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METHODOLOGY

European CMBS Rating and Surveillance Methodology

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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 Global Structured Finance Related Methodologies document on www.dbrs.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.

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Key Updates

For key updates in this methodology, please refer to the press release titled *DBRS Updates its European CMBS Rating and Surveillance Methodology* on 19 February 2018.

Scope and Limitations

The scope of this methodology is to consider the credit quality of loans secured by commercial real estate (CRE) on a standalone basis, in the context of a securitisation (CMBS) or in the context of loans backed by CRE loans (loan-on-loan financings or warehouse lines), at both the initial rating stage and during the ongoing surveillance process. For CRE loans in particular, the analysis may be limited to the property-level cash flow and debt capacity of each CRE loan. When analysing CRE loans and/or CMBS, DBRS considers the loan and transaction structures, the legal jurisdiction of the CRE assets and the issuer, and any mitigating factors that may be present. This methodology only applies to loans and CMBS secured by European CRE. It is important to note that the methods described herein may not be applicable in all cases. Further, this methodology is meant to provide guidance regarding the DBRS methods used in the sector and should not be interpreted with formulaic inflexibility, but understood in the context of the dynamic environment in which it is intended to be applied.

DBRS recognises that each transaction is different and that special risks/mitigating factors may lead to the modification of some of the criteria contemplated in this methodology. DBRS direct sizing hurdles described herein are a substantial component of the European CMBS Rating and Surveillance methodology. The DBRS direct sizing hurdles vary by rating category and property type, which may not precisely capture all risks associated with the relevant asset class or transaction in each instance. As such, transaction ratings may materially deviate from the rating implied by the direct sizing hurdles from time to time. DBRS considers a deviation of three or more notches from the rating implied by the direct sizing hurdles to be a material deviation from the methodology. Many of the quantitative and qualitative factors that could result in a material deviation are included in the following sections.

In this publication, DBRS sets forth its European CRE loan and CMBS rating and surveillance methodology and the asset-specific analytical procedures typically employed. DBRS monitors ratings in accordance with the *Structured Finance Ratings Surveillance Global Policy* on www.dbrs.com.

Executive Summary

The premise of European CMBS is to transfer the credit risk in a portfolio of CRE mortgages from the originating entity to bondholders. In the simplest sense, the bondholders are expected to be repaid based on the receipt of mortgage payments that are themselves funded through free cash flow from the CRE properties. These properties serve as security for the mortgages via a successful refinancing of the mortgage at maturity or enforcement proceeds following a default. The property type, collateral quality, market position and tenancy are key variables that DBRS considers when looking at the ability of the property free cash flow to fund the mortgage liabilities, and therefore the issuer's ongoing obligations under the rated debt. DBRS also assesses the ability of the portfolio to either be refinanced or sold to repay the rated debt at loan or CMBS maturity. Structural features may fill the potential gaps or deficiencies in property cash flow over the life of the loan and at the loan's maturity, as well as insulating the transaction from potential interest rate or currency risk.

Given the dynamic nature of CRE, a variety of events can affect the collateral of a CMBS transaction and the cash flows that are used to pay interest and principal due on the bonds. During the life of a CMBS transaction, loans may go delinquent, take losses or prepay; tenants vacate; market rental rates and occupancies improve or soften; and property values increase or decrease, to name only a few circumstances that can change. When initially assigning a rating, DBRS assumes that changes in the performance of the underlying loans can and do occur; therefore, it assigns ratings designed to withstand a certain level of volatility in the performance of the underlying commercial properties. DBRS's surveillance process measures and communicates to the investment community whether a change outside of DBRS's original expectations that has the potential to affect the ratings assigned to the bonds has occurred or may occur. The magnitude of the changes that occur in relation to each loan and the loan's relation to the other loans in a transaction can determine whether a rating action is warranted.

Summary of the Methodology

DBRS makes use of two key metrics in order to determine the ability of the underlying CRE portfolio to generate sufficient cash flow to meet its obligations in respect of the rated debt securities. These metrics are (1) the DBRS Debt Service Coverage Ratio (DSCR), used to assess the ability of the borrower and issuer, respectively, to meet both ongoing and final payment obligations in respect of the loan or CMBS, and (2) the DBRS Loan-to-Value ratio (LTV), primarily used to assess the likelihood that the property portfolio may either be refinanced or sold in order to meet the borrower's or issuer's obligations at maturity.

1. DBRS conducts loan- and property-level analysis to determine a DBRS Net Cash Flow (NCF), defined as a property's free cash flow after payment of ongoing operating expenses inclusive of capital expenditures and tenant inducements.
2. The resulting DBRS NCF from the loan- and property-level analysis is used to determine the DSCR and the LTV over the term of the mortgage obligation and at the loan maturity date. The most constraining of these four metrics is typically used to size the loan, i.e., to measure each loan's appropriate capacity of debt at each rating category, or what DBRS refers to as the direct sizing approach. If the transaction includes more than one loan, the resulting capacity of debt of each loan is aggregated to provide the base credit enhancement that is then measured against the proposed structure to determine the appropriate base rating. DBRS's large loan sizing hurdles are used in preference to a pooling model as the European CMBS market has traditionally been, and is predicted to continue to be, heavily concentrated in transactions having a minimal number of loans.
3. A review of the relevant loan-level legal documents, as well as those that govern the CMBS transaction, is undertaken and consideration of the relevant qualitative factors is made. As a result of the review of loan and transaction legal documents, structural enhancements and qualitative factors surrounding loans or the transaction, the base credit enhancement implied by the direct sizing hurdles may be adjusted upward or downward.
4. The resulting output represents the final credit enhancement.
5. After issuance, the transaction and/or loan performance is reviewed at each interest payment date (typically quarterly in European CMBS). If there is a significant performance trend change related to the securitised loans and the related properties, this may prompt additional analysis that would trigger an in-depth review outside the loan/transaction's review schedule. At a minimum, all transactions are reviewed on an annual basis. DBRS monitors ratings in accordance with the *Structured Finance Ratings Surveillance Global Policy*, which can be found at www.dbrs.com.

The DBRS rating methodology does not attempt to predict the timing of an economic downturn; rather, the stresses applied in arriving at the relevant metrics of the large loan sizing parameters factor in data from the most recent economic downturn.

The diagram in the section CMBS Process Overview below describes the overall process DBRS follows to analyse a CMBS transaction.

Key issues involved in CMBS securitisations include, but are not limited to:

- The structure of the transaction.
- Characteristics of the special-purpose vehicle (SPV) used to hold the mortgages.
- Separation of asset credit risk and seller risk through a true sale.
- Servicing issues where the seller is proposing to act as a servicer or special servicer for the mortgages.
- The terms and conditions of the mortgage servicing agreement (both primary/master servicing and special servicing).
- Mortgage origination practices, including the type and nature of security taken by the seller of the mortgages.
- Representations and warranties made by the seller in relation to the mortgages and properties.

Commercial Mortgages as Securitisable Assets

1. Separating the Risk of the Originator

Securitisation allows originators to fund themselves more efficiently by creating a debt security with a better credit risk profile than they can offer directly. This can be achieved by segregating the risks associated with the performance of the assets to be securitised from the risk of the originator itself.

The ideal securitisable asset is structured to perform independently of the originator's existence or performance. CMBS transactions can lack this complete independence if day-to-day servicing and problem loan resolution are handled by the originator in its capacity as servicer, rather than by an independent third-party servicer. However, this risk is mitigated as all servicers are bound to the industry servicing standard, which requires them to follow documented procedures, and where explicit direction is lacking, the servicer should act like a prudent lender would, and service the commercial mortgages for the benefit of the issuer of the CMBS transaction. In practice, this means the servicer's primary goal is to maximise the recovery of the loan as a whole. The servicing standard may be compromised by contractual arrangements within the transaction documents that allow various parties or classes of bonds to make decisions overriding or delaying the servicer's recommendations. In DBRS's view, it is key to understand that such structural rights or obligations are likely to influence the actions of the servicer (or special servicer). For example, servicers in Europe are not typically indemnified; therefore, should a servicer be held responsible for items such as lack of action or errors in judgement, it may find itself subject to a claim for damages that will not be recoverable from another transaction party. Although this somewhat mitigates the seller/servicer risk, it may have a negative impact on an issuer (and by extension, the bondholders) due to expenses incurred by the servicers to validate their decisions. In addition, typically, there are mechanisms within the CMBS documents to allow the bondholders to replace the servicer if there is an uncured servicer event of default. The replacement servicer could be a backup servicer named at the issuance of the transaction, or it could be a servicer selected after the servicer default from a pool of active third-party CMBS servicers.

For additional commentary, refer to the True Sale in the Legal and Structural Considerations section of the methodology, on page 12.

2. Analysing the Securitised Assets

In addition to assessing whether the risks associated with the originator of the assets have been adequately mitigated, in order to assign a rating to a securitisation transaction, it is necessary for the performance characteristics of the underlying assets to be understood. This generally warrants: (1) a meaningful level of transparency of market information, asset reporting and ongoing performance data and information; (2) sufficient market performance data through economic cycles; and (3) an understanding of local and regional jurisdictions and obstacles arising from market conditions (i.e., lack of capital and available financing) that may increase costs or delay resolutions of defaulted assets.

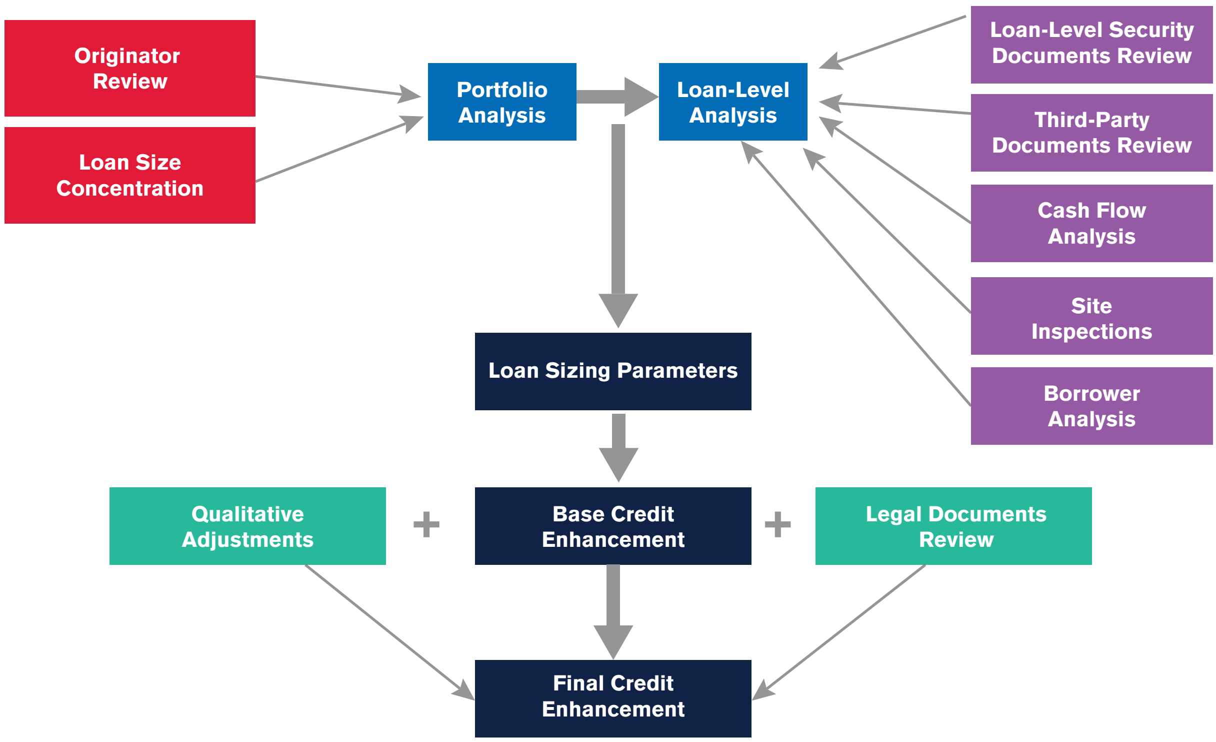
The availability of loan performance data and information in relation to CMBS assets can vary widely across jurisdictions, from a highly transparent public market in the United States to a highly privileged and protected market in several European countries. The length of performance history varies widely across markets, even within regions, and even if data is available for a longer time period, it is not always in the format required by DBRS (or investors). If DBRS does not have sufficient data and/or information on a market or insufficient data related to loan or property performance, it may not be able to rate the transaction.

Pool size (in terms of numbers of mortgages) in CMBS transactions can range from single digits to several hundred, with the focus in the European CMBS market being on pools of less than 20 commercial mortgages. As a result, the rating process is labour-intensive compared to the statistical analysis of pools of relatively homogeneous assets. Except in cases where DBRS has a very large pool of relatively uniform commercial mortgages with a long track record, in most European CMBS transactions the analysis focuses on evaluating the credit risk of each of the underlying commercial mortgages.

CMBS Rating Process Overview

DBRS typically begins the rating process by reviewing the proposed loan portfolio. In most cases, European CMBS transactions generally consist of a single borrower, a single loan or multiple large loans, with very little diversification and high asset and market correlations. Because of the concentration of these small pools of loans, DBRS generally reviews all loans within the pool, as the event risk associated with any one asset is higher than that in a truly diversified pool. Whenever possible and warranted, DBRS performs site inspections and conducts on-site property management meetings for the significant commercial mortgages it reviews. For loans secured by a portfolio of properties, DBRS may choose to conduct an on-site inspection of a sample of the properties.

DBRS Rating Process for CMBS Transactions



In addition, DBRS generally reviews all third-party due diligence reports prepared for the loan originator as part of its loan origination process. These reports typically include environmental and technical reports which are used to identify any possible significant contingencies, such as environmental contamination, structural faults or deferred maintenance. If a Phase II environmental report is recommended, DBRS reviews the results. DBRS may increase the property capitalisation rate applied or make other adjustments if contamination is present and not appropriately mitigated. In certain instances, generally where loans are secured by highly diversified portfolios, only a sampling of the technical and environmental reports will be produced and provided. In some circumstances, DBRS may apply a penalty if the scope or the sample size are deemed insufficient.

The third-party reports typically also include valuations for all properties securing the loan(s). The valuations identify macro- and micro-market dynamics, the competitive position of the properties within these markets, trends in historical operating performance, valuer forecasts for future revenues and expenses, as well as key valuation metrics. Producers of the third-party reports are typically large, well-known firms and while commissioned as part of the loan origination process, DBRS expects these reports to be conducted by a third party, independently from the issuer or loan seller.

The information collected from the above review helps DBRS to determine a stabilised NCF for each asset in the portfolio.

Cash Flow Is King

The crux of analysing CMBS transactions is evaluating the underlying credit quality of the individual mortgages that form the pool. The fundamentals of a property are reflected in the cash flow it can generate. DBRS views cash flow as the primary input in assessing default risk; ultimately, the related borrower will pay its obligations under the relevant CRE mortgage only if cash flow from the property exceeds the financial obligations of the borrower related to the property on a consistent basis. In addition, a property's cash flows can be used to determine that property's value. Capitalisation rates play a central role in DBRS's analysis of CRE credit risk. The capitalisation rate is simply the relationship between a property's income and its value. The lower the capitalisation rate or the return the market expects from an investment in the property, the higher the value that property is likely to have, assuming a given level of cash flow.

Therefore, fundamental credit analysis of any real estate-related loan is based on an evaluation of the cash flow dynamics of each asset as determined by the lease obligations in place and projected lease breaks or expiries, as well as forecasts of future operating expenses when and where this is relevant.

Stabilised Net Cash Flow (NCF)

The starting point for any analysis of cash flow begins with the in-place rent roll, as it is indicative of the property's future revenue stream and telling of a property's cash flow stability. DBRS gives credit for leases signed with tenants that are in occupancy, open for business and paying rent unless otherwise mitigated. By using third-party sources that provide access to historical and current market rental rates, DBRS can identify sustainable rents and trends. In determining its stabilised NCF, DBRS adjusts any above-market leases down to a factor of market rates, with the assumption that when the tenant has to renew or encounters its first break option, it will renegotiate its lease to a rate competitive with the market. Similarly, when developing its stabilised occupancy for the property, DBRS marks occupancy down to market levels based on comparable properties.

DBRS generally reviews historical financial statements to determine the stabilised expense line items and an appropriate expense ratio, given the lease types. Additionally, DBRS reviews lease summaries, if available, to determine which expenses are not recoverable by the tenants. The DBRS Stabilised NCF reflects adjustments for market rate management fees, along with normalised tenant improvement, leasing commissions and capital expenditure requirements. Credit can be given for up-front reserves that are dedicated to capital expenditures, leasing commissions or tenant improvements.

The resulting NCF represents a conservative assessment of sustainable performance representative of expectations over the term of the mortgage without any growth assumptions. DBRS uses specific property historical financials, updated valuations and market data in its analysis. In the absence of those, DBRS may refer to a set of predetermined underwriting guidelines as a comparison and/or a potential minimum of inputs that have been developed primarily based on prudent lender property-specific underwriting assumptions. Any adjustments made are consistent by property with similar profiles. The line items where DBRS makes adjustments to the NCF can be found in Appendix B along with general guidelines for each input in the absence of property and specific market information.

NCF Stability Factors

Once the stabilised NCF is determined, DBRS assesses the property's cash flow volatility during the loan term. Numerous factors have an impact on the expected volatility of NCF such as higher tenant quality (e.g., investment-grade-rated tenants), longer lease terms, a staggered lease expiration schedule, a low expense ratio and little reliance upon ongoing business income. DBRS also takes into consideration factors that are likely to keep an asset that is currently under-performing the market from ever reaching market rates. Qualities such as an inferior location within a market or poor property amenities may prevent an asset from ever achieving market rental rates. And vice versa, a superior location with superior amenities can cause the property to outperform the market, until such time as new competition levels the playing field. DBRS's expectation for volatility of NCF influences the refinance constant or capitalisation rate applied to the DBRS Stabilised NCF, each of which are discussed in the following section. For example, if a property exhibited a low level of NCF volatility, a lower refinance constant or capitalisation rate may be used when applying the European CMBS direct sizing hurdles.

Key Direct Sizing Inputs — DSCR & LTV

The DBRS Stabilised NCF is used to derive the primary variables or inputs for DBRS's European CMBS direct sizing hurdles: DSCR and LTV. DSCR is generally defined as the annual NCF of a property divided by the loan's annual debt service obligation. DSCR is, in DBRS's view, the best measure of the default risk in respect of a loan, as it incorporates the current, as well as potential, stressed future operating performance of the property and the capacity of the NCF to service the related debt (i.e., how much debt the cash flow can support). LTV, generally defined as the amount of debt divided by the asset's value, is also considered and is, in DBRS's view, one of the best measures of potential severity of loss.

Term DSCR

Term DSCR is the stabilised NCF divided by the maximum actual annual debt service obligations of the borrower throughout the term of the loan, which often includes periods of amortisation that will be included within the mortgage loan schedule in an effort to de-lever the asset. This includes analysing quarterly NCF projections to account for periods of concentrated lease expirations. This permits DBRS to assess whether adequate reserves or an appropriate amortisation schedule is in place to cover the debt service as well as anticipated costs associated with tenant rollover. DBRS defers to DSCR tests over Interest Coverage Ratio (ICR) tests to determine the likelihood of default over the term of the loan, because ICR tests only reflect part of the obligations involved in servicing the debt.

Refinance Risk and Refinance DSCR

Fully amortising commercial mortgages are relatively rare in the CMBS market. As such, for most mortgages, the outstanding balance of the mortgage must be refinanced at the balloon or maturity date (typically within a defined period with potential for extension options). The timing of loan maturity can have a significant impact upon the borrower's ability to refinance due to increases in interest rates, slowdown in economic activity, depressed real estate values or a drop in liquidity in the real estate markets.

