expected-case cash flow, commensurate with a specific rating level.

DBRS Morningstar typically devises stresses by reference to the historical trend and variability of the relevant driver of default, losses, or cash flows. A stress is an elevated level of default, loss, or risk variable determining the expected cash flow. Such elevated level is consistent with a given rating if DBRS Morningstar is of the opinion that the likelihood of the variable taking a value that would place the issuer in a worse position is sufficiently small. DBRS Morningstar may make distributional assumptions about the variable under consideration and derive stresses from such a distribution by reference to the default rates contained in DBRS Morningstar's Idealised Default Table (IDT).

Exhibit 1 DBRS Morningstar Idealised Default Table (%)

	Tenor (Years) 5									
Rating	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
AAA	0.0110	0.0264	0.0460	0.0699	0.0987	0.1330	0.1736	0.2212	0.2765	0.3405
AA (high)	0.0161	0.0390	0.0691	0.1071	0.1539	0.2107	0.2784	0.3580	0.4501	0.5554
AA	0.0212	0.0517	0.0922	0.1442	0.2091	0.2883	0.3832	0.4948	0.6237	0.7703
AA (low)	0.0281	0.0709	0.1297	0.2055	0.2994	0.4123	0.5445	0.6962	0.8672	1.0571
A (high)	0.0419	0.1095	0.2045	0.3280	0.4801	0.6602	0.8671	1.0991	1.3543	1.6306
A	0.0487	0.1287	0.2419	0.3893	0.5704	0.7841	1.0283	1.3005	1.5978	1.9173
A (low)	0.0945	0.2420	0.4391	0.6815	0.9643	1.2825	1.6309	2.0045	2.3990	2.8101
BBB (high)	0.1860	0.4685	0.8333	1.2659	1.7521	2.2792	2.8359	3.4126	4.0013	4.5956
BBB	0.2318	0.5818	1.0305	1.5581	2.1460	2.7776	3.4384	4.1166	4.8024	5.4884
BBB (low)	0.3732	0.8912	1.5142	2.2099	2.9528	3.7230	4.5053	5.2884	6.0636	6.8252
BB (high)	1.0800	2.4384	3.9327	5.4686	6.9863	8.4500	9.8400	11.1473	12.3697	13.5091
BB	1.3627	3.0573	4.9001	6.7721	8.5997	10.3408	11.9738	13.4908	14.8921	16.1826
BB (low)	2.2346	4.7297	7.2541	9.6836	11.9572	14.0507	15.9604	17.6938	19.2641	20.6863
B (high)	3.6297	7.4056	11.0204	14.3419	17.3292	19.9866	22.3389	24.4186	26.2592	27.8922
B	4.8503	9.7471	14.3160	18.4179	22.0296	25.1805	27.9201	30.3028	32.3799	34.1974
B (low)	10.0776	17.6609	23.5135	28.1371	31.8670	34.9314	37.4891	39.6528	41.5044	43.1047
CCC (high)	18.7898	30.8505	38.8426	44.3357	48.2625	51.1831	53.4376	55.2363	56.7119	57.9502
CCC	22.2746	36.1264	44.9743	50.8151	54.8208	57.6837	59.8169	61.4696	62.7949	63.8884
CCC (low)	61.1373	68.0632	72.4872	75.4076	77.4104	78.8419	79.9085	80.7348	81.3974	81.9442
C	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000	100.0000

The extent of the stress on losses or the magnitude of the cash flow haircut commensurate with a specific rating level varies based on a set of factors, including the absolute level of a pool's collateral quality and expected loss figure, industry position of the sponsor, results of an operational risk assessment of the originator and/or servicer, sufficiency and quality of the issuer provided and DBRS Morningstar-sourced data and information, structural features of a transaction, and expected economic conditions.

When the cash flow characteristics of assets are primarily dependent on factors other than the ability and willingness to pay of an obligor, DBRS Morningstar develops rating-related stressed levels for the relevant factor or variable to construct stressed cash flow scenarios. The stress levels

applied by DBRS Morningstar and haircuts used to achieve a specific rating level are asset and issuer specific and are evaluated for each transaction.

DBRS Morningstar cash flow analysis typically involves combinations of stresses on key assumptions, which will be discussed below.

Timing of Defaults/Losses

DBRS Morningstar may use one or more default or loss timing curves, based on historical performance of the assets or asset analysis, for the distribution of defaults or losses over time. These curves are combined with various prepayment and interest rate assumptions to produce several scenarios.

Recovery Timing

When applicable, DBRS Morningstar typically lags recovery timing to reflect the likely delay in realising proceeds from the disposition of defaulted assets. Scenarios often incorporate delays in receiving recoveries that could occur due to the length of the liquidation process, assumed servicing disruption, or transition.

Timing of Cash Flow Generation Stress

Similar to default timing curves, DBRS Morningstar may use several timing curves based on historical performance of the assets for the application of haircuts to the projected cash flows to be generated in the future. In case of assets with a longer useful life, DBRS Morningstar may apply several stressed periods, over which haircuts of different severity may be applied during the life of a transaction. These curves are often combined with various prepayment and interest rate assumptions to produce several scenarios for use in cash flow analysis.

Prepayments

Where applicable, prepayment speed, which can be expressed using either absolute prepayment speed or conditional prepayment rate, measures the rate at which borrowers make their principal payments in excess of required contractual amounts. Prepayments reduce the outstanding principal balance of the collateral pool, which may result in reduced amounts of excess spread. In such instances, the faster prepayment speed, the larger the amount of excess spread that is depleted. DBRS Morningstar may look to receive monthly principal payment rate data to develop prepayment rate assumptions. This assumption may be adjusted based on asset class performance factors or general economic factors and may be subjected to stress ranges commensurate with the rating of each class in cash flow analysis.