In order to capture these uncertainties, DBRS estimates the DSCR for a loan at its maturity. The refinancing DSCR concept assumes that the borrower requires a refinancing loan at maturity and is determined by dividing its DBRS Stabilised NCF by a conservative projection of its refinance debt service obligation (i.e., the debt service required under the assumed new loan). DBRS calculates a borrower's refinance debt service obligation by applying a constant to the balloon balance of the mortgage (i.e., the amount expected to be payable on the mortgage loan at maturity). The DBRS Refinance Constant incorporates stressed interest rates, consistent with DBRS's *Interest Rate Stresses for European Structured Finance Transactions* methodology, that are based on the appropriate index and loan term, an appropriate credit spread and a required amortisation schedule per property type.

Refinance Constant = Risk-Free Component + Rate Spread + Amortisation

Generally, credit spreads range from 100 to 500 basis points and amortisation amounts to commonly 1% per annum of the original unpaid principal balance. By direct sizing each loan in accordance with the varying DSCRs per rating category, as outlined in Appendix D,[1] each loan is effectively assigned a different refinance constant (cost of capital) across each of the rating categories, reflecting the volatility in the risk-free rate, rate spread and the stress factors that govern each rating category. For the exact calculation, refer to Appendix E.

DBRS observed past rate spreads for CMBS loans in order to validate its estimate of rate spread by property type. The rate spread can be adjusted based on property quality, market and/or other qualitative considerations.

European CRE loans often have relatively short loan terms with minimal to no amortisation. However, DBRS makes an assumption that current market practice of interest-only loans or minimal specialised amortisation schedules do not prevail and that lenders could require some form of traditional amortisation or repayment of debt in an effort to de-lever the assets and improve their risk position. Therefore, the DBRS Refinance Constant assumes loans will generally require a minimum of 1% amortisation per annum. This amortisation may be adjusted upward or downward based on DBRS's view of the asset, the leverage and the expectation of a refinance lender who may require to be repaid faster. This compares to an assumed standard amortisation schedule of 30 years in the United States and 25 years in Canada. DBRS believes this assumption to be an additional stress to mitigate a property's shorter remaining useful life and depreciation over time. The DBRS Refinance Constants are each adjusted based on property quality and/or property type.

LTV

The loan's going-in LTV (i.e., the LTV based on the property's original valuation) in and of itself is neither a reliable indicator of default nor of recovery. The original valuation, representing a point-in-time analysis, is not necessarily indicative of future value or even of liquidation value in the event of immediate default. That said, many components of a comprehensive valuation report, including replacement cost estimates, market performance statistics, comparisons and capitalisation rates provide insights and support into the DBRS loan-level analysis. Within the context of commercial real estate lending, value is most relevant when the loan falls due at maturity or in the event of a payment default during the term of the loan. At loan maturity, the market dynamics that determine capitalisation rates are likely to have changed since origination. During the term, a default is likely to be precipitated by a decline in NCF. Therefore, DBRS determines the DBRS Value for the property. DBRS Value is derived by choosing a reversionary capitalisation rate, determined by long-term market performance of the property's jurisdiction as noted in the valuation, or by third-party data providers. The DBRS Stabilised NCF divided by the normalised capitalisation rate results in the DBRS Value. DBRS reviews both going-in LTV (outstanding principal balance/DBRS Value) and maturity LTV (scheduled maturity balance/DBRS Value), such that the impact of amortisation can be determined.

1. The DSCR and LTV parameters outlined within Appendix D are representative of the DBRS DSCR and LTV derived from the DBRS Stabilised NCF, DBRS Value and DBRS Debt Service as opposed to in-place cash flow or third-party valuation.

Additional Metrics

Exit Debt Yield

Simply defined, DBRS considers a loan's DBRS Exit Debt Yield to be the DBRS Stabilised NCF divided by the loan amount at maturity. DBRS Exit Debt Yield is reviewed as a check and balance to assess that the broader DSCR and LTV measures are reflective of appropriate debt loads, given an asset's stabilised NCF. DBRS uses exit debt yield benchmarks that are reversionary, stabilised and long term. Broadly speaking, loans with DBRS Exit Debt Yields in excess of 11% to 12% are considered reasonable candidates for refinance that generally require minimal additional equity injection from the loan sponsor; however, the determination of an appropriate exit debt yield is heavily dependent upon the property type and jurisdiction, as well as collateral quality and competitiveness.

Base Credit Enhancement

Direct Sizing Approach

DBRS determines a base credit enhancement for European CRE loans and related CMBS transactions using a direct sizing approach. The direct sizing approach focuses specifically on an analysis of the capacity of the property or property portfolio to service the analysed debt. As previously highlighted, the inputs DBRS uses in the direct sizing approach are DBRS Term DSCR, Refinance DSCR, Going-In LTV and Maturity LTV. DBRS direct sizing hurdles are a substantial component of the European CMBS and Surveillance methodology and DBRS considers three or more notches deviation from the rating implied by the direct sizing hurdles a material deviation from the methodology.

In sizing the loan based on the DBRS Term DSCR or Refinance DSCR parameters, DBRS increases the initially determined debt service level,[2] expressed as a percentage of the current loan balance (the actual constant), or the refinance constant (as the case may be) by a stress factor from the range for each rating level specified in Appendix D. This has the effect, for higher rating levels, of increasing the percentage return the property is assumed to need to generate either during the life of the loan or at maturity, in order to be refinanced. Dividing the DBRS Stabilised NCF by the stressed debt service level arrives at a theoretical DBRS Refinance DSCR.

When determining the loan sizing based on the LTV factors, DBRS selects an LTV for each rating level from the ranges specified in Appendix D, multiplying that LTV by the DBRS Value for the property (which is itself determined by dividing the stabilised NCF by DBRS assumption as to the appropriate current capitalisation rate for the property).

The most constraining parameter determines the direct sizing of the loan and the DBRS Exit Debt Yield is typically reviewed as a check and balance to assess that the broader DSCR and LTV measures are reflective of appropriate debt loads, given an asset's stabilised NCF.

Each rating category in the direct sizing approach implies a different level of confidence or margin of safety. The varying DSCR and LTV parameters set out in Appendix D represent levels of stress that the property's cash flow and property values should be able to sustain at each respective rating category.

The DBRS direct sizing parameters outlined in Appendix D were constructed based on observations of loan-level data and property performance of a large sample of assets without regard to specific jurisdiction. To account for this limitation, DBRS typically makes adjustments to its direct sizing parameters to reflect various nuances in specific jurisdictions that affect cash flow stability, such as the tenants' rights favouring that of the landlords, as well as any prolonged enforcement timelines that are unique to different jurisdictions.

Adjustment Factors

The direct sizing parameters can be adjusted for several different factors, including certain quantitative factors and others that reflect an assessment of property qualities.

Concentration Risk

The DBRS sizing parameters are designed to take into consideration the concentration inherent in single loan portfolios, with no benefit given to multi-loan or property pools. The parameters can be adjusted at the loan and transaction levels to account for varying degrees of diversification, such as multiple loans secured by multiple properties across multiple jurisdictions or a combination thereof. Likewise, the parameters can be increased to account for increased concentration risk at the property itself, such as single tenancy, for example.

2. As described above in the Term DSCR section, this is based on the maximum actual annual debt service obligations of the borrower throughout the term of the loan.

Prepayment Scenarios
Initial portfolio diversity can be eroded due to property disposals and/or loan prepayments. In addition, heterogeneous pool disposals and/or loan prepayments can also result in diminishing portfolio quality. In its analysis, DBRS considers that prepayment analysis and adverse prepayment scenarios can result in adjustments of the direct sizing parameters.

Single Tenant
DBRS recognises further risk associated with properties that are leased by a single tenant, as it relates to the financial strength or credit of the tenant, or lack thereof, and the length of the lease inclusive of any breaks. Often such risks can be mitigated by a loan's structural features (e.g., reserves, letters of credit, guaranteed leases that extend well beyond the loan maturity, etc.). However, such concentrations and binary risk in a property's cash flow may warrant an adjustment to a loan's probability of default and/or property value (capitalisation rate), and an adjustment of the direct sizing parameters.

Amortisation
To the extent a loan amortises, DBRS may consider a positive adjustment of its sizing parameters, based on both the strength and the stability of the DBRS Term DSCR. For example, if the term DSCR on the loan was considered adequate, and the building was leased to high credit quality tenants with minimal or no lease breaks over the term of the loan, DBRS may assume the cash flow of the property to be quite stable, and might therefore look to the DBRS Maturity LTV over the DBRS Going-In LTV when sizing the loan. A sponsor's business plan sometimes includes the disposal of some or all of the properties over the loan's term which would result in partial or full repayment of the loan over time. Typically, upon property disposal the borrower is obliged to redeem the loan in an amount equal to the allocated loan amount for the property plus a pre-defined release premium, hereby deleveraging the loan. Likewise, permitted disposals are often subject to disposal criteria related to the quality of the remaining portfolio. Depending on the experience of the sponsor, the credibility of the disposal business plan and portfolio as well as property market characteristics, DBRS might give credit to property disposal plans. Such amortisation benefit is typically more pronounced for junior CMBS notes with a lower rating. In DBRS's view, the rating of highly-rated CMBS bonds should not be overly dependent on business plan execution risk.

Recourse
Loans that have enforceable recourse to a financially capable guarantor are expected to have lower probabilities of default. As such, ratings of loans carrying a full recourse covenant from an investment-grade-rated entity are generally floored at the entity's rating.

Property Quality
The highest quality properties within a market often exhibit greater ability to attract new tenants and retain existing ones, therefore indicating greater cash flow stability. To evaluate property quality, DBRS considers a number of factors, including location, functional utility of the asset, the comparability of the surrounding and competing properties and the quality of construction, property condition, ingress and egress, and property amenities. As discussed in the NCF stability section above, the property quality may warrant a reduction in the refinance constant or capitalisation rate applied to the DBRS Stabilised NCF. This adjustment is largely based on the results of the on-site property inspection and is expected to be supported by comparable data in the valuation.

Sponsorship Strength
DBRS defines a strong sponsor as one that has access to sufficient liquid financial resources to do what is economically advisable to keep the loan current in periods of economic stress. In addition, DBRS considers in its analysis whether the loan is structured in a way that does not preclude or diminish the likelihood of injections of additional equity capital in the event of economic stress. Although financial capability does not suggest that a sponsor will cover debt service payment shortfalls unless there is significant equity to protect (neither will they cover refinancing shortfalls in an over-levered asset), DBRS generally recognises that strong sponsors are less likely to default due to a short-term cash flow shortfall and less likely to exacerbate the losses in the event that their equity has eroded. An assessment of sponsorship strength may cause an adjustment within the property underwriting to determine the DBRS Stabilised NCF. For example, a property whose sponsor has expansive networks and management expertise may consequently outperform the market, or a strong sponsor may have greater access to capital justifying the application of a lower refinance constant by DBRS in its analysis. The parameters in Appendix D can be adjusted at the loan level to account for a well-capitalised, experienced sponsor. Furthermore, to the extent the sponsor has real, significant equity contributed in the deal, the probability of default is expected to be reduced and the parameters may be adjusted to reflect it.

Market
DBRS recognises that in times of economic stress, real estate capital focuses on more established markets with comparatively higher liquidity and transparency. As such, defaulted loans in tertiary or rural markets tend to experience significantly higher losses, due to both a limited investor base and market inefficiencies created by a lack of comparable transactions in the market. DBRS may adjust its hurdles to take into account the consideration of market liquidity in the property's submarket as measured by economic activity, economic diversity, loan issuance, population and the general appropriateness of the market for the property type and collateral in question.

Owner-Occupied
DBRS recognises the additional challenges inherent in having an owner-occupied or partially owner-occupied property. The risk associated with interruptions in a property's revenue stream is compounded by the borrower's operating business. Although, if the space is occupied by a business that is the borrower's lifeblood, the probability that the borrower continues to fund debt service, despite a downturn, may increase, thereby lowering the probability of default, at least as long as the long-term view of the business profitability is positive. However, loss given default may ultimately be inflated because the result could be negative cash flow due to an absence of revenue to offset the property's operating expenses, compounded by any specialty use build-out specific to the operator's business. As such, DBRS generally uses the more conservative of the direct sizing parameters in Appendix D to account for owner-occupied properties.

Specialty-Use Build-Out
Properties that are designed or fitted out for special uses, such as medical office buildings, clean room industrial facilities or cinemas, present a risk to stabilised cash flow if the current tenant vacates the property and a replacement tenant with similar specialised space needs cannot be readily found. Marketing times for properties with specialty use build-out can be prolonged, which can lead to significant interruptions in a property's revenue stream. As such, DBRS typically uses the more conservative of the direct sizing parameters in Appendix D to account for special-use properties. In certain instances, DBRS may make further adjustments depending on the functionality of the space and the existing NCF volatility.

Loan Size
Size can affect DBRS's loan analysis. While the refinancing risk can be higher for large loans, it can also have an impact on a loan's severity of loss given default. In general, it is observed that the larger the loan, the lower the severity of loss given default, as a percentage of the original principal balance.[3] This can be explained in part by the fixed expenses associated with a workout and/or foreclosure of a specially serviced asset, which are disproportionately large for smaller loans. It may also be explained by the nature of assets encumbered with large loan balances, which, all else being equal, tend to be located in more liquid markets, and have more sophisticated sponsors and operators. Finally, loans that are pivotal to the performance of the bonds (as large loans tend to be), frequently garner more attention from the investor community and the more experienced servicers that are charged with maximising the recovery. As such, they typically experience more modifications and workouts that result in less acute losses. DBRS's loan size adjustments are often captured in the market or property quality adjustment. Additionally, DBRS may use the upper or lower bound of a range in the direct sizing parameters, as warranted.

Senior-Ranking Claims
At loan maturity date or upon loan default there might be third-party claims ranking senior to the loan balance, for example swap mark-to-market payments. In its direct sizing approach, DBRS adjusts for such potential additional senior debt either by adding the exposure to the loan balance, or by adjusting the sizing parameters which reduces the loan amount that can be highly rated.

Freehold and Leasehold Interests
DBRS's European CMBS Rating and Surveillance Methodology assumes that loans are secured by a mortgage granted over either a leasehold or freehold interest in the property. Having a freehold interest in a commercial real estate asset assumes one has a valuable asset into perpetuity, one that creates revenue and likely maintains or appreciates in value. A leasehold effectively splits an asset into two ownership interests: freehold and leasehold. The freeholder maintains ownership in the land and enters into a long-term lease (typically 50 years or more with multiple extension options). The lease typically permits the lessee to develop an income-producing asset (improvements) on the site, and also enables the lessee to recover construction costs and a return on capital prior to the maturity of the initial term of the lease.

The leasehold interest, whose term is finite, is viewed as a wasting asset that becomes totally worthless when occupancy rights revert to the freeholder at the termination of the ground lease. Thus, if a loan on a property subject to a short-term ground lease needs to be refinanced, the expected valuation decline may make it difficult to get the loan refinanced. Furthermore, it may also not be possible to fully amortise the remaining loan amount prior to the ground lease expiration if interest rates increase or a credit event, such as a major lease expiration, occurs and there is a diminution of NCF at the property.

DBRS expects that the amortisation term of the loan expires at a minimum of ten years prior to the ground lease termination. DBRS adjusts its refinance constant if the ground lease is structured with a schedule less than ten years beyond the mortgage loan amortisation term. In addition to the refinancing aspect, DBRS considers other factors that may cause a property subject to a ground lease to have lower cash flow stability, resulting in a higher probability of default and potentially increased loss severity. DBRS may penalise or use more conservative inputs if factors such as contractual ground rent escalations, leasehold mortgagee's notice of default and right to cure provisions and the leasehold mortgagee's rights to become the borrower in the event of enforcement are not appropriately mitigated by the mortgage loan structure or transaction structure.

3. Not taking into consideration any swap breakage fees that may be due and payable in priority to the bondholders.

Post-Adjustment Sizing Parameters
DBRS notes that there may be instances where the DBRS sizing parameters and cap rate ranges used to determine the transaction credit enhancement may fall outside of the ranges in the tables due to the adjustment factors noted above. The application of the DBRS sizing parameters outlined in Appendix D, as adjusted by the aforementioned factors, results in the maximum cumulative amount of proceeds for each loan(s) at each rating category. The cumulative proceeds are indicative of the DBRS ratings for the loan or transaction, which are then used in conjunction with other qualitative factors to compare with the issuer's proposed capital stack in order to recommend and assign ratings. An example of loan-level direct sizing is shown in Appendix E.

Legal and Structural Considerations

DBRS considers the integrity of the legal framework and an appropriate review and assessment of the risks associated with structural features to be critical to the overall strength of the credit ratings assigned. To the extent the transaction may be exposed to non-credit-related risks, DBRS expects such risks to be mitigated in a manner commensurate with the target rating level. As such, each transaction is assessed and reviewed on its merits, considering the particular structure adopted. CMBS transactions share many similarities with the securitisation of other asset types. DBRS recognises common legal criteria can apply across different asset types in each jurisdiction. Consequently, where appropriate this methodology includes a reference to the DBRS *Legal Criteria for European Structured Finance Transactions*.

Transaction Structure
Generally, CMBS transactions in Europe are structured as debt issuances by an SPV. The SPV is commonly a tax transparent entity and the cash flows are structured in a way so that the SPV attains a tax-neutral position. Structuring the SPV as an entity unrelated to the originator also helps to minimise the risk of substantive consolidation.

In the European market, there are currently two types of structures used for CMBS.

The first structure, which is based on limited recourse to the commercial mortgage loans, involves the transfer of ownership by the originator of a portfolio of commercial mortgage loans by way of sale to an SPV (true-sale CMBS). This sale is funded by the proceeds received from the issuance of notes by the SPV. Security is granted over the mortgage loans by the SPV to a note trustee to hold the loans on behalf of the noteholders as well as other secured creditors. Other creditors could typically include a swap provider and a liquidity facility provider.

The second type of structure has broader recourse and is closer to corporate bonds as a result. Such a structure involves a property-owning company, which would use the debt capital markets to finance or refinance a portfolio of commercial real estate properties. In these transactions (agency CMBS or secured loan CMBS), the SPV issues notes and transfers the note proceeds by way of a loan to the property company. Security for the notes comprises the security granted by the property company over the property portfolio, which is transferred to a note trustee to hold on behalf of the noteholders and other secured creditors. The main distinction between a true-sale CMBS and an agency/secured loan CMBS is that in the secured loan CMBS, there is no transfer of ownership of the underlying mortgage loans to the SPV. Not all of the issues raised in this section apply to secured loan CMBS. DBRS would consider the structure of each agency/secured loan CMBS transaction on a case-by-case basis.

Irrespective of the structure used for a CMBS transaction, it is important that a sufficient period of time is provided between the maturity of the longest loan and the maturity date of the rated notes. This is to allow the servicer an appropriate amount of time to take enforcement action on the loan's collateral and maximise recovery proceeds.

Equally important is the control structure of the underlying loans and the CMBS. Structures with complex ownership, approval or consultation rights can delay a workout and/or enforcement process, negatively impacting the timing and ultimate recovery of principal for noteholders. DBRS regards these features as key to its analysis and hence reviews the control structures, as well as the period allowed by the transaction, to realise value from the relevant properties in determining its ratings.

Cash Flow Waterfall
The cash flow waterfall in a CMBS transaction determines the contractual priority of payments between the parties to a transaction, both before and, separately, after any default by the issuing SPV. Each waterfall is agreed according to the requirements of the commercial parties and accordingly varies by transaction. DBRS considers the cash flow waterfall of each transaction separately. DBRS typically expects the underlying basis to be either pro rata pay, sequential pay or modified pro rata pay within the waterfall.

DBRS reviews, considers and compares the triggers and the underlying terms of the loan payments. It stress tests each appropriately in order to determine any deficiency of funds to meet all the repayment of obligations to noteholders and other secured creditors in accordance with the terms and conditions of each transaction. In its analysis, DBRS reflects all sources of cash flow and constraints that include the derivatives contracts within the transaction, the liquidity facility and the Available Funds Cap as discussed further below.

Final Rated Maturity

DBRS evaluates the expected tail period of a transaction (i.e. the time period between maturity date of the last maturing loan and bond maturity) at closing to assess whether there would be sufficient time for the servicer to realise recoveries from the collateral in order to satisfy the obligations of an issuer. In European CMBS, the tail period of DBRS rated transactions across Europe has ranged from two to seven years.

In DBRS's view the tail period is typically more relevant for the junior noteholders as in a sequential-pay transaction, a prolonged recovery timeline and/or lower recoveries would have the largest effect on the junior classes. However, short tail periods can also affect the recovery prospects for senior bonds as they increase the likelihood of a property fire sale shortly before bond maturity.

DBRS reviews the length of tail periods which would be commensurate with higher rating levels in the context of the relevant jurisdiction's laws and expected enforcement timing. For example, the United Kingdom has a very efficient enforcement process compared to the Italian enforcement process, which is one of the longest.

Certain loan characteristics including, but not limited to, specialty property types, complex borrower structures, unique loan characteristics and extremely large (greater than £/€500 million) refinancing balances may increase the tail period deemed to be appropriate. Alternatively, the tail period can be shorter if the pool is diverse and/or there is limited balloon refinancing risk. As such, to be able to assign high ratings to typical European CMBS with loan refinancing exposure, DBRS expects tail periods to range from four years for standard UK loans to ten years for complex loans in less creditor friendly jurisdictions. If DBRS deems the tail period is too short such that higher recoveries which may have been achieved under a longer tail period are not possible, DBRS may apply a haircut to the expected recoveries and/or adjust the direct sizing parameters.

While determining a strategy to recover loan proceeds, servicers may have the discretion to extend the loan terms in accordance with the transaction documents by referencing the servicing standard. This would limit the time to realise recoveries on collateral, however, if this were to occur. DBRS typically reviews the circumstances when monitoring outstanding CMBS transactions during the on-going surveillance process (see below).

DBRS typically deems transactions that remain outstanding during their respective tail period to be underperforming. If a transaction remains outstanding after the maturity date of the longest loan, this implies that the respective loan(s) did not repay on time. As a result, in its on-going surveillance process, DBRS considers the servicer's work-out strategy as well as the remaining time to CMBS bond maturity. Just like a tail period that DBRS considers too short during the initial rating analysis, a fast approaching CMBS bond maturity may also limit the highest achievable rating for the transaction. Hence, CMBS bonds that remain outstanding during their tail period are typically expected to experience a downward pressure on their ratings, depending on the time remaining until bond maturity.

Hedge Providers

Hedges are put in place within a CMBS transaction to ensure that the cash flows arising from the income and principal received from the mortgage loans match the cash flows expected by the noteholders and other secured creditors in the payment waterfall as closely as possible. Typically, interest rate and foreign currency hedges are put in place, but retail price index or other derivatives may also be used, depending on the underlying asset revenue flow. It is also common for triggers to exist, such as a swap termination event, which can change the swap payment priority in a transaction. DBRS reviews all of the hedges used in a CMBS transaction (at the borrower level, issuer level or a combination of both) for payment priority and triggers that would cause a change in the payment priority of the swaps.

The mortgage loans within a European CMBS transaction may pay a fixed or floating rate of income and a hedge is normally required to match the corresponding payment obligations under the notes. Depending on the particulars of a transaction, to the extent that the rated obligations may be exposed to basis risk, DBRS expects that risk also to be mitigated commensurate with the assigned ratings.

DBRS reviews the agreements, the parties to the agreements and the terms upon which such parties may be responsible for any breakage fees, costs and losses. Each hedge is reviewed for consistency with DBRS's Derivative Criteria for European Structured Finance Transactions and, if applicable, DBRS's *Legal Criteria for European Structured Finance Transactions*. If a particular derivatives arrangement is considered not consistent with the expectations set out in DBRS's *Derivative Criteria for European Structured Finance* methodology, DBRS may not be able to give full credit to the hedging arrangement.

Liquidity Facility
CMBS transactions often include a facility specifically available to provide funding liquidity for the structure so the issuer can continue to meet its payment obligations in respect of interest, expenses, and property protection advances despite minor shortfalls arising from delinquent and defaulted loans or unexpected/increased expenses that could affect scheduled interest payments on the rated notes, loan protection advances and hedging costs, as applicable. The liquidity facility provider is typically entitled to receive all amounts of interest and repayments of principal drawn under the liquidity facility agreement in priority to payments to be made to noteholders. This may ultimately reduce subsequent amounts available for distribution to noteholders if the amounts outstanding under the liquidity facility are not repaid by the issuer, or from proceeds from the disposal of assets relating to the defaulted mortgage loans. Any such reduction is typically applied in reverse sequential order within the waterfall and can result in a reduction in the amounts available to pay junior classes of noteholders. In certain circumstances, where the valuation of the underlying properties supporting the loan(s) has reduced to below a certain threshold amount(s) or where the loans have amortised, the available liquidity facility will decrease. The liquidity facility is not intended to provide credit enhancement for credit losses.

The availability of sufficient third-party liquidity (cash reserves, liquidity facility or servicer advance) is particularly important in securitisations with a low number of loans, given that a payment default of one of the loans could result in a substantial reduction of funds that are available to the issuer to make timely payments on the notes. DBRS European CMBS ratings in the highest rating category (i.e., AAA) and those of the most senior class of notes typically address the timely payment of interest, the latter because non-payment of interest on these bonds would cause an issuer event of default in a typical European CMBS transaction. DBRS's European CMBS ratings assigned to non-senior classes might address the ultimate payment of interest.

In cases where DBRS's rating addresses the timely payment of interest, DBRS assesses whether the transaction's liquidity provisions sufficiently mitigate against transaction level cash flow shortfalls should one or more of the securitised loans default on their interest due. Assessment of whether a certain amount of third-party liquidity is sufficient to allow for timely payment of interest if a loan defaults is dependent on a number of factors, including loan, property and tenant diversity; interest rates in a stressed environment; borrower and loan legal structure; jurisdiction; loan and transaction hedging arrangements; and the specifics of the liquidity arrangement. For ratings in the AAA and AA categories the available liquidity typically enables the issuer to pay interest on the notes for a period of one to two years even if all borrowers stopped paying. As DBRS has very low tolerance for missed interest payments in respect of the highest two rating categories, it is typically not possible to achieve ratings addressing the timely payment of interest in the two highest rating categories without sufficient third party liquidity provisions.

As mentioned above, DBRS's rating on European CMBS bonds that rank senior typically addresses the timely payment of interest. For senior European CMBS bonds that are rated A(high) or lower and do not benefit from third party liquidity provisions, DBRS assesses whether the loan characteristics allow for timely payment of interest in a stressed scenario, given the lack of third-party liquidity. Such assessment considers a number of factors, including loan, property and tenant diversity; interest rates in a stressed environment; loan interest coverage ratios; borrower and loan legal structure; jurisdiction; loan and transaction hedging arrangements. For DBRS commercial real estate loan ratings that typically not address the timely payment of interest, please refer to Appendix F.

Available Funds Cap
The Available Funds Cap is a ceiling applied to the amount of interest payable to noteholders if there are insufficient funds to meet the total interest obligations of the issuer, for instance as a result of early repayments under the mortgage loans. European CMBS loans have borrower prepayment and repayment options (subject to applicable prepayment fees). The Available Funds Cap can be assigned to certain classes within a CMBS transaction, most typically the lowest or most subordinated class, since this enhances the chance that the more senior classes of noteholders will be paid in full. DBRS notes that this can also be addressed by structures where the junior notes have deferrable interest terms.

True Sale
Generally, the key to a true-sale CMBS transaction involves isolating the assets from seller risk. This is usually accomplished by the transfer of legal ownership of the mortgage loans and related security from the seller to an SPV by way of a true sale. Following a true sale, the mortgage loans and related security are no longer assets of the seller and are not subject to claims by creditors of the seller or an insolvency practitioner subsequently appointed to the seller. The criteria governing a true sale of mortgage loans are the same as the criteria governing the sale of other securitised assets. In this respect, the key is that, after the sale, the seller retains no beneficial interest or rights in or to the sold mortgage loans and related security. However, in practice the sellers are not usually commercially remote from the transaction or its assets. They may retain notes of a subordinated class in a true-sale CMBS transaction[4] and they usually provide seller's representations and warranties with respect to the mortgage

4. DBRS also notes that sellers or sponsors of mortgage loans under true-sale CMBS transactions in the EU, are required to represent to the investor noteholders that they intend to retain a net economic interest in accordance with the applicable regulatory requirements.

loans, the breach of which may lead to an obligation to repurchase the mortgage loans. The seller may also have purchase options once the pool amortises down to a specified percentage of the original pool balance. DBRS expects that none of these seller commitments will affect the true sale of the mortgages and transaction legal opinions are reviewed to assess each case.

The requirement to notify mortgagors of the sale of their mortgage loans into a transaction structure varies across different European jurisdictions. To the extent that this is required by law or is advisable, DBRS would expect to see mechanisms for mortgagors to be notified of the sale of their mortgages to the issuer. Notification, timing and triggers are typically clearly set out in the transaction documents.[5] DBRS conducts a review of the mortgage transfer in each instance.

In Europe, there are notable differences in the way jurisdictions approach the true sale issues in CMBS transactions. In particular, certain jurisdictions do not have specific securitisation legislation that sets out the procedures to be followed to achieve a true sale. That does not mean that a true sale is not possible in those jurisdictions but merely that the general law needs to be followed carefully to achieve that result.

For more information on DBRS's general expectations with respect to true sales and/or related legal opinions, please refer to the *Legal Criteria for European Structured Finance Transactions*.

The Issuer

It is important to consider the nature of the issuer in relation to the seller. Complications can arise when the issuer is a related entity of the seller. DBRS expects that an issuing SPV is structured as an entity independent of and separate from the seller. For more information on DBRS's general expectations in respect of issuers of rated obligations and issues summarised herein, please refer to DBRS's *Legal Criteria for European Structured Finance Transactions*.

Mortgage Origination Practices

The rights obtained by the issuer with respect to each individual borrower under the mortgage loans depend firstly upon the nature of the assets available for transfer by the seller to the issuer, and then on the security available from both a practical commercial perspective and from a local law perspective, where the security over the assets is created. Each transaction has different assets with different security. DBRS typically looks for the equivalent of first-priority legal charges by way of mortgage or pledge, legal assignments of all transferable assets not otherwise the subject of the mortgage or pledge, and also considers what guarantees and indemnities have been included to support the security. DBRS generally expects to receive the legal opinions of the seller's (or the borrower's) counsel on the security given at the time it was taken.

It is important to examine the security supporting each loan in a CMBS transaction. Substantial differences can exist in available security depending on the jurisdiction, nature and ownership structure of each property and in the reliance that can be placed on such security.

A customary origination package on the mortgage loan level would generally be expected to include:

1. By way of security, first fixed legal charges (or floating charges, where appropriate) over:
    a. The property by way of legal mortgage, including assignment of the rent, the insurances and all management and maintenance agreements related to the property;
    b. The rent account and any other accounts holding transaction cash flow;
    c. Shares, goodwill and uncalled capital of the borrower vehicle;
    d. Any guarantees and subordination agreements that the borrower has the benefit of; together with
    e. Equivalent security over any other assets owned by the borrower (where necessary).

Supporting this security, DBRS generally expects to see:

2. A general security agreement entered into by the security trustee and the borrower, dealing with the relationship between the parties and the various security documents provided.
3. Customary legal opinions at the borrower and originator level. DBRS expects to have access to, and to review, all legal opinions. Such opinions are also expected to deal with the security documents and with any issues of enforceability, as well as other transaction-specific issues as appropriate.
4. Insurance policies placed to cover known issues, such as a title insurance policy, or related reports or legal opinions prepared by legal counsel.

5. DBRS notes that in cases where the transfer of mortgages to a group company does not require the giving of notice to the mortgagor, an intermediate entity set up as the seller's subsidiary will often purchase the mortgage loans from the seller to affect the true sale from the seller. The subsidiary will then raise a secured loan from the issuer against the mortgage loans.

5. Title and charges registration documents of the property under the mortgage or related reports prepared by legal counsel.
6. Any subordination agreements entered into by the seller (as mortgagee) with the properties' major tenants.

The documents in the origination package for each obligor are typically assigned to the issuer as part of the transaction. If the issuer has to enforce its rights against the borrower, without the benefit of subordination agreements with tenants, enforcement can become more complex since, in particular circumstances, tenants may be in a position to terminate the existing leases. For example, the tenant typically enters into a lease with the borrower, but must recognise a successor borrower if the borrower is enforced upon. Avoiding this result requires informed legal advice at the time enforcement action is taken against a borrower.

Reports

As part of the origination package, DBRS considers it important to review the seller's practice, particularly with respect to valuations, environmental reports and technical reports. Ideally, these reports are obtained at the time of mortgage origination, or if later, at the time of any refinancing. DBRS is aware that the issuer may not be able to rely directly on these expert reports if they disclaim liability to third parties. In practical terms, DBRS prefers that any reports restricted in this way are readdressed so that the issuer and the rating agencies may rely upon them. If this is not possible for any particular report on a transaction, DBRS considers the significance of the report for its analysis and may make appropriate adjustments in its analysis. Factors affecting the significance of a report include the age of the report, the date of the mortgage and the practical value attached to the given report. In relation to environmental reports, DBRS also reviews the use of environmental insurance for CMBS transactions, as applicable. DBRS reviews the extent of the insurance coverage, including whether it is comprehensive and if it deals with the risks associated with the specific properties. In certain circumstances, DBRS may also check if the individual and global policy limits in the insurance policy are satisfactory, given the mortgage pool and types of properties involved.

Representations and Warranties

As part of the sale transaction, the seller provides various representations and warranties concerned primarily with the mortgages and related security.

These representations and warranties vary with each transaction; however, apart from the usual representations and warranties concerning the corporate status and material liabilities of the seller, among the points DBRS expects to be covered are:

1. The status, title and permits relating to the properties.
2. Mortgages and leases.
3. Mortgage files, including insurance and environmental representations.
4. Related security and its ranking.
5. The nature of the sale transaction.

If a representation or a warranty is untrue and remains uncured, a repurchase obligation would usually arise if it has a material impact on the issuer's security or if the breach has a material impact on the noteholders.

Servicing

Depending on the jurisdiction, there are generally two servicing roles in a CMBS transaction: servicing and special servicing (although more than one role may be assumed by one servicer).

The servicer, during the ordinary course of business of the assets, has responsibility for managing payments prior to any default (the servicer). The servicer is responsible for a loan's day-to-day administration and servicing. The servicer is often the originating bank (or an entity within the originating bank group) or a third-party commercial mortgage servicer.

The special servicer takes over the servicing role after a mortgage loan defaults. The special servicer generally becomes involved in the servicing process when the mortgage ceases to perform within expectations (i.e., it may in certain circumstances of imminent default transfer prior to actual default). Although the servicer can be expected to take on the role of the special servicer, the special servicer may be a third-party commercial mortgage servicer with insolvency and workout experience for the asset class. Special servicing arrangements are an important component of CMBS transactions. Most CMBS transactions provide for the transfer of the servicing of a mortgage loan from the servicer to the special servicer in the event of default under the mortgage loan.

Generally, because different remedies may be pursued on a mortgage loan default, either concurrently or alternatively, it is important to have a special servicer that is knowledgeable in workouts and possesses the resources and connections to obtain advice from legal and real estate specialists. Remedial decisions can make a significant difference in the timing and amount of any recoveries under defaulted mortgage loans.

Considerations of Different Transaction Parties in Loan Work-Out Scenarios

European CMBS transactions analysed with this methodology typically consist of a minimal number of loans. Unlike in granular securitisation transactions, the default of one or more loans can represent a large part of the securitised portfolio, and the associated work-out strategy can have an impact on the amount and timing of loan recoveries to noteholders. As such the analysis of how loan defaults are dealt with is relatively less focussed on the generic ability and capabilities of the servicer and special servicer, but considers additional factors including the servicing standard, flexibility of the special servicer, the tail period, the transaction structure and the interests different transaction parties (including noteholders) may have after one or more loans default. Ultimately, all these factors interplay with each other.

European CMBS are typically serviced by specialised third-party servicers and the relationship between these entities and the issuer are governed by the servicing agreement. In terms of how to work out defaulted loans the servicing agreement is usually not very descriptive so that the special servicer has sufficient flexibility. In DBRS's view, such flexibility is important considering the bespoke and diverse nature of CRE loans for which work-out strategies include loan restructurings, modifications, consensual property sales and enforcement. The servicer and special servicer have to adhere to the servicing standard that is governed in the respective servicing agreement. In Europe, the servicing standard typically states, among other items, that the special servicer should adhere to all applicable laws and maximise the amount and timing of recoveries before the CMBS bond maturity. In addition, the bond maturity typically restricts the servicer and special servicer in relation to the length of loan extensions and/or standstill agreements.

The servicing standard is linked to the CMBS bond maturity and therefore the tail period of the transaction. Several legal and loan-related as well as property portfolio-related considerations are reflected in the length of an appropriate transaction tail period to enable the special servicer to finalise the work-out process of the longest loan before bond maturity.

Considering the variety of potential work-out strategies at the disposal of the special servicer, after a loan defaults, the CMBS noteholders could have different, and sometimes contradicting, views on the most appropriate course of action for the special servicer. In particular, after substantial property value declines, junior noteholders typically prefer the special servicer not to proceed with the sale of the property to avoid the crystallisation of losses. In contrast, being the beneficiary of credit enhancement, senior noteholders might prefer a fast sale of the assets, in particular, if they bought the bonds at a discount and if the transaction has a sequential-pay structure. A similar pattern could prevail with respect to the different interests of the senior lender (the issuer of the CMBS) and those of potential junior lenders to the borrower outside of the CMBS.

Loan-level Considerations

At the loan level, such potential dilemma of the special servicer is dealt with by the inter-creditor and the servicing agreements. It is therefore important to consider several aspects of the loan structure, the servicing agreement and the inter-creditor agreement, in the CMBS analysis. With regard to the loan structure, this includes whether secured subordinated debt is mezzanine debt that is typically not secured by a mortgage but share pledges; or whether the subordinated debt shares the same mortgage security as the senior loan (A/B loan structure). The type of subordinated debt affects which legal rights junior lenders have in case of refinancing and/or work-out (for example, release of security). As regards the inter-creditor and servicing agreement, the analysis includes, for example, whether the aforementioned servicing standard applies to the whole loan or to the senior loan only; whether subordinated lenders have consultation or approval rights; whether junior lenders have the right to replace the special servicer and if they do, when such right ceases to exist. As regards the latter, subordinated lenders are typically the controlling party with certain consultation (or even approval) rights in relation to loan restructurings and/or work-outs; and the right to replace the special servicer unless the property value falls under a certain level (control valuation events). In DBRS's view, the right to replace the special servicer consultations rights in combination with the right to replace the special servicer can be economically similar to approval rights.

Transaction-level Considerations

At the transaction level and even in cases where no subordinated debt outside of the CMBS structure exists, the analysis of the servicing agreement is equally important due to the potentially divergent interests of the senior and junior CMBS noteholders. At the outset of the CMBS transaction, the most junior noteholders are usually the controlling class at issuer level with certain rights vis-à-vis the special servicer at the time the CMBS is the controlling party with respect to the loan and inter-creditor agreements (if applicable). The CMBS controlling class' rights typically include the right to replace the special servicer and consultation rights in relation to loan work-out strategies. To exercise these rights, the controlling class is typically allowed to appoint an operating advisor which in turn would engage with the special servicer. As a result of such structure, junior noteholders have some influence over the actions of the special servicer. As the interests of junior noteholders can contrast with the interests of more senior noteholders, European CMBS structures typically include several safeguards aimed at ensuring that loan recoveries are maximised for the noteholders as a whole. For example, the controlling class rights are often subject to a control valuation event, similar to the mechanism at the loan level: once the property value declines to a certain extent, the controlling class rights would transfer up the capital structure. This is an improvement compared with many European CMBS transactions issued before 2007 in which the controlling class rights typically move up the capital structure only much later, after losses have been allocated to the junior classes (i.e., after the loan work-out).