Residual Realisation/Collateral Liquidation Proceeds

For European structured finance transactions that advance against booked residual values or rely on the value of the pledged collateral for repayment of the debt, DBRS Morningstar may incorporate residual and/or collateral liquidation assumptions in its cash flow analysis. DBRS Morningstar may apply a haircut to a corresponding expected-case assumption, such as booked residual or an appraised liquidation value, commensurate with the analysed rating level. In addition, DBRS Morningstar may lag collateral realisation timing to reflect the anticipated delay in realising proceeds from the disposition of the collateral assets. The magnitude of stresses applied by DBRS

Morningstar may be dependent on a variety of factors, including: collateral type, strength of foreclosure and liquidation right provisions, initial value assigned to collateral, historical performance of collateral realisation, and/or availability and proven accuracy of the third-party valuation sources.

Contingent Claims

Certain assets give rise to claims that are contingent on certain events other than borrower default. For securitisations of such assets, DBRS Morningstar determines a stressed timing for such events or stressed levels for such variables to be applied in combination with other cash flow stresses.

Interest Rate Risk

DBRS Morningstar may stress transaction cash flow to compensate for the interest rate risk the transaction may be subjected to during the life of the assets. There are two main types of interest rate risks that DBRS Morningstar considers: interest rate mismatch and basis risk.

Interest Rate Mismatch

Interest rate mismatch (e.g., fixed versus floating) occurs when the interest rate terms on the underlying collateral (i.e., asset yield) are different from the coupon on the notes issued (i.e., cost of funds), or where the assets are non-interest bearing.

Basis Risk

Basis risk arises when the basis for calculating interest charged on the securitised assets or swap contract is different from the basis for calculating interest charged on the notes issued (e.g., Euro Overnight Index Average or EONIA versus Euro Interbank Offered Rate or Euribor). Basis risk may also arise where the index is the same but tenors are different (e.g., assets paying one-month Euribor and liabilities paying three-month Euribor).

Basis risk can also occur where the date for setting the interest rate on the assets differs from the date on which the rate is setting for the interest rate on the liabilities. This risk can be increasingly acute as leverage for a transaction increases. DBRS Morningstar typically analyses historical movements on related indices and may apply additional stress to assess the impact on the transaction of a sharp and untimely adverse rate movement.

If the transaction does not include a derivative agreement to hedge interest rate risk, DBRS Morningstar may apply additional stresses to the transaction cash flows to simulate a stressed interest rate environment. DBRS Morningstar typically applies a series of interest rate curves to assess the sensitivity of any unhedged portion of the structure to interest rate volatility. The interest rate curves are described in DBRS Morningstar's *Interest Rate Stresses for European Structured Finance Transactions* methodology and typically reflect both upward and downward stresses. An interest rate stress curve is typically applied to the cash flow stress scenario for each rating category.

Foreign Currency Risk

DBRS Morningstar assesses risks that arise when the cash flows collected from the collateral are in a different currency than the required payments on the issued debt. Similarly, currency risks can

arise if a borrower's income or assets are in a currency different from the loan currency. In circumstances where foreign currency risk exists and no appropriate derivative agreement is included in the transaction structure to mitigate the risk, DBRS Morningstar may apply additional stresses to the transaction or loan portfolio cash flows, as described in its *Currency Stresses for Global Structured Finance Transactions* methodology.

Swaps/Hedging

In the event that a transaction relies on a derivative agreement to hedge interest rate or currency risk, DBRS Morningstar reviews the transaction documentation, assesses the credit quality of the counterparty relative to the DBRS Morningstar counterparty financial strength expectations, and considers the impact of the hedging arrangement in the rating analysis.

For further details on the DBRS Morningstar counterparty criteria, please refer to the DBRS Morningstar *Derivative Criteria for European Structured Finance Transactions* at www.dbrsmorningstar.com.

Transaction Liquidity

In its cash flow analysis, DBRS Morningstar considers the availability of liquidity to pay interest due on the notes in case of temporary cash flow shortfalls. Such liquidity provision can be in the form of cash reserves, liquidity facilities, or principal to pay interest provisions, for example. The purpose for such liquidity provisions is to bridge temporary cash flow shortfalls in the transaction. As DBRS Morningstar has very low tolerance for missed interest payments in respect of the highest two rating categories, sufficient liquidity provisions are particularly important for European structured finance transactions rated in the highest rating categories with elevated counterparty risk, highly concentrated collateral portfolios, collateral that exhibits irregular payment patterns, and/or collateral portfolios that are expected to generate relatively less cash flow initially.

Sovereign and Country Risk

When considering sovereign risk in structured finance rating analysis, DBRS Morningstar uses a case-by-case approach that is jurisdiction specific and asset class specific, with the risks and protections of each transaction identified and considered. Sovereign risk can manifest in securitisations in a variety of forms from the effect that the overall economy of the region has on loan repayment behaviour of borrowers to downgrades of key transaction counterparties that may be owned, partially owned, or implicitly supported by the state.

From a jurisdictional standpoint, DBRS Morningstar incorporates the probability of a sovereign default into its structured finance rating analysis by applying a sovereign-related stress component to its stress scenarios. The "stress scenario regime" manifests itself in the form of increased levels of assumed losses (higher defaults and/or lower recoveries) and higher assumed default correlations, among other assumptions, and reflects the characteristics of the types of assets securitised. For a more detailed discussion of the sovereign risk impact on Structured Finance ratings, please refer to Appendix C: The Impact of Sovereign Ratings on Other DBRS Morningstar Credit Ratings of the *Global Methodology for Rating Sovereign Governments*, available on www.dbrsmorningstar.com.