Another safeguard to protect the interests of the noteholders as a whole is the servicing standard itself, according to which the special servicer typically has to maximise the present value of recoveries. Optimally this involves a special servicer to compare different work-out options and choose the one with the highest present value before consulting with the controlling class and/or operating advisor. In DBRS's view, the more transparent such process is for noteholders of all seniority, the more protected the different interests of different classes of noteholders, especially combined with a clear process of noteholder ad-hoc committees.

At bond maturity, a European CMBS transaction typically enters a different regime. If not repaid at that point in time, senior noteholders can direct the trustee to enforce against the CMBS issuer and sell the issuer security (i.e., the issuer could sell the defaulted loan or, alternatively the trustee can direct the special servicer to sell the properties). This means that after bond maturity senior noteholders have strong control. As they are typically mostly interested in a quick sale for a price of at least the remaining outstanding balance of the senior notes, this could be to the detriment of more junior noteholders. The mezzanine noteholders are typically in a difficult situation as they do not have any consultation or special servicer terminations rights before maturity, which belong to lower ranking noteholders at that point in time, and they do not have any enforcement rights after an issuer event of default. At the same time, just like investors in more junior classes of notes, they face the risk of full principal write down after bond maturity.

Certain elements of the transaction structure of the post-crisis CMBS typically aim to avoid the situation of an enforcement against the issuer after bond maturity; not only to protect junior noteholders, but also because the implementation of a note enforcement can be difficult as the trustee would typically require indemnification against potential liabilities. Firstly, the servicing standard now typically explicitly states that the special servicer should finalise the work-out process by the time of bond maturity. In addition, the structure usually mandates the special servicer to draft a note maturity plan a certain number of months (typically six) before bond maturity. In such note maturity plan, the special servicer would outline different work-out scenarios, one of which is the enforcement against the issuer. Process-wise, noteholders of all seniorities are consulted about the different scenarios and allowed to vote. If no agreement between the different classes of notes could be achieved, the work-out option voted on by the most senior class or notes is carried out. While such process does not eliminate conflicts of interest, it is aimed at facilitating a more orderly resolution shortly before or at CMBS maturity, which could ultimately result in higher recoveries.

As outlined above, in a securitisation asset class as heterogeneous as European CMBS the different interests of the different transaction counterparties and classes of noteholders need to be finely balanced, especially in case of adverse loan performance. Clearly defined responsibilities and processes as well as transparency are key, in DBRS's opinion. When analysing European CMBS, DBRS considers the different structural elements and safeguards in this respect, in particular, in relation to the servicing agreement, consultation as well as the controlling rights and the transaction tail period. In its analysis, DBRS might adjust the large loan sizing parameters if it is of the opinion that the transaction structure does not sufficiently provide for a flexible and recovery-maximising loan work-out process.

The Seller as a Servicer or Special Servicer

Other legal risks may arise when the seller also acts in the capacity of the Servicer or Special Servicer. A number of considerations need to be taken into account with regard to the risk of the seller entering into insolvency proceedings or applying for creditor protection to re-organise under an applicable country's legislation.

These issues include:

1. The ability of the issuer to appoint a replacement Servicer or Special Servicer.
2. Obtaining cash held under the control of Servicer and any commingling issues.
3. Obtaining any records or mortgage files in the Servicer's or Special Servicer's control, including the right to use any record-keeping software in transferring the servicing function.
4. The ability to register transfers of mortgages and related security on title to the various properties.
5. Informing mortgagors of the sale and the redirection of cash flows to the replacement Servicer.

Miscellaneous Considerations

A number of other items are typically considered in a CMBS transaction. At the asset level of a CMBS transaction, DBRS generally considers the following (where applicable):

1. The structure and set-up of the borrower/property holding company (the Propco).
2. An analysis of the effectiveness of the security given over the property on the insolvency of the Propco.
3. An analysis of the tax position of the Propco and property.
4. The ownership and control of the Propco (including any security granted over the shares of Propco).
5. An analysis of key contracts at the Propco level, including property management agreements and material lease agreements.

Loan-level legal review is generally conducted by review of the loan-level documents, when warranted or appropriate, or by review of originator's/loan seller's responses to DBRS's loan-level legal questionnaire, where applicable.

Ratings

The DBRS long-term rating scale provides an opinion on the risk of default. That is, the risk that a borrower or issuer will fail to satisfy its financial obligations in accordance with the terms under which an obligation has been issued. DBRS does not rate to the expected or scheduled maturity date set forth by the issuer. Therefore, while DBRS identifies transactions and notes that have considerable extension risk, ratings may not be affected if the loans extend. DBRS ratings on interest-only notes address the likelihood of receiving interest under the notes based on the notional amount outstanding in accordance with the terms and conditions applicable to such notes. DBRS considers the interest-only notes' ranking within the transaction payment waterfall when determining the appropriate rating.

Rating of Swap Payments

Periodically, DBRS gets asked to assess the credit risk of swaps related to European CRE loans or CMBS. DBRS uses the European CMBS Rating and Surveillance Methodology to rate CRE or CMBS swaps. As such, the rating agency analyses the CRE collateral in the same way as for CRE loans and uses the same direct sizing parameters shown in Appendix D. For swaps, additional considerations include:

Swap Structure

European CRE loan or CMBS swaps can be either at the borrower level or at CMBS level. They may either reference a single loan or the entire portfolio. Depending on the swap structure, the relevant DBRS DSCR or LTV hurdles upon application of the direct sizing parameters, are either loan-level or portfolio-level.

Ranking of Periodic Swap Payments

If a net payment is due to the swap counterparty, it can rank senior to loan interest payments (if at borrower level), senior to transaction interest payments (if at transaction level), or pari passu with loan interest payments (if at borrower lever) or with interest payments of a specific class of notes, most often the most senior class of notes (if at transaction level). In determining the relevant DSCR, DBRS considers the periodic swap payments and debt service obligations that rank senior or pari passu to periodic swap payments. DBRS also considers structural aspects, for example whether the liquidity facility can be drawn to pay the swap counterparty in case of payment shortfalls.

Size and Ranking of Potential Swap Termination Payments

In case of early termination, a payment may be due from or to the swap counterparty. For example, a fixed-to-floating interest rate swap is typically "in the money" from the viewpoint of the swap counterparty if interest rates decline; the mark-to-market exposure of an interest rate swap typically declines when the swap approaches its maturity date. As such, if the swap maturity and the loan maturity are identical, the swap counterparty does not have any exposure to the borrower or CMBS transaction after the loan maturity. To assess the credit risk of such termination payment, DBRS estimates the potential exposure over time based on stressed interest rate developments, and adds such exposure to the loan balance, hereby increasing the LTV of the CRE loan and/or CMBS. DBRS then considers the ranking of such potential termination payment. Swap termination payments typically rank senior to loan principal if at borrower level. At transaction level, they can rank senior to all note principal, but could also rank pari passu to a specific class of notes (most often the senior note). Importantly, the ranking at transaction level could change after certain transaction events unrelated to the creditworthiness of the swap counterparty, for example, a note event of default which becomes relevant if the swap maturity exceeds the note maturity. The ranking of potential swap termination payments in the loan and/or transaction structure determines the relevant DBRS LTV when using the direct sizing parameter to rate the swap.

Ranking of Swap Termination Costs after Swap Counterparty Credit Events

European CRE or CMBS swaps typically contain a clause that subordinates potential termination payments after an adverse credit event affecting the swap counterparty. Such adverse credit event could be a counterparty default or an early termination if the swap counterparty is not replaced after a swap counterparty downgrade – for more details, see DBRS's *Derivative Criteria for European Structured Finance Transactions*. As a result of the ranking, depending on the creditworthiness of the counterparty, the rating of potential swap termination payments is typically restricted by the rating of the derivative counterparty itself.

European CMBS Surveillance

After issuance and assigning initial ratings, DBRS monitors ratings in accordance with the *Structured Finance Ratings Surveillance Global Policy* on www.dbrs.com. In European CMBS, a number of events must occur before DBRS changes the rating of a transaction. Each quarter or at a frequency consistent with the transactions interest payment dates (IPD), all DBRS-rated CMBS transactions are reviewed for performance developments and cumulative credit evolution. In addition, DBRS reviews ad hoc transaction notices (RNS) that are common in European CMBS and that inform investors of loan or transaction performance events occurring between two IPDs. A full rating review process is initiated for a transaction when there are material changes of the collateral performance.

The loan(s) backing the CMBS transaction are analysed by a surveillance analyst. For transactions that are secured by more than one loan, DBRS considers the cumulative impact of small loans as well as the changing credit dynamics of large loans. Each of the loans within a multi-borrower pooled transaction is subject to an in-depth review. Underperforming loans are identified as those that are delinquent, specially serviced or those loans that are perceived by DBRS to have a higher likelihood of default. The CMBS transaction is then analysed to account for all changes in its collateral and financial performance.

During the review process, changes to the ratings may be recommended. There are typically three types of rating actions that may be taken on each class, following the review of a transaction: upgrade, downgrade and confirmation. In addition, ratings can be placed Under Review with Negative, Positive or Developing Implications or assigned Stable, Negative or Positive trends. Classes are placed Under Review when something occurs that could change the credit makeup of a pool in one direction or another, but further information or analysis is needed. DBRS typically keeps a class Under Review for only a short period of time, as the information needed to help determine the magnitude of the required action is often expected to be published by the servicer in the short term; however, a transaction can remain Under Review for a longer period if warranted. A trend is used to indicate a change in the credit dynamics of a bond that is not significant enough to warrant a rating action. For example, there may be a period of poor or declining financial performance of a property, yet the loan remains current. This situation may not be sufficient in and of itself to change the assigned rating, but real estate cash flows can change rapidly. It should be noted that transactions do not need to be placed Under Review or have a trend change prior to a rating action taking place.

On occasion, there are classes of CMBS with interest payments in arrears, but the cumulative or ongoing interest shortfall is expected to be ultimately recoverable or paid. When the interest shortfall is a question of timing in the shorter term and not of ultimate payment, DBRS notes this with the Interest in Arrears designation for the class(es) affected. Further information in relation to rating actions, Interest in Arrears designations, reviews and trends is available at www.dbrs.com.

Sources of Data

DBRS expects to receive ongoing performance data on each transaction it rates. The main sources of performance data are the trustee or servicer reports, which contain bond-level, loan-level and property-level information. DBRS prefers surveillance information in the format of the Commercial Real Estate Finance Council's (CREFC) European Information Reporting Package© (CREFC E-IRP©) and supports CREFC's initiative in this respect. Additional information sources include, but are not limited to quarterly loan payment reports, servicer or special servicer loan commentaries, asset surveillance reports, asset summary reports, updated property valuations, servicer opinions of value, other broker opinions of value (BOV), other third-party reports, servicer site inspections and other updated data and information to monitor items such as tenants in place, remittance collected, historical collections, and delinquency reports. In this respect, DBRS also considers RNS notices. For credit tenant lease transactions (CTLs), DBRS looks for confirmation that a tenant remains in place and any update of the tenant's credit rating. Lastly, DBRS may conduct its own site inspections and/or independent analysis of any reported data or information, as warranted.

Quarterly Review

On each IPD (typically quarterly in European CMBS), DBRS performs a review of the respective transaction to identify performance trends related to the securitised loans and the related properties. There may be performance changes that occur in European CMBS transactions between IPDs for which DBRS may receive advance information, such as prepayments, transfer of property ownership, loan defaults, special servicing transfers, property revaluations and/or loan modifications. Upon receipt of each remittance report and the subsequent servicer collateral report (typically received by DBRS 30 days following the IPD), DBRS reviews the changes that have occurred at both the bond level and the collateral level. In some instances, these changes may prompt additional steps that DBRS takes to monitor a transaction and that may trigger an in-depth review outside its regular review schedule.

Changes that directly affect the bonds and that need to be addressed timely generally include realised loan losses, bond interest shortfalls or payment in full. The results of DBRS's quarterly bond-level review are typically published individually in performance analytic reports (PAR), which can be found on www.dbrs.com under "Other Research".

In European CMBS, bond-level performance indications are typically backward-looking. More important are loan-level and property-level changes. Performance developments that could result in an in-depth review outside the transaction's review schedule include but are not limited to (actual or imminent) loan default, borrower insolvency, loan prepayments, special servicing transfers, property revaluations showing a substantial value change, substantial property disposals, lease events (a tenant giving notice to vacate or new leases, for example) and property market events.

Bond-Level Review

Losses

Losses on the transaction collateral occur as specially serviced loans are resolved with principal recoveries that are lower than the loan balance, which erodes the transaction's credit enhancement. As losses occur, DBRS compares the actual loss amount with DBRS's most recent estimated loss for the loan and with the assumptions from the last rating action. If the actual loss amount is less or greater than the anticipated loss amount, it may lead to a more detailed review of the transaction.

Classes Paid in Full

As classes are repaid in full, DBRS discontinues the rating(s) on its website. The ratings for the affected class(es) are then designated Discontinued – Repaid.

Interest Shortfalls

Interest shortfalls in European CMBS typically occur when fees accumulate from specially serviced loans and/or when, following the non-payment of interest by one or more loans, the full quarterly payment due on the notes has not been advanced by a liquidity facility. If periodic interest shortfalls occur on a rated class (i.e., interest deferrals) and are anticipated to continue for an extended period, but expected to be ultimately repaid, DBRS assigns an Interest in Arrears designation to the affected class(es). After the interest shortfalls are repaid, DBRS removes the Interest in Arrears designation. If the class is subject to an available funds cap, the class may not accumulate any shortfalls arising from issuer expenses, delinquent loans and/or loan prepayments. In these cases, potential shortfalls are not deferred or designated as being in arrears because interest on the respective class is not due. DBRS considers such structural features when assigning initial ratings to the notes. In the surveillance process, if interest shortfalls are not deferred due to an available funds cap, the Interest in Arrears designation would not be applied.

Collateral-Level Review

Changes that affect the collateral and potentially bond performance are monitored on each IPD and ad hoc in case of transaction notices or other market events.

Loan Delinquencies and Specially Serviced Loans

Changes in delinquencies and specially serviced loans are reviewed. Each quarter, DBRS reviews the loan-level data to determine any changes in the status of specially serviced loans. The analysis of specially serviced loans focusses on the review of the asset summary report prepared by the special servicer (if any). To ascertain more information on the status of specially serviced loans, DBRS may contact the servicer and/or special servicer for further information. If new delinquencies appear, DBRS typically requests more information on the loan(s), such as whether the borrower has been contacted by the servicer and whether there is a potential resolution strategy in place.

Prepayments

Like partial prepayments out of borrower equity, partial loan prepayments following property disposals are mostly considered credit positive for a CMBS transaction, as borrowers often have to pay a release premium, resulting in loan deleveraging. For sequential-pay transactions, partial or full loan prepayments cause the credit enhancement to increase for the existing bonds. For pro rata pay transactions, the impact of the prepayment is generally neutral, but could be negative in the event of adverse selection. DBRS reviews each instance of prepayment to analyse how the prepayment was applied to the bonds and how it affects the credit risk profile of the bonds.

Watchlist Changes and Additions

A loan moves on or off the servicer watchlist when it meets or no longer meets certain criteria identified in the transaction documents or in the transaction performance reports. The watchlist criteria were established by CMBS market participants (lenders, arrangers and investors) to be a guideline for servicers to highlight loans that may have a higher likelihood of default. On each IPD, DBRS reviews each loan and the servicer commentary on the watchlist to understand the risks associated with the performance of each loan. While some loans may be placed on the watchlist for informational purposes, the watchlist status of others may be due to credit concerns that could warrant further research and analysis. DBRS does not view the servicer's watchlist as an exhaustive list of potential warning signs of deteriorating credit; therefore, DBRS may use its own internal tools and knowledge of markets to compare performance of the loans as well.

Interest Coverage Ratios, Debt Service Coverage Ratios and Loan-to-Value Ratios
DBRS looks at the financial reporting of a transaction on its respective IPD. If DBRS is awaiting financials to complete an in-depth deal review or if financials reveal material variances (both positive and negative), it may prompt more analysis at the loan level. Multi-loan, multi-borrower transactions are monitored using weighted-average interest coverage ratios (ICRs) and debt service coverage ratios (DSCRs) as well as both ICR and DSCR stratifications. In addition, DBRS reviews the ICR and DSCR levels for individual loans against the various mortgage ICR or DSCR covenants and, to the extent that there is a breach, follows up with the servicer to understand the course of action being pursued. At loan level, in addition to forward-looking coverage levels (if reported), DBRS also considers the lease expiry profile to identify potential future performance pressure. For vacant space or leases expiring in the near future, DBRS may contact the servicer and ask for a status report on re-letting and/or lease extension discussions.

It is common in European CMBS transactions for the properties securing the loans to be revalued every one to three years in accordance with the mortgage security documentation. It is also common for the mortgages to contain LTV covenants for purposes akin to the monitoring of the ICR or DSCR covenants. A covenant breach may be an indication of weakening fundamentals and may also be temporary, and, as such, DBRS reviews each covenant breach on a case-by-case basis. DBRS uses the updated LTV more as a gauge of a decline in the performance of the loans and the overall transaction.

Refinancing Exposure and Strategy
DBRS is very focused on the exit strategy of the loans and, therefore, closely monitors all loans, and in particular those maturing within a 12-month period, for information that would indicate a problem for the loan to refinance such as low ICRs or DSCRs, high LTVs, low debt yields or other property-specific issues that may cause a delay or uncertainty in the borrower's obtaining refinancing for the loan (e.g., there is a large number of tenant lease expiries near the maturity date).

Execution of Sponsor Business Plans
For some loans, the sponsor has defined a business plan at the outset, for example related to property repositioning and/or property disposal plans. On a case-by-case basis DBRS gives value to such business plans in its underwriting. In such instances DBRS monitors the execution of the business plan by comparing the actual performance with DBRS's initial expectation at the different rating levels.

Structural Review

Interest Rate Swaps or Hedging Agreements
Counterparty ratings are monitored at the individual transaction level in accordance with DBRS's *Legal Criteria for European Structured Finance Transactions and Swap Criteria for European Transactions*. DBRS monitors changes to the rating that may trigger additional collateral posting. Additionally, to the extent the information is available, DBRS considers the position of any loan-level swap agreement when assessing the borrower's obligations during the term and at maturity.

Liquidity Facility Draws
Liquidity facilities are often in place to ensure interest paid to bondholders is current. DBRS monitors the liquidity facility provider, any draws and the expiry of the facility. As the liquidity facility draws increase as a result of delinquent or non-performing loans, DBRS considers the priority of repayment of the liquidity facility against the value of the non-performing loan.

Transactional Covenant Review
DBRS monitors a transaction for any pro rata or sequential-pay triggers at the bond level and assesses the impact on the repayment of the notes. After all of the bond and collateral reviews are complete, the portfolio is assessed and an in-depth deal review is completed as necessary.

In-Depth Analysis

Bond-Level Surveillance
DBRS considers bond-level performance indicators such as interest shortfalls, class repayment, losses and general credit enhancement at each rating level. Part of DBRS's review on each IPD includes assessing interest shortfalls and losses that may have occurred. Interest shortfalls and advances on the liquidity facility, if not repaid, could be indicative of an embedded loss to the lowest outstanding class of bonds. Any type of loss erodes credit support to the rated securities. DBRS looks at current losses and projected losses from the specially serviced loans. The resulting credit enhancement needs to be compared with the analysis which has the most recent annual financial performance of the remaining collateral.

Collateral (Loan-Level) Surveillance

The surveillance of European CMBS collateral performance includes loan-level surveillance and analysis. The main focus is on property analytics, with a review of the property's rent roll, operating statements, servicer site inspections, hedging agreements, the reported actual as well as projected ICR and DSCR, the most recent LTV and loan-level covenant breaches (if any).