Transaction Legal Structure

DBRS Morningstar typically analyses the legal structure of the transaction by reviewing the primary and ancillary transaction documents as well as all relevant legal opinions. The analysis aims to identify any potential impediments to the cash flows from the issuer's assets being made available to the debtholders in accordance with the transaction's provisions. This analysis includes assessing the segregation and valid transfer of the assets, bankruptcy remoteness of the issuer, validity of any security granted to the noteholders or their representative, and the financial covenants or minimum rating requirements placed on the transaction parties. For a description of the analysis of the transaction legal structure, please refer to DBRS Morningstar's *Legal Criteria for European Structured Finance Transactions* methodology.

Counterparty Minimum Rating Criteria

Securitisation transactions may rely on the performance of third parties, such as servicers, swap counterparties, liquidity providers, trustees, or account banks. DBRS Morningstar assesses the creditworthiness of the counterparties to assess whether each participant maintains financial strength commensurate with transaction ratings. See DBRS Morningstar's *Derivative Criteria for European Structured Finance Transactions* and *Legal Criteria for European Structured Finance* methodologies for additional information regarding the DBRS Morningstar approach to evaluating transaction counterparties.

Legal Final Maturity Dates

DBRS Morningstar typically assesses terms of the transaction and considers the ability of the transaction to pay interest as required on each payment date and to repay principal in accordance with the terms of the transaction. The legal final maturity date for a security is the last possible date that a security could be paid off in full without experiencing an event of default. The legal final maturity date determination typically considers all cash flow stress scenarios that may extend the maturity of a security. The considerations include payment deferrals, extensions, legal, and/or procedural recovery delays and other considerations that could potentially delay receipt of receivable payments and extend maturity dates. The specific legal final maturity dates for rated securities are evaluated for each transaction.

Surveillance/Monitoring

Once DBRS Morningstar assigns an initial final rating to a security, the surveillance process begins and continues for as long as DBRS Morningstar maintains a rating on the security. Data obtained from trustee/servicer reports and trusted third-party sources is used to analyse performance trends, compare actual performance with DBRS Morningstar's initial expectations and forecasted collateral behaviour, and its impact on the rated securities. For key transaction parties and sovereign entities, DBRS Morningstar reviews each entity's public rating(s), DBRS Morningstar private ratings or internal assessment(s) and other qualitative considerations.

To the extent necessary, DBRS Morningstar reassesses the baseline loss or cash flow expectations, described in the section Collateral Quality Analysis, and the stressed loss or cash flow levels,

described in the section Cash Flow Analysis, in light of the new asset performance data and any other relevant new information and may revise these expectations and stressed levels.

DBRS Morningstar generally discusses its surveillance approach in DBRS Morningstar's *Master European Structured Finance Surveillance Methodology*. For additional information regarding the DBRS Morningstar approach to surveillance, please see the Structured Finance Ratings Surveillance Global Policy at www.dbrsmorningstar.com.

Appendix 1: European Reverse Mortgages

This appendix highlights the key analytical factors that may be considered when assigning ratings to European reverse mortgage securitisations. This appendix is a supplement to, and should be used in conjunction with, the *Rating European Structured Finance Transactions* methodology.

Credit Factors to Consider

Pool Characteristics

- Loan characteristics,
- Age of borrowers,
- Borrower characteristics that affect mortality and morbidity rates,
- Property valuations, and
- Individual and geographic concentrations.

Transaction Structure

- Priority of payments,
- Available sources of liquidity, and
- Servicing arrangements.

Cash Flow Assumptions

- Expected and stressed mortality and morbidity rates and
- Expected and stressed property price evolution.

Summary

Reverse mortgage loans, also known as equity release loans, are loans that are repaid solely from the proceeds of sale of a mortgaged property upon death of the borrower or when the borrower moves out. In its simplest form, a reverse mortgage loan entails a single upfront advance to a single borrower. The loan then accrues interest, which gets added to the loan balance, until the borrower vacates the property and the loan becomes due. The property is then sold and the loan is repaid from the proceeds. Loans are also extended to joint borrowers with the repayment of the loan coming due when both borrowers are deceased or have moved out of the property.

The analysis of securitisations of reverse mortgage loans focuses on (1) expected and stressed values of mortality and morbidity rates of the borrowers, (2) expected and stressed values of property prices, (3) the granularity of the securitised pool, (4) available sources of liquidity, and (5) generic structured finance legal and structural considerations.

Collateral Performance Drivers

The cash flows produced by a pool of reverse mortgages depend primarily on the time each loan becomes due and the value of the property at the time of the subsequent sale. The cash flows may also be affected by the levels of interest rates. DBRS Morningstar develops rating-specific stressed values for these collateral performance drivers and computes the resulting series of cash flows (or cash flow vector). DBRS Morningstar then conducts a cash flow analysis of the liabilities of the securitisation to establish whether individual tranches of notes would be paid on time and in full in the different stress scenarios. This analysis reflects the transaction structure including the availability of credit and liquidity support to the securitisation.

Timing of Maturity of the Loans

Loan maturities are dictated by the time at which the borrower (or joint borrowers) vacates the property. This could be due to death, moving into long-term care (known as a morbidity event), or simply a decision to move. In most cases, a later maturity date of the loan means a greater accrued balance and a greater likelihood that the sale price of the property will be insufficient to repay the loan. In analysing a securitisation of reverse mortgage loans, DBRS Morningstar establishes stressed expectations for the rate of incidence of the events leading to loan maturity. These stressed rates of incidence in turn imply an expected maturity profile for a pool in the relevant stressed scenario.

Mortality Rates

To establish stressed mortality rates, DBRS Morningstar starts from an appropriate base mortality table for each gender. Mortality statistics are compiled by public agencies or professional bodies and are typically publicly available at the jurisdiction level, by age, and by gender. Because reverse mortgage borrowers are property owners, they tend to be a wealthier subsection of a country's population. Wealth is usually correlated with life expectancy, so it would not be prudent to use mortality rates established for the whole population of the country.

When the originator of a pool of reverse mortgage loans can provide a table of estimates of its borrowers' mortality rates and can justify to DBRS Morningstar's satisfaction that these estimates are prudent, DBRS Morningstar uses such a table or an adjusted version of it as its base assumption. When such a table is not available, DBRS Morningstar uses publicly available mortality tables and adjusts them to reflect the bias of the borrowers relative to the general population by treating borrowers as younger than they are. For instance, 60-year-old borrowers may be treated as if they were 55 years old. The size of the adjustment depends on the underwriting practices of the originator, the heterogeneity of life expectancies within the home country of the borrowers, and the gender of the borrowers. Adjustments are typically between one and six years for males and between one and three years for females.

Mortality Rate Stresses

Mortality rates at a specific age have historically decreased over time thanks to progress in medicine, healthcare, and hygiene, amongst other reasons. Having established an appropriate set of base mortality rates, DBRS Morningstar stresses mortality rates by assuming heightened levels of mortality rate reduction. Historical levels of annual mortality rate reduction are in the range of 1% to 2% for most European countries[2]. DBRS Morningstar typically applies stresses to these levels and uses mortality rate reduction assumptions that range from 2% to 10%, depending primarily on the rating scenario under consideration[3].

Depending on the borrowers' age distribution and liability structure of the proposed transaction, DBRS Morningstar may apply additional stresses to the cash flows to reflect the potential for a medical breakthrough that would not be captured by the gradual reduction in mortality rates, despite these being stressed.

Morbidity Rates

Data on morbidity rates is less readily available than data on mortality rates. DBRS Morningstar uses base morbidity rate estimates provided by the originator (or an adjusted version thereof) when the originator can justify to DBRS Morningstar's satisfaction that these estimates are prudent. When such estimates are not available, DBRS Morningstar refers to available market data on the rate of entry into long-term care to establish a base case. DBRS Morningstar will typically apply a haircut to the base morbidity rate estimates, with larger haircuts applied to higher rating categories.

Other Causes of Loan Maturity (Prepayments)

Borrowers may also decide to vacate their property for reasons unrelated to their health. When the originator of a pool of reverse mortgage loans can provide estimates of the rates at which borrowers vacate properties for causes other than death or ill health and can justify to DBRS Morningstar's satisfaction that these estimates are prudent, DBRS Morningstar uses such estimates or an adjusted version of these as its base assumption. DBRS Morningstar applies stresses to these base rates when constructing a rating scenario by applying a haircut. The haircuts are determined by assessing the variability of the originator's historical data and the characteristics of the securitised portfolio and vary by rating level. When no estimates of the rate of maturity unrelated to borrowers' health is available, DBRS Morningstar typically assumes the rate to be zero.

Joint Borrowers

Where a loan is extended to joint borrowers such that the loan matures upon both borrowers vacating the property, DBRS Morningstar will consider any estimate and evidence of correlation between the mortality and morbidity of joint borrowers provided by the originator and determine a prudent level of correlation that may be used as a base case. This level is then reduced for higher rating scenarios. In the absence of any originator-specific evidence, DBRS Morningstar typically assumes no correlation.

2. Approximate average based on data from Eurostat covering seven European countries for a period of 20 to 25 years ending in 2015 (https://ec.europa.eu/eurostat/).
3. DBRS Morningstar established the range of stresses by running a simulation using historical sampling with replacement of the mortality rate reductions contained in the Eurostat data referenced above. Different percentiles of the distribution of compounded annualised improvement rates were recorded by reference to the idealised default rates associated with each rating category, as contained in DBRS Morningstar's IDT.

Property Values and Sale Proceeds

The value of the property at the maturity of the loan and the cost of realisation determine the proceeds available to repay the loan. When analysing a reverse mortgage securitisation, DBRS Morningstar typically uses market value declines (MVDs) derived in accordance with its jurisdiction-specific residential mortgage loan methodologies and uses the same distressed sale discount and liquidation cost assumptions it uses for residential mortgage-backed securities, as these are described in the published methodology applicable to the jurisdiction of the properties. DBRS Morningstar may adjust these to reflect the specificities of a particular pool or if presented by the originator or servicer with convincing evidence to suggest that different assumptions would be prudent (e.g., evidence of lower distressed sales discount or liquidation costs). DBRS Morningstar typically assumes the MVD occurs early in the transaction, after which home prices are assumed to increase at historical rates of inflation observed for the country. Lower inflation rates are assumed in higher rating scenarios.

With regard to the distressed sales discount, DBRS Morningstar considers that property sales in reverse mortgage loan securitisations are not necessarily in a distressed scenario. However, a discount to market value might be nevertheless prudent, taking into account the potential of neglected maintenance. In terms of timing of the property sale after the borrower(s) have moved out, DBRS Morningstar considers historical data of the servicer and insight gained during the operational review.

Granularity of the Pool

The stressed maturity profile computed based on the stressed mortality and morbidity rates described in this methodology immediately applicable to a very granular pool where the fraction of borrowers experiencing mortality and morbidity events is likely to be equal or very similar to the mortality and morbidity rates. For a more concentrated pool, discrete mortality and morbidity events will result both in lumpy cash flows and the potential for reduced collections. As a result, the securitisation issuer may not have sufficient monies to remain current on its liabilities[4] and may ultimately receive a reduced total cash flow. DBRS Morningstar stresses the cash flows of securitisations of concentrated pools of reverse mortgages by offsetting the cash flows previously computed by a number of months, effectively assuming the issuer receives no cash for that initial period of time. This lag depends on the pool's granularity, measured by its Herfindahl score[5], and typically ranges from three to 12 months for very granular pools (with a Herfindahl score over 10,000) and from 18 to 36 months for concentrated pools (with a Herfindahl score below 500).