Property-level cash flow, if available, is further reviewed in detail by analysing revenue and expenses. DBRS reviews the level of voluntary versus involuntary expenses. For each property, DBRS determines a DBRS NCF, which may be derived from the DBRS initial underwritten NCF or the preceding reported cash flow, typically after applying a haircut. In some instances, DBRS may change its most recent NCF assumption due to changes in the collateral performance. Further, during the loan-level review process, DBRS identifies potential credit concerns about the loan.

In the first few years of a transaction, it is likely that the DBRS NCF from issuance will continue to be used as the primary input in the DBRS Sizing Parameters, as that figure likely considers a more stabilised view on market occupancy, short-term contractual rent increases, a stabilised expense ratio and a higher adjustment to below-the-line items, including capital expenditures, tenant improvements and leasing commissions. When the transaction seasons and property NCF growth is notable, and as a result the deal is performing above expectations set forth by the DBRS NCF at issuance, prior to assigning rating upgrades solely based on the NCF improvement of the underlying loans, DBRS generally applies a property NCF haircut representative of a peak-to-trough NCF decline to consider the sustainability of the NCF improvement. Typically, such NCF haircut is 20% and is applied to the most current reported NCF of the property or property portfolio.

Term Risk

Certain risks associated with commercial mortgage loans are more relevant over the loan term as opposed to the time of loan maturity. Risks over the loan term are most focused on quantitative metrics including financial ratios, occupancy and rental arrears. Qualitative factors including borrower issues, property condition issues and lease rollover/tenant issues are also considered; DBRS actively monitors both quantitative and qualitative factors during the surveillance process.

Balloon Risk

It is important to monitor liquidity near a loan's maturity date because, at any given time, the availability of capital differs, based on the property type and the property's location. Additionally, the loss severity associated with the loan could be greatly affected if the loan cannot be refinanced, as debt availability is an important factor for commercial real estate values. Maturity defaults and extensions may occur more often during times of market illiquidity if there is a lack of competing lender bids. Therefore, as part of its surveillance process DBRS adjusts its refinance constants based on what is available at the time in the market, particularly as the maturity date for the loan approaches. If current market constants are higher than what the loan is currently paying, the loan could have difficulty refinancing. Loans that may have a higher propensity to default at balloon include loans with a refinance DSCR below 1.0 times (x), loans with a large number of lease expiries prior to the maturity or shortly thereafter, interest-only loans and loans with lower DSCRs secured by properties located in rural or tertiary markets. With respect to DSCR and LTV, DBRS considers the profile of the portfolio or A-note balance, as well as the whole-loan balance, if there are B-notes or mezzanine financing in place. The presence of additional debt outside the CMBS may make refinancing more challenging for a borrower and could result in delays and extensions in the refinancing of the loan.

Extension Risk

European CRE loans are often structured with extension options and as the bonds season (i.e., get closer to the expected maturity date), DBRS addresses the extension risk in relation to its balloon risk. DBRS also considers the tail period of the transaction, which is generally dependent on the jurisdiction of the collateral and may range from two to ten years beyond the maturity of the longest loan in the transaction. To the extent the final rated maturity date of the notes is near the extended loan term, the servicer could have a more difficult time resolving loans, if needed.

Remaining Time to Bond Maturity

To the extent a transaction remains outstanding during the tail period, DBRS typically deems the transaction to be underperforming, as it is implied that the loan(s) did not repay at their maturity date. During this period, DBRS considers the servicer's work-out strategy as well as the remaining time to CMBS bond maturity. In these situations, DBRS typically considers the approaching CMBS bond maturity by adjusting the expected recoveries and/or by adjusting the direct sizing parameters. Just like a tail period that DBRS considers too short during the initial rating analysis, a fast approaching CMBS bond maturity may also limit the highest achievable rating for the transaction. Hence, CMBS bonds that remain outstanding during their tail period are typically expected to experience a downward pressure on their ratings depending on the time remaining until bond maturity.

Property Types Review

When analysing the dynamics of each loan, DBRS considers the property that secures the loan and the nuances associated with each property type. For defaulted loans in particular the analysis focuses on estimating the recoverable property value, also considering that a default is often an indication of adverse rental performance or adverse property and/or lending market conditions. Generally, because of the terms of their leases, some properties are viewed as more stable than others. For example, an office building with five- to ten-year leases is going to have more predictable revenue than a hotel that rents rooms daily. However, even though a hotel may have more volatile cash flow, it can adjust more rapidly to market rate increases and decreases. For this reason, DBRS highlights some of the credit concerns that it considers when analysing the loans within a CMBS transaction. Superior locations clearly help a property perform even in soft markets. In addition to the location of the asset and market conditions, there are several unique attributes to each property type that DBRS considers.

Office

- Above-market leases that expire during the term or shortly after loan maturity.
- Re-letting costs and re-letting reserves (if any).
- Master leasing.
- Location in relation to employment centers and transportation mediums.

Industrial

- Functionality and clear height, including specialised improvements, loading facilities and truck turnaround radius.
- Leases rolling within the term and relation of lease terms to the market.
- Office build-out and flex space.
- Location in relation to major modes of transportation and customer bases.

Retail

- Anchor tenants and in-line space performance, if franchise or public companies.
- Co-tenancy clauses.
- Competition in the market from major discounters.
- Location in relation to residential properties and high-traffic nodes.

Multifamily

- Concessions offered at the property.
- Affordability of housing in the immediate area and replacement costs of the property.
- Operating costs and capital expenditure to keep property quality at its current level.
- Employment diversity and trends near the property.
- Location in relation to civil services as well as employment centers and retail developments.

Other property types that may be included in CMBS transactions include hotels, student accommodations, health-care facilities and care homes. These are all considered individually as performance can fluctuate if the property has seasonality issues or high tenant turnover.

Direct Sizing Parameters and Recommendations

After the loan- and property analysis is complete, the transaction is analysed using the direct sizing hurdles shown in Appendix D. For each class, DBRS assesses whether the updated DBRS note-to-value, DSCR and credit enhancement levels are commensurate with the assigned rating. If not, it may decide whether a rating action is warranted, also considering other quantitative and qualitative aspects of the transaction. DBRS direct sizing hurdles are a substantial component of the European CMBS and Surveillance methodology and DBRS considers three or more notches deviation from the rating implied by the direct sizing hurdles a material deviation from the methodology. For example, DBRS might deem a lower rating than implied by the large loan sizing hurdles appropriate due to due the dispersion of loan-level cash flows expected to occur as loans season, or due to the lack of transaction seasoning and performance history.

Rating Agency Conditions

As mentioned earlier, the portfolio of loans securing the CMBS transactions have proven to be very dynamic. A rating agency condition (RAC) is often requested by the servicer or the issuer when there is a material change in a pool's assets or in the transaction's participants. The RAC is a review undertaken by the rating agency to assess that such change(s) seen in isolation do not affect the creditworthiness of the pool and outstanding ratings.

RAC requests typically reflect changes that occur at either the issuer or the loan levels, such as substitution of the special or master servicer; changes to material legal documents; additional indebtedness; loan assumptions; collateral substitution, re-lease or redevelopment; property management changes; and changes in franchise affiliations (flags) of hotel properties. DBRS believes that ratings initially assigned to CMBS reflect the possibility of changes in collateral that may be allowed for in the borrower's loan documents and of which DBRS receives notification.

DBRS generally contemplates waivers of RACs where transaction documents allow. DBRS does not waive RACs that affect any party involved in the operational risk of the transaction (i.e., replacement of special servicer, master servicer, etc.).

Upon receipt of a loan assumption or modification RAC request, DBRS considers whether the change weakens, strengthens or is neutral to the subject collateral, the property management, the borrower, the guarantee on the loan and/or the financial viability of the loan. In addition, all legal documents attached to the request and the case memo provided by the servicer or special servicer are expected to address the issues.

If it is not waived, an RAC request satisfactory to the rating agency results in the issuance of a no-downgrade letter to the master servicer, stating that the change does not, in and of itself, result in a downgrade, withdrawal or qualification to the ratings of the bonds.

Appendix A: Property Type Underwriting

Office

DBRS's analysis begins with a property's cash flow. Cash flow volatility can vary greatly based on a property's location, its condition, market, property type and respective expense ratio, as well as the sponsor's ability to attract tenants and carry the property in distressed times. Therefore, underwriting to a stabilised NCF is very property- and market-specific. The following are DBRS's general office cash flow component guidelines. DBRS realises every piece of real estate is unique and determines stabilised NCF in each case based on the specific property and its loan structure.

Revenue

Base Rent: Stabilised NCF is calculated based on the lower of current or a factor of market rent for tenants in place, open for business and paying rent. In the United Kingdom, upward-only rent review is common for certain types of property or tenants, particularly public sector lettings, but is not necessarily always available or applicable. DBRS distinguishes between income that exists and income that may never be. Upside potential from future events is generally not underwritten and only included on a case-by-case basis if the loan structure sufficiently mitigates execution risk.

As mentioned above, in addition to a signed lease or agreement for lease being in place, the three major factors DBRS typically looks for in order to recognise income are that the tenant is (1) in occupancy, (2) paying rent and (3) open for business. However, DBRS analyses properties and loans on an individual basis, and as a result other factors may also be relevant, including whether the term has commenced, whether the landlord has satisfied all obligations and has delivered the space to the tenant, whether the tenant is spending its own money to complete the space,[6] whether the tenant is an expansion tenant and whether the loan has been structured with a reserve, letter of credit or a holdback equal to the difference between in-place and stabilised rent.

DBRS also considers the sponsor's sophistication and the tenant's underlying credit quality. Having an experienced sponsor managing the property and/or having a strong credit tenant in place can have an impact on the quality and sustainability of property cash flows.

An office building's quality is determined by the property's age, condition, design (e.g., floor sizes and layout), access to transportation, market perception and ability or inability to offer certain amenities to its tenants, including sophisticated building systems (such as fibre-optic cables, satellite communications, other base building technological features or green/ sustainability criteria). The higher the property's quality, the easier it is to attract creditworthy tenants and achieve higher rents. When determining achievable rents and stabilised vacancy, DBRS distinguishes between asset quality and location. DBRS recognises that higher rents can be achieved at trophy properties and at strategic locations instrumental to the tenant's success.

Mark-to-Market Analysis: DBRS recognises the lower of current, in-place or a factor of market rents. Market rent depends upon current market conditions and types of space. In limited circumstances, DBRS recognises expected rental income increase after repositioning of the assets on a case-by-case basis. This might be the case if the assets are considered "prime", if the sponsor's business plan is credible and if the sponsor has shown commitment for executing the business plan, for example by funding a capex reserve or committing third-party funding related to the repositioning.

Rent Steps: DBRS recognises future contractual rent increases or bumps that are within market ranges, and that occur within four to six months of loan closing, as there is a high likelihood of such occurrence. DBRS underwrites to the average of the contractual rent bumps over the loan term for investment-grade tenants if the tenant's lease extends a minimum of three years beyond the loan term.

Rent-Free: Concessions such as a rent-free period are common and often provided in lieu of build-out expenses. If a lease includes a rent-free period that has not been burned off by securitisation, DBRS contemplates underwriting to the tenant's net effective rent depending on the amount of free rent and rent steps over the loan term. If, however, the tenant is investment grade and has a long-term lease (generally three years beyond loan term inclusive of break options), DBRS recognises the in-place rent.

Master Leased Income: Master leased space[7] is generally treated as vacant, as the space is often less desirable or the added leased square footage represents higher-than-market occupancy.

Investment-Grade Tenants: DBRS often treats investment-grade tenants more favourably than non-investment-grade tenants. For high-credit tenants with long-term leases (generally three years beyond the loan term inclusive of break options), DBRS averages any fixed contractual rent bumps through the loan term (rather than lease term) when arriving at the loan's term DSCR.

6. DBRS also considers whether landlord inducements are expected, but have not been made available.
7. Such as where the borrower leases space to itself.

Averaging rental bumps through the lease term that extends beyond the loan term is recognising revenue that would otherwise not be achieved during the loan term. Revenue is considered more stable based on the credit rating of tenants, but having an investment-grade tenant does not increase the likelihood of renewal or the likelihood that the tenant will pay above market rent at its lease expiration.

Dark Space: DBRS generally gives no credit to income generated by tenants that still pay on their leases but are no longer open for business because it is highly unlikely that the dark tenant will renew its lease. Therefore, any income from these tenants is not likely to last beyond lease expiration.

Other Income: This often includes parking revenue, storage income, antenna rents and miscellaneous tenant services. DBRS underwrites based on historical collections given a stabilised occupancy. One-time collections are excluded and typically so is income from non-real estate-related operations.

Reimbursements: DBRS examines actual reimbursement methods and underwritten expenses. Although it is common to utilise the historical percentage of recovered expenses, this method can prove erroneous when there is a near-term concentrated roll of legacy leases. To account for this volatility, DBRS may look to the valuation for guidance on the appropriate expense recovery. With fully repairing and insuring leases (FRI), a landlord is at risk when a large percentage of the space is rolling and substantial downtime exists.

Vacancy Loss: DBRS generally applies a vacancy loss to the higher of 1) actual, 2) submarket, and 3) 10.0%. Submarket data is property type-specific, and DBRS considers the submarket's current vacancy rate as well as historical figures, if available. For high-credit tenants with long-term leases (generally three years beyond the loan term), DBRS reduces the vacancy rate applied to the relevant space based on the tenants' rating. DBRS also considers the historical performance of the property when determining a vacancy loss. Furthermore, DBRS looks at the rollover profile of the property and may increase vacancy loss to the extent warranted.

Expenses

Office properties are moderate- to high-expense ratio assets. Many expense increases are borne by the tenants given the common nature of FRI leases, but then affordability becomes an issue. DBRS looks at historical expense trends for the collateral property and compares to similar-sized assets based on asset quality and location. DBRS may also underwrite additional expenses on vacant space to represent the expenses the sponsor will incur while the space is vacant. These are generally lower than the expenses for occupied space and the DBRS assumption is based on the valuer's estimate.

Taxes: As a percentage of total revenue, real estate tax burdens represent a significant expense. As such, significant increases in tax liabilities could cause cash flow to decline sizably. Taxes could significantly increase as a result of a property sale as the tax is reset to reflect the price (new value) of the asset. As such, for acquisitions, DBRS determines whether the underwritten tax burden reflects the property sale.

In instances where the property is benefiting from a tax abatement, DBRS considers the remaining term of the abatement, the difference between the abated tax and the actual tax, and considers whether any contractual future rent bumps would mitigate the burn-off of the abatement. Taxes may be underwritten to reflect the full tax liability.

Insurance: Insurance premiums are generally underwritten to the current bill. Because insurance expense represents a small percentage of revenue, an increase would have a minimal impact on cash flow and the potential erosion of coverage.

Management Fee: DBRS underwrites a management fee based on the higher of the contractual fee or 4%. When DBRS looks at properties with absentee borrowers, it recognises the need for professional management and the fees associated with that expertise.

Utilities: Energy costs may be escalating faster in some markets than others. DBRS focuses on increasing trends and, if in line with historical, underwrites to the current bill, otherwise, if necessary, inflates accordingly.

Operating Expenses: Historical trends and budgeted figures are considered when underwriting operating expenses.

Ground Rent: DBRS considers a ground lease's structure versus a loan's structure to determine whether a leasehold interest's value is maintained through the term and can be refinanced at loan maturity. If it is not offset by contractual rental increases in the leases of the property's tenants, DBRS averages contractual ground rental increases throughout the term of the loan.

Capital Expenditures: Reductions for capital expenditures are based on the higher of the engineer's recommendation, actual collected annual reserves or a DBRS minimum parameter based on the property quality and market. The capital expenditure cost can be reduced in instances where upfront reserves are collected to specifically address items in the technical report. In these instances, DBRS may provide a credit equal to the amount of the reserve averaged over the loan term. In cases where the borrower's business plan is to reposition the property so as to improve performance, DBRS generally underwrites to in-place revenue and capital expenditures sufficient to maintain DBRS's underwriting assumptions. As mentioned above, on a case-by-case basis DBRS gives value to sponsor business plans that include the repositioning of the property or properties (if the assets are deemed to be of prime quality and/or located in prime locations), and if the sponsor has shown credible commitment to the business plan, for example by funding a capital expenditure reserve. Absent such capital expenditure reserve or committed third party funding, DBRS might consider the repositioning costs in its NCF assumption, which is typically more conservative than underwriting the property "as-is".

Re-Letting Fees: A diversified rent roll isolates a landlord from the risk associated with a high concentration of space rolling within any given year. The costs and risk associated with re-signing and re-tenanting a building for comparable terms in a large rollover year can be significant. To calculate re-letting costs, DBRS generally assumes a 65% renewal probability, although this can be adjusted if DBRS has reason to believe that specific tenants have a higher or lower probability of remaining in occupancy at the property. DBRS acknowledges that tenants are generally provided a rent-free period or build-out expense based on lease terms and current market conditions. DBRS deducts the applicable cost as well as agent fees based upon the market environment.

DBRS reduces the amount of the re-letting costs in instances where upfront reserves are collected and for investment-grade tenants. If reserves for general leasing are collected, DBRS provides credit equal to the amount of the reserve averaged over the loan term. Reserves collected for specific tenants are only used to offset costs associated with that particular tenant. Typically, the credit provided is not greater than the total estimated re-letting cost. For high credit tenants with long-term leases (generally three years beyond the loan term), DBRS may exclude the tenant from the re-letting costs calculation. Finally, DBRS generally does not provide a credit for ongoing leasing reserves and does not provide credit for cash flow sweep structures unless the tenant is investment grade.

Cash Flow Volatility

In order to determine an office property's cash flow volatility, DBRS considers, among other factors, the (1) property's location, (2) its condition, (3) the borrower's experience and ability to access capital, (4) market conditions (i.e., rent, vacancy, absorption, new construction), (5) lease terms (gross versus FRI, rent-free, amortised building expenses), (6) tenant mix and (7) rollover schedule.

Dynamics of Supply and Demand

Office vacancy and absorption is generally based on employment. The strength and stability of an area as a desirable business location (including labour costs, tax environment and quality of life) is crucial to the market's office sector. Employment growth creates demand for office space. About one-third of service-sector jobs are candidates for office space, including sectors such as information, financial services and professional business services. Without job growth, demand for office space will not increase, and even with job growth, there may be a lag in increased demand due to the number of firms with more space leased than in actual use. In certain markets, the most troubling issue going forward is the space that will be coming on the market, either because of lease expiration or new construction.

Retail

DBRS's analysis begins with a property's cash flow. Cash flow volatility can vary greatly based on the property's location, its condition, market, property type and respective expense ratio, as well as the sponsor's ability to attract tenants and carry the property in distressed times. Therefore, underwriting to a stabilised NCF is very property- and market-specific. Following are DBRS's general retail cash flow component guidelines. As mentioned previously, DBRS recognises the uniqueness of each piece of real estate and takes a reasonable approach when determining stabilised NCF based on the property and the loan structure.

Revenue

Base Rent: Stabilised NCF is calculated based on the lower of current or a factor of market rent for tenants in place, open for business and paying rent. DBRS also distinguishes between income that exists and income that may never be. As with office properties, upside potential from future events (such as, in the U.K., upward-only rent reviews) is generally not underwritten and only included on a case-by-case basis if the loan structure sufficiently mitigates execution risk.

As mentioned above, in addition to a signed lease or agreement for lease, the three factors DBRS typically looks for in order to recognise income are that the tenant is (1) in occupancy, (2) paying rent and (3) open for business. However, DBRS analyses properties and loans on an individual basis, and as a result other factors may also be relevant, including whether the term has commenced, whether the landlord has satisfied all obligations and has delivered the space to the tenant, whether the tenant is spending its own money to complete the space,[8] whether the tenant is an expansion tenant and whether the loan has been structured with a reserve, letter of credit or a holdback equal to the difference between in-place and stabilised rent. As with office properties, a borrower's sophistication and a tenant's underlying credit quality remain relevant.