Interest Rates

DBRS Morningstar applies stresses to interest rates to test a securitisation's ability to withstand increasing and decreasing interest rate curves. The stresses are described in DBRS Morningstar's *Interest Rate Stresses for European Structured Finance Transactions* methodology.

4. The liquidity risk associated with a concentrated pool comes on top of the fact that even a granular portfolio of reverse mortgage loans may not provide sufficient cash flow in early periods under the stressed maturity profile to pay interest on the liabilities of the securitisation. This feature of reverse mortgage loans may be addressed structurally (e.g., with the use of a liquidity line or the issuance of liabilities with deferable interest).
5. The Herfindahl score for this purpose is defined as 1 divided by the sum of the square of the weight of each loan in the pool.

Appendix 2: Obligations Backed by Insurance Policy (Financial Guarantee)

This appendix highlights the key analytical factors that DBRS Morningstar generally considers when assigning ratings to securitisation transactions where the credit performance of the underlying collateral pool is supported by a financial guarantee or an insurance policy that functions as a financial guarantee (the Policy). This appendix is supplemental to, and should be used in conjunction with, the *Rating European Structured Finance Transactions* methodology.

Credit Factors to Consider

Insurer/Guarantor

- Credit quality, as evidenced by a credit rating;
- Mix of insurers/guarantors providing coverage for the underlying collateral pool; and
- Claim payment track record.

Legal/Policy Considerations

- Coverage by multiple guarantors: joint or several liability,
- Degree of protection/coverage afforded by the Policy (coverage percentage, length, payout events, policy exclusions),
- Time lag for collection of claims under the Policy (waiting period),
- Requirements with regard to Policy premium payment(s),
- Claim payee named in the Policy and assignability and enforceability of the Policy,
- Requirements for maintenance of coverage,
- Requirements with respect to recovery efforts by the insured party with respect to a defaulted underlying obligation covered by the Policy,
- Potential of counterclaims against an insured party affecting the payout under the Policy, and
- Conditions precedent to the Policy's effectiveness and validity.

Structural and Analytical Considerations

- Likelihood of loss occurring on the underlying collateral pool,
- Coverage of the costs and expenses associated with (1) paying the policy premium, (2) enforcing the payment upon a default of the underlying collateral, and (3) collecting the claim under the Policy,
- Servicing and backup servicing (including the responsibilities for any actions necessary to maintain the effectiveness of and to make claims under the Policy),
- Timing lag for payout under the Policy and availability of liquidity, and
- Sufficiency of funds likely to be available to the issuer to make payments under the rated obligations in a stressed environment.

Summary

Insurance policies and financial guarantees feature in structured finance transactions involving a wide range of underlying assets. The Policy may cover an individual asset, a pool of assets, or the rated liability itself. For Policies covering the entire pool, an insurance claim may arise subject to a breach of certain performance levels, such as losses or cash flow available to service securitisation debt. There may be one or several insurers involved in a single transaction and, if several are involved, they may be jointly or severally liable.

The analysis of structured finance transactions in which one or several insurer(s) provide(s) support involves an assessment of the risk presented by the underlying assets securitised, consideration of the credit quality of the insurer (or insurers), an assessment of the terms and validity of the Policy, and consideration of the sufficiency of funds available to the issuer, in stressed circumstances, to make payments due to the holders of the obligations to be rated.

Risk of the Underlying Assets

In the most common scenario, the risk of the underlying assets being securitised is either very significant or hard to assess (e.g., where the asset represents an obligation of a single unrated entity or when very limited historical default performance data is available). In such circumstances, and subject to the considerations detailed later in this appendix, DBRS Morningstar analyses the structured finance transaction by substituting the credit risk of the insurer for the risk of the asset.

In circumstances where DBRS Morningstar is able to assess the default risk of the assets, DBRS Morningstar performs an insured asset assessment by analysing the joint default risk of the primary obligor and the insurer.

Credit Quality of Insurer

In transactions relying on the Policy's protection for repayment of principal and payment of accrued interest on securitisation debt obligations, the credit profile of an insurance company or a guaranteeing entity is an important consideration. In the absence of an additional collateral performance assessment, the Policy provider's credit rating becomes the rating driver for a securitisation obligation. As a result of the nature of the credit support in such structures, to the extent that the Policy provider's rating changes or it appears to DBRS Morningstar that the Policy provider will not be able to meet the payment obligations to the securitisation entity, the rating of the transaction/tranche will likely be affected.

DBRS Morningstar expects to assess the credit quality of the Policy provider based on its financial strength rating (FSR), when available, which represents the insurance company's ability to make payments due under its policies. Alternatively, DBRS Morningstar may use the issuer rating if no FSR is available. If neither financial strength nor issuer ratings are available, or in cases where the provider may not qualify as an insurance company, a senior unsecured credit rating may be used. DBRS Morningstar may aggregate the exposures for its review purposes depending on certain

considerations (when, for example, the credit support is afforded by an insurance company to the members of its syndicates or when the Policy providers are affiliated).

In situations when the transaction/tranche benefits from the Policy provided by a single insurer or guarantor, DBRS Morningstar may rate such transaction/tranche by applying the rating of the Policy provider to the rating of the security. When multiple Policy providers are involved, DBRS Morningstar typically uses its proprietary model, the DBRS CLO Asset Model, to estimate losses at stress levels that correspond to a given rating level. The DBRS CLO Asset Model uses several key inputs, including notional exposure, PD, expected recoveries, and correlation assumptions among the providers. Notional exposures are calculated based on each provider's share of the joint claim-paying liability under the Policy. PDs are derived from the rating of each provider. Expected recoveries vary depending on the nature and granularity of the insured risks, the terms of the Policy, and the insolvency legislation and terms of any compensation scheme or guaranty fund applicable to the insurers. In a case where the Policy would lapse upon insolvency of the insurer and in the absence of any mitigating factors, DBRS Morningstar generally assumes no recovery from the insurer. A single correlation factor is typically used across all the providers as they are generally in the same industry. The loss levels generated by the DBRS CLO Asset Model at various rating levels are then mapped to the securitisation structure, which is supported by the Policy. Finally, when multiple Policy providers' liabilities with respect to payment of a claim under a single Policy are several, DBRS Morningstar typically uses the first-to-default analysis, which reviews PDs corresponding to a tenor of the Policy for each Policy provider.

Terms and Conditions of the Policy

DBRS Morningstar recognises that each Policy is unique and may be drafted to address specific circumstances. While DBRS Morningstar assesses each Policy individually, a Policy (regardless of its form) is generally expected to represent a functional equivalent of a financial guaranty. Generally, this may result in a Policy displaying certain characteristics, including the following:

- The extent of credit protection and the process and timing of claims under the Policy are clearly defined and incontrovertible;
- The Policy is an explicitly documented obligation assumed by the provider;
- The Policy only has a limited number of customary excluded claims under such Policy (e.g., customary force majeure provisions, such as loss, damage, or liability stemming from any weapon or device employing atomic or nuclear fission and/or fusion or from any chemical, biological, biochemical, or electromagnetic weapon), and does not contain any provisions, the fulfilment of which is outside of the direct control of a party benefiting from such Policy;
- The Policy provides direct credit protection and is not subject to significant maintenance and compliance requirements;
- The Policy does not contain provisions or contingent obligations of the insured party with respect to the underlying collateral covered by the Policy, which may be expected to allow the Policy provider to raise legal defences against the claim under the Policy;
- The issuer of rated securitisation debt benefits from the Policy and is named a loss payee, and/or the Policy does not contain provisions materially impeding its assignability and enforceability.
- The Policy may not be amended or modified without the written consent of the issuer and/or a third-party creditor relying on such Policy; and

- The Policy is legally effective and enforceable in all relevant jurisdictions.

Furthermore, DBRS Morningstar expects the Policy to include only reasonable and customary requirements with respect to filing of claims, provision of information, and enforcement action by the insured party upon default of the underlying collateral assets.

Legal and Structural Provisions

DBRS Morningstar typically expects an issuer to be created as a bankruptcy-remote SPV in a manner consistent with the DBRS Morningstar *Legal Criteria for European Structured Finance* methodology. In addition, DBRS Morningstar also considers matters related to the validity and enforceability of the rights under the Policy by the issuer. As such, DBRS Morningstar usually expects to receive opinions of the legal counsel to the effect that the Policy is the legal, valid, and binding obligation of the Policy provider, enforceable by the issuer (or its assign) against the Policy provider in accordance with the Policy's terms and no consent, license, approval, or authorisation or registration or declaration with any governmental or regulatory authority is necessary in connection with the Policy provider's execution or delivery of the Policy or the Policy provider's performance of its obligations thereunder.

DBRS Morningstar also expects the following matters to be addressed by a combination of legal opinions and representations of the Policy provider:

- The due organisation, valid existence, solvency, power, and authority, the authorisation of, and due execution and delivery of the Policy by the Policy provider; and
- The execution, delivery, and performance of the Policy by the Policy provider not conflicting with any law, order, rule, or regulation applicable to the Policy provider.

DBRS Morningstar expects that structural protections be in place to protect the cash flows payable by the Policy provider and available to the issuer to service the rated securitisation obligations as long as such debt obligations are outstanding. As such, DBRS Morningstar typically reviews the transaction structure and documentation to assess if, in addition to relying on the credit of the Policy provider, sufficient structural protections are in place (including, for example, liquidity reserves to cover timely interest payments and senior expenses, including the ongoing payment of the premium itself, if it is not front ended). For more detail on typical structured finance transaction features, see the DBRS Morningstar *Legal Criteria for European Structured Finance* methodology.

DBRS Morningstar is usually unable to rate a structured finance obligation in the absence of an adequate servicer with sufficient experience of the operational processes necessary to ensure the issuer of the rated obligation is able to receive the collections due under the assets securitised. In the context of a Policy, the servicing includes undertaking the actions necessary to obtain payment under the Policy in the event of an insured event occurring.

Cash Flow Analysis

When DBRS Morningstar has assessed the default risk of the assets, the terms and validity of the Policy, and the credit quality of the insurer or insurers, DBRS Morningstar analyses whether the cash flows available to the issuer (including payments received under the Policy) are sufficient under appropriate stressed circumstances to meet the issuer's obligations on the liabilities to be rated, on time and in full in accordance with the transaction's legal documentation. In its cash flow analysis, DBRS Morningstar may vary the timing of the receipt of cash flows (to the extent permitted by the structural provisions and the Policy's terms) to assess whether the transaction structure can support the debt servicing (as well as the payments of senior expenses including, as the case may, be Policy premia) amid the interruption of the cash flows from the underlying collateral and during the waiting period under the Policy.

Appendix 3: Dual-Recourse Securities[6]

This appendix describes DBRS Morningstar's approach to rating structured finance transactions when there are multiple, independent sources of cash flows that are each sufficient for the timely repayment of interest and the full repayment of principal (in full and on time) of the rated securities (Dual-Recourse Securities[7]) by each security's legal final maturity date. A source of cash flows may be a corporate or structured finance bond, guarantee, letter of credit, asset pool[8], or other source of cash flows (hereafter, a credit).