Mark-to-Market Analysis: DBRS recognises the lower of current, in-place or a factor of market rents. Market rent depends upon current market conditions and types of space. In determining market rents DBRS may look to a variety of sources, including recently signed leases at the property and in the local comparative market. To the extent sales figures are provided, DBRS considers sustainable effort ratio. As such, if the property exhibits a higher than typical effort ratio, DBRS may mark down rents or deduct additional vacancy to account for it. In limited circumstances, DBRS recognises expected rental income increase after repositioning of the assets; on a case-by-case basis this might be the case if the assets are considered "prime", if the sponsor's business plan is credible and if the sponsor has shown commitment for executing the business plan, for example by funding a capex reserve or committing third-party funding related to the repositioning.

Rent Steps: DBRS recognises future contractual rent bumps that are within market ranges and occur within four to six months of loan closing, as such occurrence is highly likely. DBRS underwrites to the average of the contractual rent bumps over the loan term for investment-grade tenants if the tenant's lease extends at a minimum three years beyond the loan term inclusive of lease break options.

Rent-Free: Concessions such as a rent-free period are common and often provided in lieu of build-out expenses. If a lease includes a rent-free period that has not burned off by securitisation, DBRS contemplates underwriting to the tenant's net effective rent depending on the amount of free rent and rent steps over the loan term. If, however, the tenant is investment grade and has a long-term lease (generally three years beyond loan term inclusive of break options), then DBRS recognises the in-place rent.

Master Leased Income: Master leased space is generally treated as vacant, as the space is often less desirable or the added leased square footage represents something higher than market occupancy.

Month-to-Month (MTM) Tenants: Tenants that lease space on a MTM basis are generally treated as vacant space unless historical property or market information exists that supports the sustainability of the income.

Investment-Grade Tenants: As mentioned above, DBRS often treats investment-grade tenants more favourably than non-investment-grade tenants. For high credit tenants with long-term leases (generally three years beyond the loan term inclusive of break options), DBRS averages any fixed contractual rent bumps through the loan term (rather than lease term) when arriving at the loan's term DSCR. Averaging rental bumps through the lease term that extends beyond the loan term is recognising revenue that would otherwise not be achieved during the loan term. Revenue is considered more stable based on the credit rating of tenants, but having an investment-grade tenant does not increase the likelihood of renewal or the likelihood that the tenant will pay above market rent at its lease expiration.

Dark Space: DBRS does generally not give credit to income generated by tenants that still pay on their leases but are no longer open for business, as it is highly unlikely that a dark tenant will renew its lease. Therefore, any income from these tenants is not likely to last beyond lease expiration. Also, certain tenants may have go-dark provisions that allow them to stop operating their businesses while still paying on their leases. DBRS views these provisions unfavourably, as a dark anchor tenant can have a significant negative effect on a shopping centre. For this reason, in the event that go-dark provisions exist, it is favourable for the borrower to have recapture rights that allow the borrower to re-tenant the space and cancel the dark tenant's lease in order to maintain customer draw to the shopping centre.

Other Income: Often includes parking revenue, storage income and miscellaneous tenant services. DBRS underwrites based on historical collections given a stabilised occupancy. One-time collections are excluded, and typically so is income from non-real estate-related operations.

Percentage Rent: While not a common term in leases, certain tenants are contractually obliged to pay a specified percentage of their sales over a breakpoint in addition to base rent. In these situations, DBRS looks to historical percentage rent figures and sales performance to determine how much can be included. Percentage rent should represent a small amount of total income, usually less than 10%.

Reimbursements: DBRS examines actual reimbursement methods and underwritten expenses. Although it is common to utilise the historical percentage of recovered expenses, this method can prove erroneous when there is a near-term concentrated roll of legacy leases. To account for this volatility, DBRS may look to the valuation for guidance on the appropriate expense recovery.

8. As with office properties, DBRS also considers whether landlord inducements are expected, but have not been made available.

With fully repairing and insuring leases, a landlord is at risk when a large percentage of the space is rolling and substantial downtime exists.

Vacancy Loss: DBRS generally applies a vacancy loss to the higher of 1) actual, 2) submarket, and 3) 10.0%. Submarket data is class-specific, and DBRS considers the submarket's current vacancy rate as well as historical figures if available. For high-credit tenants with long-term leases (generally three years beyond the loan term), DBRS reduces the vacancy rate applied to the relevant space based on the tenants' rating. DBRS also considers the historical performance of the property when determining a vacancy loss. Furthermore, DBRS looks at the rollover profile of the property and may increase vacancy loss to the extent warranted. DBRS may also differentiate between anchor9 and in-line space when deriving an appropriate under-written vacancy rate.

Co-Tenancy Provisions: Tenants can have co-tenancy provisions that allow them to terminate their leases without penalty if certain tenants or a certain percentage of rentable area goes dark and those tenants are not open for business at the property. DBRS determines if any of these provisions could cause future cash flow volatility by assessing the likelihood that they will leave the property.

Expenses

Retail properties are moderate- to high-expense ratio assets. Most expenses are born by the tenants given the common nature of FRI leases, but then affordability could become an issue. DBRS looks at historical expense trends and references comparables for expense per square feet comparisons based on asset quality and location. DBRS may also underwrite additional expenses on vacant space to represent the expenses the sponsor will incur while the space is vacant. These are generally lower than the expenses for occupied space and the DBRS assumption is based on the valuer's estimate.

Taxes: As a percentage of total revenue, real estate tax burdens represent a significant expense. As such, significant increases in tax liabilities could cause cash flow to decline sizably. Taxes could significantly increase as a result of a property sale, as the tax is reset to reflect the asset's price (new value). As such, for acquisitions, DBRS determines whether the underwritten tax burden reflects the property sale.

In instances where the property is benefiting from a tax abatement, DBRS considers the remaining term of the abatement, the difference between the abated tax and the actual tax, and considers whether any contractual future rent bumps would mitigate the burn-off of the abatement. Taxes may be under-written to reflect the full tax liability.

Insurance: Insurance premiums are generally underwritten to the current bill. Because the insurance expense represents a small percentage of revenue, an increase would have little impact on cash flow and the potential erosion of coverage.

Management Fee: DBRS underwrites a management fee based on the higher of contractual obligation or 4%. DBRS looks at properties with absentee borrowers and recognises the need for professional management and the fees associated with that expertise.

Utilities: Energy costs may be escalating faster in some markets than others. DBRS focuses on increasing trends, and if in line with historical trends, underwrites to the current bill. Otherwise, if necessary, it inflates accordingly.

Operating Expenses: Historical trends and budgeted figures are considered when underwriting operating expenses.

Ground Rent: DBRS considers a ground lease's structure versus a loan's structure to determine whether the value of the leasehold interest is maintained through the term and can be refinanced at balloon. DBRS averages contractual ground rental increases throughout the term of the loan, if it is not offset by contractual rental increases in the leases of the property's tenants.

Capital Expenditures: Reductions for capital expenditures are based on the higher of the engineer's recommendation, actual collected annual reserves or DBRS's minimum parameter. The capital expenditure cost can be reduced in instances where upfront reserves are collected to specifically address items in the technical report. In these instances, DBRS provides a credit equal to the amount of the reserve averaged over the loan term. In cases where the borrower's business plan is to reposition the property so as to improve performance, DBRS generally underwrites to in-place revenue and capital expenditures sufficient to maintain DBRS underwriting assumptions. As mentioned above, on a case-by-case basis DBRS gives value to sponsor business plans that include the repositioning of the property or properties (if the assets are deemed to be of prime quality and/or located in prime locations) and if the sponsor has shown credible commitment to the business plan, for example by funding a capital expenditure reserve. Absent such capital expenditure reserve or committed third-party funding, DBRS might consider the repositioning costs in its NCF assumption, which is typically more conservative than underwriting the property "as-is".

9. An anchor tenant serves as the primary draw of customers to the retail location, and, in contrast with other, in-line tenants, typically occupies the largest space.

Re-Letting Fees: A diversified rent roll isolates a landlord from the risk associated with a high concentration of space rolling within any given year. The costs and risk associated with re-signing and re-tenanting a building for comparable terms in a large rollover year can be significant. To calculate re-letting costs, DBRS generally assumes a 65% renewal probability, although this can be adjusted if DBRS has reason to believe that specific tenants have a higher or lower probability of remaining in occupancy at the property. DBRS acknowledges that tenants are generally provided a rent free period or build-out expense based on lease terms and current market conditions. DBRS deducts the applicable cost as well as agent fees based upon the market environment.

DBRS reduces the amount of the re-letting costs in instances where upfront reserves are collected and for investment grade tenants. If reserves for general leasing are collected, DBRS provides a credit equal to the amount of the reserve averaged over the loan term. Reserves collected for specific tenants are only used to offset costs associated with that particular tenant. Typically, the credit provided is not greater than total estimated re-letting cost. For high credit tenants with long-term leases (generally three years beyond the loan term), DBRS may exclude the tenant from the re-letting costs calculation. Finally, DBRS generally does not provide a credit for ongoing leasing reserves and does not provide credit for cash flow sweep structures unless the tenant is investment grade.

Dynamics of Supply and Demand

Major factors that can influence shopping centres' performance are demographics, traffic count and population trends. Although, in general, a high median income in the area closely surrounding a shopping centre indicates a high level of buying power, a lower median income does not necessarily preclude success. For instance, a shopping centre that focuses on value and discount consumer goods can do quite well in an area with low median income, whereas a higher-end centre might not perform as well. Traffic count is a good indication of a desirable location. While local populations generally grow slowly, some experience more rapid growth and some experience a contraction. It is very difficult to forecast higher- than-average population growth and assume that said growth will greatly benefit a certain shopping centre.

However, a declining population is a definite red flag, and DBRS analyses the area to determine why an area's population is declining. For example, population often declines in working-class neighbourhoods that have experienced heavy job losses. Ways to mitigate the risk of further population decreases include having anchors on long-term leases and having a loan that amortises.

Anchored Retail: Anchored retail can be a regional shopping centre, an open-air lifestyle centre, a grocery-anchored centre or a power centre. There are typically two or more true draws or anchors at the centre. Most importantly, anchored retail centres are often located on major surface streets with access to the property controlled by traffic signals (signalised access) in densely populated, infill locations and managed by large national operators that have established relationships with major tenants. Anchor tenants generally occupy rather large, generic boxes. Because strong anchor tenants generate traffic flow and are highly coveted by developers, their rental rates are typically significantly less than those of an in-line shop space. As a result, loan amounts, on a per square foot basis, are generally less when the anchor is included in the collateral. Because of the locations, generally utilitarian design and ample parking, even troubled anchored retail centres often have a greater turnaround story and more interest from outside investors. DBRS assesses the relative health of each anchor by reviewing floor plate size, market trends and barriers to entry to determine the dark anchor risk for each centre. The centre should additionally have ample parking, signalised access, good visibility and strong historical sales.

Shadow-Anchored Retail: Shadow-anchored retail centres benefit from the draw dynamics of anchor tenants in nearby locations. However, they have limited ability to accurately assess the anchor's relative health and have few if any remedies should an anchor cease operation. A vacant anchor space owner's economic objectives are likely to differ significantly from those of surrounding tenants. For instance, the shop tenants of a grocery-anchored centre would desire a replacement grocery store if the original tenant failed. But if that grocer had moved across the street to a larger store that better suited its needs, it would be in the grocery store's best interest to keep the space vacant or possibly lease it to a non-competitive tenant. If the vacant grocery store owner is an unrelated investor, it will find it more valuable to maximise its rental rate than traffic flow. In such a scenario, the owner may find a pet supplies store, hardware store or health club to be preferable to another grocery store.

Unanchored Retail: Unanchored retail centres lack the draw dynamics of an anchor tenant. They frequently offset this, however, with convenient locations in going-home traffic patterns with high visibility and easy access. Unanchored retail centres often consist of smaller strip centres that do not have the draw of national retailers. The tenant mix is typically smaller users and may be a mix of traditional retailers and service providers. When evaluating unanchored retail, DBRS looks at traffic patterns, access, visibility, leverage and amortisation. In addition, DBRS considers the tenancy mix and use of the centre, the parking availability and the nearby competition. If the centre has the closest dry cleaner, nail shop or convenience store to a large residential neighbourhood, it will likely increase the centre's success. The local borrower with many retail centres may also have access to tenants that an absentee borrower may not.

Multifamily

DBRS's analysis begins with a property's cash flow. Cash flow volatility can vary greatly based on the property's location, condition, market, property type and respective expense ratio, as well as the sponsor's ability to attract tenants and carry the property in distressed times. Therefore, underwriting to a stabilised NCF is very property- and market-specific. The following are DBRS's general multifamily cash flow component guidelines. DBRS realises that every piece of real estate is unique and determines stabilised NCF in each case based on the specific property and the loan structure.

Multifamily properties' cash flow volatility caused from the relative short-term leases to individual tenants is mitigated by the diversity of the rent roll. The volatility in multifamily product varies depending on the market. Economic factors that have a positive impact on multifamily performance include job and population growth. Declines in performance could be caused by a poor property manager, new supply, affordable alternative housing (home ownership) or job loss. Typically, properties located in markets relying heavily on one industry are at risk if the respective sector suffers. An equation for a probable well-performing multifamily property is therefore one located in a high demographic-growth market with a limited supply of land and high cost of home ownership.

Revenue

Base Rent: Residential income is based on the most recent annualised rent roll. Vacant units are grossed up at the market rental rate. An additional vacancy allowance and credit loss factor may be necessary subject to market conditions. DBRS generally underwrites to the greater of actual vacancy, market vacancy, or an applicable DBRS minimum based on the property quality and market. The resulting DBRS stabilised net rental level is compared to and generally constrained to the historical collections. DBRS looks for three years of historical operating statements to determine if any increasing trends are sustainable. For properties that have recently stabilised and do not have a full year of stabilised operating history, DBRS may look to a shorter period of historical performance by analysing monthly trends on a case-by-case basis and furthermore, may haircut recent collections to account for unknown performance and potential seasonality.

Concessions: It is important to recognise what, if any, concessions are being offered at the subject and in the market. Considering current concessions, DBRS underwrites to a stabilised net rental level. For example, if a one-month free move-in special is commonplace in the market, DBRS underwrites to the effectively reduced annual rent. Other move-in incentives are also considered when determining revenue stability.

Other Income: Often includes laundry, utility reimbursement, parking, cable and miscellaneous other income sources. DBRS underwrites based on historical collections given a stabilised occupancy. DBRS carefully assesses the situation when this income exceeds 10% of net rent.

Commercial Income: Commercial space within a multifamily development is generally only present in urban markets. DBRS underwrites income derived from commercial tenants based on the leases in-place and applies a vacancy rate equal to the greater of actual vacancy, market vacancy, or an applicable DBRS minimum vacancy threshold based on property quality and market. DBRS may not attribute any income if the commercial tenant is affiliated with the sponsor.

Vacancy Loss: DBRS generally applies a vacancy loss to the higher of 1) actual, 2) submarket, and 3) 5.0%. Submarket data is class- and vintage-specific, and DBRS considers the submarket's current vacancy rate as well as historical figures if available. As mentioned previously, the DBRS stabilised net rental level is compared to and generally constrained to the historical collections. As such, a vacancy plug may be underwritten to get to the historical level. If there is new supply coming on-line and competing directly with the subject property, occupancy or rents could suffer. The new product could offer a lease-up special that will attract tenants from the subject property. DBRS recognises the additional stress on the properties' net cash flow and takes an additional vacancy factor. If the property has a high concentration of month-to-month tenants and tenants with short-term leases (less than six months), DBRS may also recognise the additional stress on the properties' net cash flow and take an additional vacancy factor.

Expenses

Generally, multifamily assets are high expense ratio assets with short-term leases to private individuals. DBRS looks at historical expense trends and checks comparable transactions for comparable expense ratios based on asset class, size and location.

The greater the common area, the higher the borrower's cost to maintain it — thereby increasing the property's expense ratio. In theory, luxury flats should have the highest expense ratio; however, they should also have the highest asking rents for the expansive common areas and amenities they provide. It should offset the increase in operating expenses.

Taxes: As a percentage of total revenue, real estate tax burdens represent the greatest expense. As such, significant increases in tax liabilities could cause cash flow to decline sizably. Taxes could significantly increase as a result of a property sale, as the tax is reset to reflect the asset's price (new value). For acquisitions, DBRS determines whether the underwritten tax burden reflects the property sale. In other instances, the current real estate tax bill is underwritten.

Insurance: Insurance premiums are generally underwritten to the current bill. As the insurance expense represents a small percentage of revenue, an increase would have little impact on cash flow and the potential erosion of DSCR.

Management Fee: DBRS underwrites a management fee based on the higher of contractual obligation or 4%. A higher management fee may be justified for a small complex with less than 100 units. A lower management fee may be justified for a large complex with more than 500 units, or in high rent markets.

Utilities: Energy costs may be escalating faster in some markets than others. DBRS focuses on increasing trends and if necessary inflates accordingly or underwrites to the current bill inflated by 3%.

Operating Expenses: Historical trends, sector-specific data and budgeted figures are considered when underwriting operating expenses. DBRS generally underwrites operating expenses based on the greater of the most recent annual expense inflated by 3% and the budgeted figure. For recently developed properties with a limited operating history, DBRS may inflate expenses by up to 6%.

Ground Rent Expense: If the property is secured by the leasehold interest, DBRS underwrites the average ground rent expense payable over the loan term.

Capital Expenditures: Reductions for capital expenditures are based on the higher of the engineer's recommendation, actual collected annual reserves or an applicable DBRS minimum parameter given the property quality and market.

Cash Flow Volatility
To determine the cash flow volatility of a multifamily property, DBRS considers, among other factors:

1. The property's condition, considering its age, appearance and construction quality.
2. Location near employers and service providers.
3. Location near major transportation nodes or public transportation options as well as proximity to supporting services such as retailers and schools.
4. Local economy and local employers, including military bases and universities, relocating, closing or going out of business.
5. Strength and reputation of management to rent units and provide adequate maintenance.
6. Property amenities.
7. Mortgage interest rates and affordability of single-family homes, either of which may encourage tenants to purchase rather than lease housing.
8. Reliance, in the case of student housing facilities, on the financial well-being of the university to which it relates, as well as physical layout of the housing, which may not be readily convertible to traditional multifamily use.
9. Competition and prospective new supply or reduction in supply.
10. Dependence upon governmental programmes that provide rent subsidies to tenants, pursuant to tenant voucher programmes and which vouchers may be used at other properties and influence tenant mobility.

Dynamics of Supply and Demand
Multifamily performance is based on a number of factors, most notably an affordable housing market and the local employment base. A low interest rate environment and a large housing supply, resulting in lower prices, would negatively affect the performance of a multifamily asset. However, the reverse holds true as well: in a market with a small supply of available homes, which drives up prices, multifamily performance would be markedly better. The strength of the local employment market and the number of major employers is crucial to multifamily stability as well. Markets with a diverse employment base are often able to weather downturns in the economy while markets that rely on one major employer or industry can face volatile periods.

Industrial
DBRS's rating analysis begins with a property's cash flow. Cash flow volatility can vary greatly, based on the property's location, functionality, condition, market, property type and respective expense ratio, as well as the sponsor's ability to attract tenants and carry the property in distressed times. Therefore, underwriting to a stabilised NCF is very property- and market-specific. Below are DBRS's general industrial cash flow component guidelines. DBRS realises the uniqueness of every piece of real estate and determines stabilised NCF based on the specific property and the loan structure.

As with offices, retail and multifamily, industrial sites and portfolios must be properly valued with criteria that are understood in the context of the local rules and requirements so that similarities and differences between jurisdictions can be understood and correctly analysed.

Revenue

Base Rent: Stabilised NCF is calculated based on the lower of current or a factor of market rent for tenants in place, open for business and paying rent. DBRS distinguishes between income that exists and income that may never be. In the United Kingdom, upward-only rent review is the standard position. Upside potential from future events is generally not underwritten and only included on a case-by-case basis if the loan structure sufficiently mitigates execution risk.

As mentioned previously, in addition to a signed lease or agreement for lease being in place, the three factors DBRS typically looks for in order to recognise income is that the tenant is (1) in occupancy, (2) paying rent and (3) open for business. Other factors may also be relevant, including whether the term has commenced; whether the landlord has satisfied all obligations and has delivered the space to the tenant; whether the tenant is spending its own money to complete the space; whether the tenant is an expansion tenant; and whether the loan has been structured with a reserve, letter of credit or a holdback equal to the difference between in-place and stabilised rents. DBRS also considers the borrower's sophistication and the tenant's underlying credit quality.

Mezzanine Space: DBRS looks to the functionality of the mezzanine space and the ability to command rent for it. Generally, second-story and mezzanine space in industrial buildings is difficult to lease up and may be treated as vacant or excluded from a property's rentable area. However, on a case-by-case basis, if the space is functional office space and there is a market for it, DBRS underwrites to the lower of actual or a factor of market rent.

Office Build-Out: For a typical warehouse/distribution facility, the percentage of interior space completed as office typically ranges from 5% to 15% of total space and a higher rent is not achieved for this common amenity. For larger buildings, the ratio of office space is generally smaller. As the ratio of office space grows, the building is often deemed inefficient and actually may negatively impact the property's value.

For research and development (R&D)/flex facilities, a larger portion of office space is preferred and often this can range from 20% to 100% of total space. Properties with a higher percentage of office improvements can demand higher rents in a peak market environment, as office rents push some office users out to take advantage of a lower rent in flex space. However, during weak market conditions, the office user may vacate the flex space for higher-quality typical office space for a comparable rental rate, leaving the flex space functionally obsolescent to most industrial users. This may result in high vacancies and stressed cash flows.

Mark-to-Market Analysis: DBRS recognises the lower of current, in-place or a factor of market rents. Market rent depends upon current market conditions and types of space. In limited circumstances, DBRS recognises expected rental income increase after repositioning of the assets; on a case-by-case basis this might be the case if the assets are considered "prime", if the sponsor's business plan is credible and if the sponsor has shown commitment for executing the business plan, for example by funding a capex reserve or committing third-party funding related to the repositioning.

Rent Steps: DBRS generally recognises future contractual rent increases or bumps that are within market ranges and occur within four to six months of loan closing, as there is a high likelihood of occurrence. DBRS under-writes to the average of the contractual rent bumps over the loan term for investment-grade tenants if the tenant's lease extends a minimum of three years beyond the loan term. If a lease break occurs prior to the loan maturity date, DBRS averages contractual rents leading up to the lease break.

Rent-Free: Concessions in the form of a rent-free period are common and often provided in lieu of build-out expenses. If a lease includes a free-rent period that has not burned off by securitisation, DBRS contemplates underwriting to the tenant's net effective rent depending on the amount of free rent and rent steps over the loan term.

Specialised Improvements: Rents for built-to-suit tenants in recently constructed buildings are based on the cost of construction. If the space has specialised improvements and the loan is structured such that it amortises over the lease term, DBRS recognises this first generation, built-to-suit rent. For non-amortising loans, DBRS reduces the rent to reflect the marketability of this specialised use.

Master Leased Income: Master leased space is generally treated as vacant, as the space is often less desirable or the added leased square footage represents something higher than market occupancy.

Investment-Grade Tenants: DBRS often treats investment-grade tenants more favourably than non-investment-grade tenants. For high credit tenants with long-term leases (generally three years beyond the loan term inclusive of break options), DBRS averages any fixed contractual rent bumps through the loan term (rather than lease term) when arriving at the loan's term DSCR. Averaging rental bumps through the lease term that extends beyond the loan term is recognising revenue that would otherwise not be achieved during the loan term. Revenue is considered more stable based on the credit rating of tenants, but having an investment-grade tenant does not increase the likelihood of renewal or the likelihood that the tenant will pay above market rent at its lease expiration.

Other Income: This often includes parking revenue, storage income, antenna rents and miscellaneous tenant services. DBRS underwrites based on historical collections given a stabilised occupancy. One-time collections are excluded, and typically so is income from non-real estate-related operations.

Reimbursements: DBRS examines actual reimbursement methods and underwritten expenses. Although it is common to utilise the historical percentage of recovered expenses, this method can prove erroneous when there is a near-term concentrated roll of legacy leases. To account for this volatility, DBRS may look to the valuation for guidance on the appropriate expense recovery. With fully repairing and insuring leases, a landlord is at risk when a large percentage of the space is rolling and substantial downtime exists.

Vacancy Loss: DBRS applies a vacancy loss to the higher of 1) actual, 2) submarket, and 3) 5.0%. Submarket data is class-specific, and DBRS considers the submarket's current vacancy rate as well as historical figures if available. For high-credit tenants with long-term leases (generally three years beyond the loan term), DBRS reduces the vacancy rate applied to the relevant space based on the tenants' rating. DBRS also considers the historical performance of the property when determining a vacancy loss. Furthermore, DBRS looks at the rollover profile of the property and may increase vacancy loss to the extent warranted.

Expenses

Industrial properties are low- to moderate-expense ratio assets. Many expense increases are borne by the tenants given the common nature of FRI leases, but then affordability becomes an issue for the tenant. DBRS looks at historical expense trends and references comparisons for expense per square feet assessments based on asset class and location. DBRS may also underwrite additional expenses on vacant space to represent the expenses the sponsor will incur while the space is vacant. These are generally lower than the expenses for occupied space and the DBRS assumption is based on the valuer's estimate.

Taxes: As a percentage of total revenue, real estate tax burdens may represent a significant expense. As such, significant increases in tax liabilities could cause an increase in the tenant's occupancy costs. Taxes could significantly increase as a result of a property sale, as the tax is reset to reflect the asset's price (new value). As such, for acquisitions, DBRS determines whether the underwritten tax burden reflects the property sale.

Insurance: Insurance premiums are generally underwritten to the current bill. Because insurance expense represents a small percentage of revenue, an increase would have little impact on cash flow and the potential erosion of coverage.

Management Fee: For warehouse/distribution facilities, DBRS underwrites management fee based on the higher of contractual or 3.5%. For R&D/flex facilities, DBRS underwrites management fees based on the higher of contractual or 4%. DBRS looks at properties with absentee borrowers and recognises the need for professional management and the fees associated with that expertise.

Utilities: Energy costs may be escalating faster in some markets than others. DBRS focuses on increasing trends and, if in line with historical trends, underwrites to the current bill; otherwise, if necessary, it inflates accordingly.

Operating Expenses: Historical trends and budgeted figures are considered when underwriting operating expenses.

Ground Rent: DBRS considers the ground lease's structure versus the loan's structure to determine whether the leasehold interest's value is maintained through the term and can be refinanced at loan maturity. DBRS averages contractual ground rental increases throughout the term of the loan if it is not offset by contractual rental increases in the leases of the property's tenants.

Capital Expenditures: Reductions for capital expenditures are based on the higher of the engineer's recommendation, actual collected annual reserves or a DBRS minimum parameter based on property quality and market. The capital expenditure cost can be reduced in instances where upfront reserves are collected to specifically address items in the technical report. In these instances, DBRS provides a credit equal to the amount of the reserve averaged over the loan term. In cases where the borrower's business plan is to reposition the property so as to improve performance, DBRS generally underwrites to in-place revenue and capital expenditures sufficient to maintain the DBRS underwriting assumptions. As mentioned above, on a case-by-case basis DBRS gives value to sponsor business plans that include the repositioning of the property or properties (if the assets are deemed to be of prime quality and/or located in prime locations) and if the sponsor has shown credible commitment to the business plan, for example by funding a capital expenditure reserve. Absent such capital expenditure reserve or committed third-party funding, DBRS might consider the repositioning costs in its NCF assumption, which is typically more conservative than underwriting the property "as-is".

Re-Letting Fees: A diversified rent roll isolates a landlord from the risk associated with a high concentration of space rolling within any given year. The costs and risk associated with re-signing and re-tenanting a building for comparable terms in a large rollover year can be significant. To calculate re-letting costs, DBRS generally assumes a 65% renewal probability, although this can be adjusted if DBRS has reason to believe that specific tenants have a higher or lower probability of remaining in occupancy at the property. DBRS acknowledges that tenants are generally provided a rent-free period or build-out expense based on lease terms and current market conditions. DBRS deducts the applicable cost as well as agent fees based upon the market environment.

DBRS reduces the amount of the re-letting costs in instances where upfront reserves are collected and for investment grade tenants. If reserves for general leasing are collected, DBRS provides a credit equal to the amount of the reserve averaged over the loan term. Reserves collected for specific tenants are used to offset costs associated with that particular tenant. Typically, the credit provided is not greater than total estimated re-letting cost. For high-credit tenants with long-term leases (generally three years beyond the loan term), DBRS may exclude the tenant from the re-letting costs calculation. Finally, DBRS generally does not provide a credit for ongoing leasing reserves and does not provide credit for cash flow sweep structures unless the tenant is investment grade.

Dynamics of Supply and Demand

Functionality is the key to industrial properties. Restrictions imposed by building and site characteristics can adversely affect the value and cash flow of industrial properties. There are a number of important characteristics and qualities to consider that ultimately keep a building desirable to tenants and valuable to property owners:

1. Ceiling clear heights are an important design feature, especially in warehouse/distribution facilities where cubic storage capacity is a major factor. In general, these properties have ceiling heights higher than 18 feet and lower than 35 feet. In recent years, the trend has been to increase the clear ceiling heights in new industrial buildings, especially in major distribution markets. For R&D/flex facilities, it is important to maintain clear heights that range from 16 to 18 feet for design flexibility to allow for alternative uses, as well as expansion.
2. Loading facilities are also important, as they provide easy access for trucks transporting to and from the site. Larger industrial buildings typically will contain a mix of drive-in and truck dock loading facilities with a higher number of docks than drive-in doors. Warehouse/distribution facilities typically have a higher ratio of loading docks than manufacturing facilities. For new facilities, the average number of loading docks is typically between ten and 12 square feet per 10,000 sf of total space. As for R&D/flex, the number of docks and loading facilities will determine how flexible the property is and ultimately can add or detract from the value.
3. Just as important is the truck drive and turning areas for large trucks. In industrial parks, adequate truck turning areas must be provided as part of the property, so that trucks do not use public streets for turning. Most delivery areas should also be concrete paved to accommodate the heavy truck loads.
4. Site access and location, as with all real estate, is important. However, visibility is not as crucial as access for large trucks and tractor trailers hauling heavy loads. In addition to easy access, the ability for trucks to get to the site from major road arteries and expressways and the proximity to distribution and manufacturing centres is important. It is preferable for buildings to be in industrial parks and away from residential areas, but close to motorways, major airports and transportation hubs.
5. Major seaports can be a great demand generator for industrial space.

Hotels

Cash flow volatility in the hospitality sector is considered high, given that (1) hotels are an extremely management-intensive operating business, (2) hotels operate on what can be viewed as leases that reset daily and (3) hotels typically have high operating leverage.

Hotels are typically classified as full service, limited service or extended stay. A full-service hotel is defined as a hotel with meeting space and an on-site restaurant. Generally full-service hotels offer additional amenities including, but not limited to, a bar, concierge, fitness centre and room service. Limited-service hotels offer a more limited scope of amenities and do not have meeting space or an on-site restaurant. Extended-stay hotels are limited-service in their amenity offerings, but are geared towards travellers that require an extended hotel stay. As such, the rooms are generally larger and have fully equipped kitchens.

Given the different offering to guests, expense ratios can vary greatly. Full-service hotels have the highest expense ratios because of the high costs associated with the various amenities they provide. Extended-stay properties have the lowest expenses, generally resulting lower break-even occupancy thresholds than other hotels. This is a result of the longer average length of stay, lower guest turnover and lower operating expenses.

The general guidelines for determining the DBRS stabilised NCF for hotel properties are outlined below.

Revenue

Base Cash Flow: When analysing hotels it is paramount to compare a hotel's average daily rates (ADR) and occupancy levels with both the hotel's historical performance (DBRS would ideally analyse five years of a hotel's operating performance) and the historical performance of the competitive set or market, if possible. By multiplying occupancy and ADR, the revenue per available room (RevPAR) is determined. In its underwriting, DBRS assesses the sustainable RevPAR.

Performance Trends: By looking at several years of occupancy and ADR performance data, DBRS can determine where the hotel is in the operating cycle by comparing the current ADR and occupancy with the minimum/maximum achieved ADR and occupancy historically. If the hotel's occupancy is near peak levels, DBRS may cap the occupancy level at a lower and more sustainable level, since occupancy is often first to decline during a recession. DBRS's analysis of past performance also considers whether it was driven by one-off events, for example sports or other events, and how likely it is that other events occur in the near- to medium term.

Generally, the hotel's location and client mix (private travelers versus corporate customers, long-term airline contracts, etc.) determines how volatile performance is expected to be during economic cycles. By considering the historical performance of the competitive set or market (if available), DBRS can assess the hotel's position in the respective submarket and determine whether the hotel's operating performance in terms of occupancy and ADR is more or less volatile than that of its competitors.

Other Income: In determining stabilised NCF, DBRS also analyses historical performance of other sourceS of income such as: food and beverage (F&B), spa, gift shop, parking etc. In particular F&B revenue can vary greatly among hotels, from no revenue to more than 40% of total revenue. By definition, limited-service hotels do not offer guests traditional restaurants nor substantial meeting space with catering service; thus, F&B revenue is minimal. By contrast, full-service hotels, such as large convention or resort hotels, may feature multiple restaurants and an abundance of meeting space that generates substantial F&B revenue in absolute terms and as a percentage of total revenue. To the extent that F&B revenue represents a very high percentage of total revenue that is driven by an unsustainable rise in demand (i.e., the revenue source is one or more trendy restaurants/bars/nightclubs), DBRS may decide to cap F&B revenue at levels considered sustainable in the long term.

Operator: Hotel operator: Hotels owned or under a management and/or franchise contract with a well-known and sophisticated operator benefit from brand recognition, loyalty programmes and online booking systems. While independent hotels are more common in Europe than in the United States, these hotels tend to have more difficulties attracting international guests, but they are often more competitive in terms of rate. Given the lower rates common amongst independent hotels, the resulting revenue is also generally lower than for chain hotels. The expenses associated with independent hotels can vary; at times operating expenses are higher as the operators do not benefit from economies of scale across a larger hotel portfolio, but the management, marketing and franchise fees are typically lower, as they are not obligated to pay a set fee to a third party.

Chains are typically better equipped to manage online booking and reviews in a more efficient manner which is becoming increasingly important. In addition, corporate customers often focus on hotel chains, which makes those hotels catering to corporate businesses somewhat less vulnerable to the increasing trend of peer-to-peer lettings.

Traveller Reviews: Bespoke reviews from social media platforms and hotel review websites are often a good indication of traveler satisfaction, hotel quality and deferred maintenance. Hence, when analysing hotel-backed loans DBRS considers such reviews in addition to past and expected performance data.

Supply: New hotel developments, additional supply from other means (for example Airbnb), or the repositioning of competitive hotels can negatively affect a hotel's operations by increasing the supply of rooms available and potentially lowering the rates in the market. It is important to analyse the franchise reputation, hotel quality and location of new hotels to determine if they may negatively affect performance of other hotels in the area. Generally, the development of hotels in different price points and/or different quality will not have a significant impact on a hotel's revenue. Additionally, when analysing prime hotels, there is often a lack of land and zoning regulations for new hotel developments and thus new competitive properties are limited to hotel conversions.

Expenses

As mentioned above, considering the different offering to guests, expense ratios of different hotels can vary greatly. Full-service hotels have the highest expense ratios due to the high costs associated with the various amenities they provide. Extended-stay properties have the lowest expenses, resulting in generally lower break-even occupancy thresholds than other hotels.

Fixed Expenses: Insurance, real estate taxes, and other operating expenses (i.e. expenses for marketing, repair and maintenance, administrative and utilities) are normally not affected by changes in occupancy or sales volume. DBRS will generally underwrite such fixed costs at a level equivalent to its most recent T-12 ratio to total revenue.

Capital Expenditures: Since the hotel collateral includes the furniture, fixtures and equipment (FF&E) needed to operate the asset, it is prudent to set aside an annual reserve to maintain and replace this as needed. The generally accepted FF&E reserve for hotel lending originations is 4% of rooms' revenue, which in DBRS's experience is often below the actual capital expenditure necessary to maintain hotels. The capital expenditure investment is used for hard good replacement (every 15 years), soft good replacement (every three to seven years) and common area maintenance or upgrades. Most franchised hotels, in addition to their regular spending, are subject to property improvement plans (PIP) stipulated in their franchise agreement. This requires a periodical capital investment by the sponsor (i.e., the landlord) to maintain the franchise agreement. Additionally, PIPs regulate the standard across the brand and ensure that all hotels within a certain flag have consistent quality.

According to a capital expenditure study completed by the International Society of Hospitality Consultants and the Hotel Asset Managers Association, capital expenditures have a wide variance depending on the hotel age. The study estimates that full-service hotels generally require capital expenditures equating to 0.5% of rooms revenue in years one to five of operations, 4.6% of rooms revenue investment in years six to ten and further increasing to a peak of 10.0% of revenue after 26 years of operations. This investment trend is generally consistent across full-service, select-service and extended-stay hotels, as the revenue associated with each hotel is commensurate with the hotel guest's expectations of quality.

When analysing a hotel, DBRS looks at the FF&E investment on a per key basis given the high variability in the percentage of revenue. DBRS will generally underwrite an annual minimum of EUR 2,500 (or equivalent in other currencies) per key for full-service hotels and EUR 2,000 (or equivalent in other currencies) per key for limited-service hotels.

Management, Marketing and Franchise Fees: There are generally three ways in which a hotel may be owned and operated:

- Owned by a real estate investor and operated via a separate third-party management and/or franchise agreement.
- Owned by a hotel operator that operates the hotel under their brand/franchise.
- Owned by a private investor and operated without a franchise agreement as an independent hotel.

While it has historically been more common in Europe for large hotel operators to both own and operate the hotel, hotel operators have been increasingly divesting their portfolios to third-party investors and retaining the brand and associated franchise fee through a franchise agreement. This in turn increases the aggregate management, marketing and franchise fee payable by the hotel owning company or the sponsor (i.e., by the borrower or the parent company of the borrower).

Hotels owned by a hotel operator that operates the hotel under their brand and independent hotels have the lowest combined management, marketing and franchise fee as these fees may not be payable. However, DBRS typically underwrites an expense plug to a sustainable combined management, marketing and franchise fee expense level as these expenses are becoming increasingly common in Europe and may be incurred if the hotel was sold in a work-out scenario. Typically, management, marketing and franchise fees total 8% to 14% (rarely above 17%) of rooms' revenue.

Ownership Structure: Hotels are often owned by property-owning special purpose vehicles (SPVs), which are the borrower under the loan. SPVs simplify the ownership structure of a hotel as the only liabilities of the SPV are those of owning and running the hotel. As mentioned above, such structures could increase the cost level and hence the operating leverage. This is offset by potentially lower complexity in a sales scenario in which the focus of the analysis is on the contractual agreements between the borrower and the hotel operator.

If the hotel is instead owned by an operating company, which typically has employees and operates as a trading company (i.e., not an SPV), then the borrower has greater operating flexibility. In an enforcement scenario, the hotel's operations could add some value, in addition to the property value. However, the sales process could become more complex and there would be additional liabilities that would need to be accounted for when analysing the hotel. Potential expenses associated with employees (redundancy costs, pension liabilities, etc.) and other liabilities could reduce the loan security's value even if the hotel is profitable on its own.