DBRS Morningstar analyses the risk of each source of cash flow's insufficiency, on its own, to repay the Dual-Recourse Securities in full and on time (i.e., the standalone credit risk of each credit). In cases when the credit risk of one of the credits is either very significant or difficult to assess (due to insufficient data, legal uncertainty, or other reasons), DBRS Morningstar uses the *European Structured Finance Flow-Through Ratings* methodology or the insured obligations methodology in Appendix 2.

DBRS Morningstar's Dual-Recourse Securities analysis focuses on the relationship between the different credits and consequential benefits to the transaction structure provided by the multiple potential sources of repayment, whereas DBRS Morningstar's analysis of the creditworthiness of each individual credit uses the appropriate underlying rating methodology for such credit.

Credit Factors to Consider

- Legal and structural considerations.
- Analytical considerations:
    - Credit quality of the credits.
    - Overlap in drivers of default risk between credits.

Summary

Dual-Recourse Securities are bonds for which multiple sources of support (or credits) exist for the repayment of the rated bond obligations. Typically, these are structured so that, in the event of one credit's default, the other credit(s) could provide full and timely repayment in accordance with the terms of the security. Only in the event of joint default of both credits will the Dual-Recourse Securities experience an event of default.

6 This methodology does not apply to covered bonds, which are assessed using the Rating and Monitoring Covered Bonds methodology.

7 Although this appendix specifically refers to structures with two sources of cash flows, this methodology can extend to a scenario where a small number of (but more than two) sources may provide support.

8 In this context, an asset pool should be interpreted in the same way as a the collateral underpinning a structured finance bond (i.e., an isolated pool of assets along with contractual arrangements that procure that the cash flows from the assets are used to repay the rated securities). The analysis of its credit risk is similar to the analysis of a structured finance bond.

To analyse a Dual-Recourse Security, DBRS Morningstar must first analyse the independent creditworthiness of each underlying credit using the relevant underlying rating methodology applicable to that credit's asset type. The rating assigned to a Dual-Recourse Security is at least as high as the higher-rated credit, since the higher-rated credit supports the rating on the Dual-Recourse Security absent any additional support.

Given the potential for the full and timely repayment of the Dual-Recourse Security by an additional, independent means, this appendix provides for a maximum potential rating uplift of three notches above the higher-rated credit. The amount of uplift is primarily a function of the lower-rated credit's rating and the degree of overlap in the drivers of default risk of the assets. Additional legal and structural analysis assesses the recourse to both credits and assurance of the continuity of payments.

Credit Risk of Dual-Recourse Securities

The credit risk of Dual-Recourse Securities is directly related to the joint PD of the two credits supporting them. The joint PD of the two credits, in turn, depends on their individual probabilities of default and their default correlation. It is intuitive that the joint PD can be no greater than either of the individual probabilities of default. In other words, the inclusion of the two credits in a Dual-Recourse Security structure does not make either of the credits riskier.

This appendix lays out a simplified framework under which DBRS Morningstar determines the rating on a Dual-Recourse Security by notching up from the rating on the higher-rated credit (the Reference Rating). DBRS Morningstar determines the number of notches that a Dual-Recourse Security can be rated above the Reference Rating using two factors: (1) the PD of the other, weaker credit and (2) the degree of overlap in the drivers of default risk between the two credits. DBRS Morningstar determines the PD for the weaker credit by reference to the DBRS Morningstar IDT (see exhibit 1), the rating, and the tenor of the credit.

A legal and structural analysis assesses that the rated obligations due under the Dual-Recourse Securities will be met in the absence of a joint default of the underlying credits.

Simplified Approach

Exhibit 2 summarises the maximum PD of the weaker credit that is consistent with one, two, or three notches of rating uplift above the Reference Rating, depending on the degree of overlap in the drivers of the credits' default risk.

Exhibit 2 Maximum Weaker Credit PD to Achieve Uplift in Notches

		+1	+2	+3
Credit Drivers Overlap	**High**	12%	N/A	N/A
	Mid	60%	12%	N/A
	Low	70%	40%	12%

The amount of rating uplift does not depend on the rating of the higher-rated credit. For example, credits rated BB (sf) and A (sf) would both receive three notches of rating uplift when paired with a low-overlap, five-year BB (sf)-rated credit. The maximum amount of uplift is one, two, and three notches for high-, medium-, and low-overlap credits, respectively.

The relevant tenor for determining the PD of the lower-rated credit is its own tenor[9]. However, if there is a significant difference between the tenors of the two credits, this simplified approach does not apply and DBRS Morningstar conducts further analysis based on the first principles of the joint-PD calculation.

Additional considerations, including legal, structural, or other quantitative or qualitative analytic issues, may affect the final rating that DBRS Morningstar assigns.

Determination of Degree of Credit Drivers Overlap

The additional value in Dual-Recourse Securities is the uplift in scenarios where the higher-rated credit defaults, but the lower-rated credit does not, providing the necessary support for repayment of the bonds. The additional uplift to the transaction's rating is conditional upon the correlation between the credits.

To consider theoretical extremes, there is no added benefit to the transaction when the two credits have perfect correlation (e.g., two tranches from the same transaction where the lower-rated tranche defaults by definition if the higher-rated tranche defaults). On the other hand, the combination of two fully independent credits could provide significant uplift from the rating on the higher-rated credit.

For a given pair of credits, the simplified framework considers four possible levels of correlation by reference to the maximum possible default correlation between the credits and the degree of overlap in the drivers of the two credits' risk, which DBRS Morningstar can assess as low, medium, high, or full.

Exhibit 3 Determination of Degree of Credit Drivers Overlap

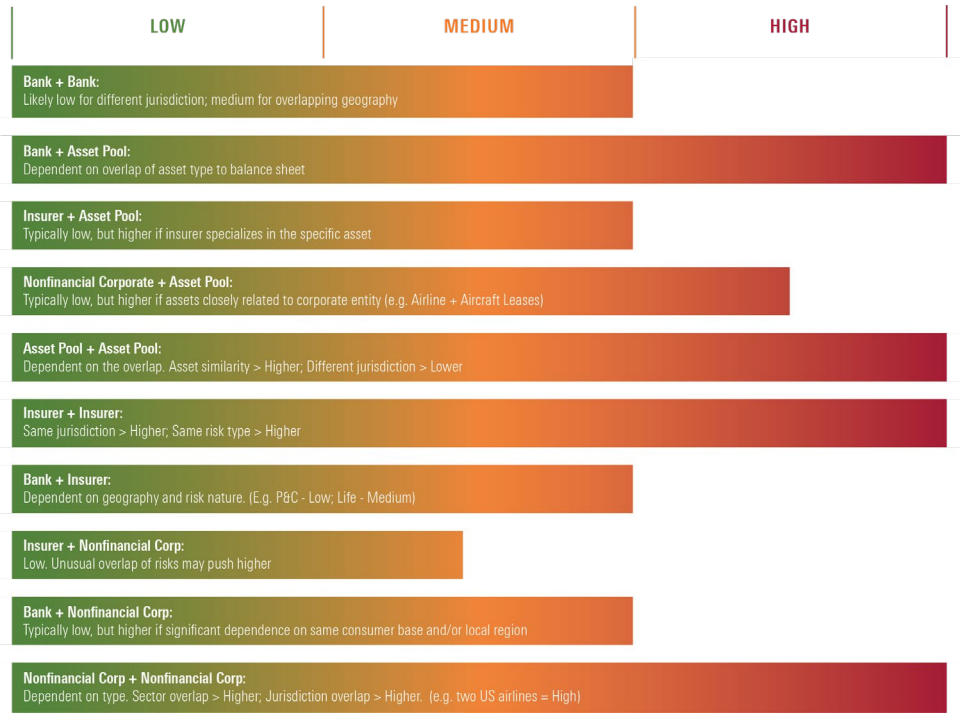
Tier	Description
Low	Small overlap in key credit drivers. Performance expected to be largely independent, with correlation largely a function of broader economic stress.
Medium	Meaningful overlap in key credit drivers; default of the primary credit implies elevated risks to the performance of the secondary, though there may be mitigating factors.
High	Significant overlap in key credit drivers, with a high level of shared exposure to a specific asset, industry, or region.
Full	Full overlap, such as two tranches from the same securitisation. No rating benefit would apply.

9 For a credit with a tenor linked to the other credit (for instance, a guarantee), the relevant tenor is the tenor of the other credit.

DBRS Morningstar presumes a minimum level of correlation between any two credits, considering their shared exposure to the broader economy, resulting in a maximum of three notches of uplift above the Reference Rating. At the other extreme, two fully overlapping credits would provide no uplift above the Reference Rating.

Exhibit 4 provides guidance around overlap ranges that DBRS Morningstar would expect for different asset type pairs, noting key factors that DBRS Morningstar would consider in determining overlap levels. However, DBRS Morningstar makes the final determination of the extent of overlap in rating committee based on both quantitative and qualitative factors.

Exhibit 4 Typical Correlation Levels by Asset Pair Type



Source: DBRS Morningstar.

For several asset pairs in Exhibit 4, the final correlation depends to a large extent on the types of assets included, the perceived overlap of their risks, and the geographic concentration of those risks. For example, two assets that depend on the same sector will be more strongly correlated than those from different sectors. Likewise, the more geographically concentrated two assets are (e.g., both from a small, undiversified country), the strong the correlation assumption will be.

Application Example

In this example, a new security is issued with dual recourse to two forms of full support: an asset pool and a guarantee. The asset pool comprises consumer loans from a single country with a five-year maximum tenor, has a balance that exceeds the new security balance, and is determined to support a BB (sf) rating on its own. The guarantee is provided by a large multinational insurance company with a long-term rating of 'A'. Because the insurance company has broad exposure across various asset classes and geographies, DBRS Morningstar considers the overlap in drivers of default risk to be low between the insurer and the asset pool.

The expected default rate of the lower-rated (BB (sf)) credit over the five-year tenor of the transaction is 8.6% (from the IDT). Because this default rate is lower than the required 12%, the Dual-Recourse Security receives a three-notch uplift from the 'A' rating of the guarantee provider, resulting in a AA (sf) rating on the Dual-Recourse Security.

Exhibit 5 Title

Item	Description	Rating Level	Independent Default Rate (From IDT)
Credit 1	Guarantee from large, multinational insurer	A	0.57%
Credit 2	Pool of single-jurisdiction consumer loan assets with 5-year tenor	BB	8.60%

1. Credits 1 and 2 determined to have low driver overlap
2. Lower-rated credit has PD rate under 12% threshold
3. Dual-Recourse Security qualifies for 3-notch uplift

Item	Description	Rating Level	Uplift from Independent Credits
Dual-Recourse Credit	5-Year tenor, supported by credits 1 and 2	AA	+3 Notches above Credit 1

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We rate more than 3,000 issuers and nearly 60,000 securities worldwide, providing independent credit ratings for financial institutions, corporate and sovereign entities, and structured finance products and instruments. Market innovators choose to work with us because of our agility, transparency, and tech-forward approach.

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