Appendix B: DBRS Underwriting and Sizing Guidelines

Net Cash Flow Adjustments [1]

					Combined Tenant Incentives (fitting costs and rent free period) as a Percentage of Gross Rent [2]		Annualised Agent Fees as Percentage of Annual Gross Rent	
Property Type	**Revenue**	**Vacancy**	**Management Fee**	**Capital Expenditures**	**New**	**Renew**	**New**	**Renew**
Multifamily	T-12	5%	4.0%	€250 per unit	-	-	-	-
Industrial – Warehouse	Leases-in-Place	5%	3.0%	€0.15 psf	10.0%	2.5%	5.0%	2.5%
Flex (Industrial/ Office)	Leases-in-Place	5%/10%	4.0%	€0.15/€0.20 psf	10.0%	2.5%	5.0%	2.5%
Office	Leases-in-Place	10%	4.0%	€0.20 psf	15.0%	2.5%	5.0%	2.5%
Regional Mall	Leases-in-Place	5%	4.0%	€0.20 psf	10.0%	2.5%	5.0%	2.5%
Anchored Retail	Leases-in-Place	5%	4.0%	€0.15 psf	10.0%	2.5%	5.0%	2.5%
Unanchored Retail	Leases-in-Place	10%	4.0%	€0.15 psf	10.0%	2.5%	5.0%	2.5%
Self-Storage	T-12	10%	6.0%	€0.10 psf	-	-	-	-
Hotel – Full Service	T-12	NA	11–14%	5% (EGI)	-	-	-	-
Hotel – Limited Service	T-12	NA	11–14%	5% (EGI)	-	-	-	-
Assisted Living	T-12	10%	5.0%	€350 per unit	-	-	-	-
Independent Living	T-12	7.5%	5.0%	€300 per unit	-	-	-	-
Skilled Nursing Facility	T-12	5%	5.0%	€250 per bed				

1 For purposes of jurisdiction, £ may be substituted for €. Also, amounts may vary based on how the property is measured: psf (per square foot) may be calculated to psm (per square metre).
2 Rent free periods and buildout contributions by the landlord vary significantly across jurisdictions and lease terms. DBRS will use these figures as a starting point in its analysis and adjust accordingly based on actual historical performance of the asset, valuation assumptions, lease terms and jurisdiction.

Appendix C: Sample DBRS Underwriting

€15,000,000 Atrium on the Sea (Aberdeen, United Kingdom): Current Rent Roll

RR Type: Draft **RR As Of: 5/30/04** **Short Name: DBRS Underwritten Cash Flow**

TENANT INFORMATION					NET RENTABLE AREA		UNDERWRITTEN BASE RENT Underwritten Occ. Cost				UNDERWRITTEN GROSS POTENTIAL RENT											
				Base Rent							Base Rent					Underwritten Occ. Cost			Lease Dates		Lease Length (Yrs)	
Tenant Name	Lease Type	Tenant Type	Occupancy Status	Tenant Class	SF	% of NRA	Unit	Contractual	Market	Underwritten	€/Yr	PSF/ Yr	PSF/ Mo	Percentage Rent	Reimbursements	€/Yr	PSF/ Yr	%GPR	Lease Start	Lease End	Lease End	Full Remain Term
CIBC – Direct to Consumer/Amicus Financial	Net	Office	Leased	Office	22,000	16.6%	€PSF/Yr	14.00	18.00	14.00	308,000	14.00	1.17	0	280,416	588,416	26.75	14.9%	01/11/2003	31/10/2016	12.4	13.0
r – MCI Medical Clinic Inc.	Net	Retail	Leased	Retail	14,356	10.8%	€PSF/Yr	15.00	22.00	15.00	215,340	15.00	1.25	0	156,416	371,756	25.90	9.4%	01/11/2003	31/10/2016	12.4	13.0
Public Trustee	Net	Office	Leased	Office	12,345	9.3%	€PSF/Yr	16.00	18.00	16.00	197,520	16.00	1.33	0	162,210	359,730	29.14	9.1%	01/09/1999	31/08/2009	5.3	10.0
Registry Office	Net	Office	Leased	Office	5,672	4.3%	€PSF/Yr	17.00	18.00	17.00	96,424	17.00	1.42	0	60,069	156,493	27.59	4.0%	01/07/1999	30/06/2004	0.1	5.0
r – The Kitchen Table	Net	Retail	Leased	Retail	4,567	3.4%	€PSF/Yr	18.00	22.00	18.00	82,206	18.00	1.50	0	57,263	139,469	30.54	3.5%	01/11/2003	31/10/2013	9.4	10.0
Provincial Auditor	Net	Office	Leased	Office	2,355	1.8%	€PSF/Yr	18.00	18.00	18.00	42,390	18.00	1.50	0	41,637	84,027	35.68	2.1%	01/11/2003	31/10/2011	7.4	8.0
Hunter Keilty Muntz Beatty 920	Net	Office	Leased	Office	6,434	4.9%	€PSF/Yr	19.00	18.00	18.00	115,812	18.00	1.50	0	92,452	208,264	32.37	5.3%	01/07/2000	30/06/2014	10.1	14.0
Land Registry Office	Net	Office	Leased	Office	7,453	5.6%	€PSF/Yr	13.00	18.00	13.00	96,889	13.00	1.08	0	107,651	204,540	27.44	5.2%	01/11/2000	31/10/2005	1.4	5.0
r – Pharmx	Net	Retail	Leased	Retail	8,431	6.4%	€PSF/Yr	20.00	22.00	20.00	168,620	20.00	1.67	0	144,560	313,180	37.15	7.9%	01/11/2003	31/10/2013	9.4	10.0
r – Spring Rolls	Net	Retail	Leased	Retail	2,354	1.8%	€PSF/Yr	15.00	22.00	15.00	35,310	15.00	1.25	0	36,630	71,940	30.56	1.8%	01/11/2003	31/10/2016	12.4	13.0
r – Guess Canada (Ground Floor)	Net	Retail	Leased	Retail	7,653	5.8%	€PSF/Yr	11.75	22.00	11.75	89,923	11.75	0.98	0	119,064	208,986	27.31	5.3%	01/11/2003	31/10/2016	12.4	13.0
Alcohol & 'Gaming Commission'	Net	Office	Leased	Office	5,243	4.0%	€PSF/Yr	18.00	18.00	18.00	94,374	18.00	1.50	0	92,039	186,413	35.55	4.7%	02/04/2001	31/03/2006	1.8	5.0
Hunter Keilty Muntz Beatty 900/901	Net	Office	Leased	Office	4,078	3.1%	€PSF/Yr	19.00	18.00	18.00	73,404	18.00	1.50	0	73,809	147,213	36.10	3.7%	01/07/2003	30/06/2014	10.1	11.0
Western Town Community College	Net	Office	Leased	Office	5,026	3.8%	€PSF/Yr	13.50	18.00	13.50	67,851	13.50	1.13	0	90,506	158,357	31.51	4.0%	01/04/2000	31/03/2014	9.8	14.0
Alcohol & 'Gaming Commission' 834	Net	Office	Leased	Office	6,001	4.5%	€PSF/Yr	14.00	18.00	14.00	84,014	14.00	1.17	0	97,393	181,407	30.23	4.6%	28/02/2003	01/03/2006	1.8	3.0
r – Indian Flavour	Net	Retail	Leased	Retail	3,034	2.3%	€PSF/Yr	15.00	22.00	15.00	45,510	15.00	1.25	0	48,433	93,943	30.96	2.4%	01/11/2003	31/10/2013	9.4	10.0
Alcohol & 'Gaming Commission' 925	Net	Office	Leased	Office	4,056	3.1%	€PSF/Yr	15.00	18.00	15.00	60,840	15.00	1.25	0	63,653	124,493	30.69	3.2%	01/04/2002	31/03/2006	1.8	4.0
Registry Office 530	Net	Office	Leased	Office	4,365	3.3%	€PSF/Yr	16.00	18.00	16.00	69,840	16.00	1.33	0	65,836	135,676	31.08	3.4%	01/11/2000	31/10/2004	0.4	4.0
r – Red Lobster	Net	Retail	Leased	Retail	1,020	0.8%	€PSF/Yr	28.00	22.00	22.00	22,440	22.00	1.83	0	22,206	44,646	43.77	1.1%	01/05/2002	30/04/2010	5.9	8.0
r – LCBO	Net	Retail	Leased	Retail	500	0.4%	€PSF/Yr	25.00	22.00	22.00	11,000	22.00	1.83	0	6,532	17,532	35.06	0.4%	01/02/2000	31/01/2014	9.7	14.0
Vacant Office	Net	Office	Vacant	Office	3,500	2.6%	€PSF/Yr	0.00	18.00	18.00	63,000	18.00	1.50	0	24,725	87,725	25.06	2.2%	01/01/1901	01/01/1901	0.0	0.0
Vacant Retail	Net	Retail	Vacant	Retail	2,100	1.6%	€PSF/Yr	0.00	22.00	22.00	46,200	22.00	1.83	0	14,835	61,035	29.06	1.5%	01/01/1901	01/01/1901	0.0	0.0

Totals by Occupancy Status (a)	# Spaces	Total	% Total		Total	Wtd Av		Total			Wtd. Av	% Total			Wtd. Avg (b)
Leased	20	126,943	95.8%		1,977,707	14.92	1.24	0	1,818,773	3,796,480	28.64	96.2%		8.0	10.0
Subleased	0	0	0.0%		0	0.00	0.00	0	0	0	0.00	0.0%		0.0	0.0
MTM	0	0	0.0%		0	0.00	0.00	0	0	0	0.00	0.0%		0.0	0.0
Dark	z0	0	0.0%		0	0.00	0.00	0	0	0	0.00	0.0%		0.0	0.0
Total Occupied	**20**	**126,943**	**95.8%**		**€1,977,707**	**14.92**	**1.24**	**€0**	**€1,818,773**	**€3,796,480**	**28.64**	**96.2%**		**8.0**	**10.0**
Vacant	2	5,600	4.2%	< Physical Vacancy	109,200	0.82	0.07	0	39,560	148,760	1.12	3.8%	<Base Economic Vacancy		
Total	**22**	**132,543**	**100.0%**	**< Net Rentable Area (NRA)**	**€2,086,907**	**15.75**	**1.31**	**€0**	**€1,858,333**	**€3,945,240**	**29.77**	**100.0%**	**<Total UW Rent**		
			Total Square Footage Has Changed												

Totals by Tenant Class

Office	13	88,528	66.8%	1,370,358	15.48	1.29	0	1,252,395	2,622,753	29.63	66.5%	6.2	8.8
Retail	9	44,015	33.2%	716,549	16.28	1.36	0	605,938	1,322,487	30.05	33.5%	10.6	11.2

€15,000,000 Atrium on the Sea (Office/Office): Cash Flow Analysis

Sq Ft: 132,543

OpStmt Name		Historical 12/31/2002			Historical 12/31/2003			Historical 12/31/2004 3:58 pm						
Type			Historical			Historical			Historical			DBRS Concluded		
As-Of Date | Mos | Adjusted		12/31/02	12Mo	No	12/31/03	12Mo	No	12/31/04	12Mo	No	10/13/05	12Mo	No	
Source			Borrower			Borrower			Borrower				Underwriting	
		Amount	**PSF**	**%**	**Amount**	**PSF**	**%**	**Amount**	**PSF**	**%**	**Amount**	**PSF**	**%**	Notes
	Physical Occupancy %	90.0%			95.0%			93.0%			0.0%			
	INCOME:													
% GPR	Base Rent	1,800,000	13.58	49.3%	1,950,000	14.71	50.6%	1,970,000	14.86	50.6%	2,086,907	15.75	52.9%	LIP (Mk to Mkt), Vacant Mk to Mkt
"	CAM Reimbursement	1,850,000	13.96	50.7%	1,900,000	14.33	49.4%	1,920,000	14.49	49.4%	1,858,333	14.02	47.1%	Contractual Reimbursement
"	Tax Reimbursement	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Insurance Reimbursement	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Management Fee Reimbursement	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Other Reimbursement	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Percentage Rent	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Gross Potential Revenues	3,650,000	27.54	100.0%	3,850,000	29.05	100.0%	3,890,000	29.35	100.0%	3,945,240	29.77	100.0%	
"	Less: Vacancy Loss	0	0.00	10.0%	0	0.00	10.0%	0	0.00	10.0%	394,524	2.98	10.0%	Market vacancy
"	Less: Concessions	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Less: Credit Loss	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Net Rental Income	3,650,000	27.54	100.0%	3,850,000	29.05	100.0%	3,890,000	29.35	100.0%	3,550,716	26.79	90.0%	
"	Parking Income	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Other Income	56,000	0.42	1.5%	60,000	0.45	1.6%	66,000	0.50	1.7%	60,667	0.46	1.5%	Historical Average
"	Effective Gross Income	3,706,000	27.96	101.5%	3,910,000	29.50	101.6%	3,956,000	29.85	101.7%	3,611,383	27.25	91.5%	
	OPERATING EXPENSES:		0.00			0.00			0.00			0.00		
%EGI	Real Estate Taxes	300,000	2.26	8.1%	325,000	2.45	8.3%	335,000	2.53	8.5%	335,000	2.53	9.3%	Actual Tax Bill
"	Property Insurance	250,000	1.89	6.7%	270,000	2.04	6.9%	285,000	2.15	7.2%	295,000	2.23	8.2%	Actual Insurance Premium
"	Ground Rent	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	**Total Fixed Expenses**	550,000	4.15	14.8%	595,000	4.49	15.2%	620,000	4.68	15.7%	630,000	4.75	17.4%	
"	Utilities	135,000	1.02	3.6%	137,000	1.03	3.5%	139,000	1.05	3.5%	139,000	1.05	3.8%	T-12
"	Repairs & Maintenance	200,000	1.51	5.4%	210,000	1.58	5.4%	220,000	1.66	5.6%	220,000	1.66	6.1%	T-12
"	Janitorial	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
%NRI	Management Fee	155,000	1.17	4.0%	153,000	1.15	4.0%	154,000	1.16	4.0%	142,029	1.07	4.0%	Contractual Mgmt Fee
%EGI	Payroll Expense	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Advertising & Marketing	0	0.00	0.0%	206,000	1.55	5.3%	216,000	1.63	5.5%	216,000	1.63	6.0%	T-12
"	Security	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Professional Fees	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	General & Administrative	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Other Expenses	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	Total Operating Expenses	1,040,000	7.85	28.1%	1,301,000	9.82	33.3%	1,349,000	10.18	34.1%	1,347,029	10.16	37.3%	
	Reimbursement Ratio	177.0%			146.0%			142.0%			138.0%			
%EGI	**NET OPERATING INCOME**	**2,666,000**			**2,609,000**			**2,607,000**			**2,264,354**			
	CAPITAL EXPENDITURES:													
%EGI	Tenant Improvements	75,000	0.57	2.0%	73,000	0.55	1.9%	70,000	0.53	1.8%	53,776	0.41	1.5%	Calculated per rent roll projection
"	Leasing Commissions	65,000	0.49	1.8%	67,000	0.51	1.7%	55,000	0.41	1.4%	48,775	0.37	1.4%	Calculated per rent roll projection
"	Replacement Reserves	0	0.20	0.0%	0	0.20	0.0%	0	0.20	0.0%	26,509	0.20	0.7%	DBRS minimun requirement
"	Other Capital Expenditures	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	0	0.00	0.0%	
"	**Total Capital Expenditures**	**140,000**	**1.06**	**3.8%**	**140,000**	**1.06**	**3.6%**	**125,000**	**0.94**	**3.2%**	**129,060**	**0.97**	**3.6%**	
%EGI	**NET CASH FLOW**	**2,526,000**	**19.06**	**68.2%**	**2,469,000**	**18.63**	**63.1%**	**2,482,000**	**18.73**	**62.7%**	**2,135,294**	**16.11**	**59.1%**	

Appendix D: DBRS Underwriting and Sizing Guidelines

DBRS Large Loan Sizing Parameters

		DSCR Range		LTV Range	
Property Type	Rating	Low	High	Low	High
Regional Mall	AAA	1.9	2.1	45.00%	50.00%
Regional Mall	AA	1.7	1.9	47.50%	52.50%
Regional Mall	A	1.5	1.7	55.00%	60.00%
Regional Mall	BBB	1.35	1.55	69.50%	74.50%
Regional Mall	BB	1.15	1.35	85.5%	90.5%
Regional Mall	B	1.08	1.28	97.5%	102.5%
Multifamily	AAA	1.95	2.15	42.50%	47.50%
Multifamily	AA	1.75	1.95	45.00%	50.00%
Multifamily	A	1.55	1.75	52.50%	57.50%
Multifamily	BBB	1.4	1.6	66.50%	71.50%
Multifamily	BB	1.20	1.40	85.50%	90.50%
Multifamily	B	1.10	1.30	97.50%	102.50%
Retail – Anchored	AAA	2	2.2	40.00%	45.00%
Retail – Anchored	AA	1.78	2	42.50%	47.50%
Retail – Anchored	A	1.58	1.78	50.00%	55.00%
Retail – Anchored	BBB	1.45	1.65	63.50%	68.50%
Retail – Anchored	BB	1.25	1.45	84.50%	90.50%
Retail – Anchored	B	1.15	1.35	96.50%	102.50%
Industrial	AAA	2	2.2	40.00%	45.00%
Industrial	AA	1.78	2	42.50%	47.50%
Industrial	A	1.58	1.78	50.00%	55.00%
Industrial	BBB	1.45	1.65	63.50%	68.50%
Industrial	BB	1.25	1.45	85.50%	90.50%
Industrial	B	1.15	1.35	97.50%	102.50%
Office	AAA	2.2	2.5	37.50%	42.50%
Office	AA	1.9	2.2	40.50%	45.50%
Office	A	1.6	1.9	47.50%	52.50%
Office	BBB	1.5	1.8	63.50%	68.50%
Office	BB	1.30	1.60	83.00%	88.00%
Office	B	1.20	1.50	95.00%	100.00%
Retail	AAA	2.25	2.55	35.00%	40.00%
Retail	AA	1.95	2.25	38.00%	43.00%
Retail	A	1.65	1.95	45.00%	50.00%
Retail	BBB	1.55	1.85	60.50%	65.50%
Retail	BB	1.35	1.65	84.50%	90.50%
Retail	B	1.25	1.55	96.50%	102.50%
Hotel	AAA	2.95	3.35	27.50%	32.50%
Hotel	AA	2.6	3.00	31.00%	36.00%
Hotel	A	2.2	2.6	37.50%	42.50%
Hotel	BBB	1.85	2.25	49.00%	54.00%
Hotel	BB	1.55	1.95	82.00%	88.00%
Hotel	B	1.45	1.85	95.00%	100.00%
Self-Storage	AAA	2.25	2.55	35.00%	40.00%
Self-Storage	AA	1.95	2.25	38.00%	43.00%
Self-Storage	A	1.65	1.95	45.00%	50.00%
Self-Storage	BBB	1.55	1.85	60.50%	65.50%
Self-Storage	BB	1.35	1.65	84.50%	90.50%
Self-Storage	B	1.25	1.55	96.50%	102.50%
Mixed Use/ Other	AAA	2.24	2.51	36.00%	41.00%
Mixed Use/ Other	AA	1.98	2.25	39.50%	44.50%
Mixed Use/ Other	A	1.70	1.97	46.50%	51.50%
Mixed Use/ Other	BBB	1.54	1.82	60.50%	65.50%
Mixed Use/ Other	BB	1.32	1.59	84.00%	89.50%
Mixed Use/ Other	B	1.23	1.49	96.50%	101.50%

Note:
DSCR is determined based on the more constraining of Term DSCR or Refinance DSCR. Term DSCR is calculated using the cut-off balance measured against DBRS's Stabilized NCF and the maximum actual annual debt service. By applying refinance constants to the balloon amount DBRS calculates Refinance Debt Service. DBRS's Stabilized NCF is then divided by the Refinance Debt Service to obtain a Refinance DSCR.
LTV is calculated based on DBRS's Stabilized NCF capped at DBRS's capitalization rates.
Refinance constants and capitalization rates are determined based on property quality, cash flow stability, market conditions and sponsor strength.

Appendix E: DBRS Direct Sizing Example

DBRS Large Loan Sizing

Property Info		Loan Info		DSCR Sizing	DSCR Hurdle	Proceeds	Cumulative Proceeds	C/E
Property Name	Office Building	Interest Rate	5.750%	AAA	2.35	369,971,375	369,971,375	30.85%
Size	1,500,000	Remaining Term	120	AA (high)	2.20	25,225,321	395,196,696	26.13%
Address	123 High Street	Remaining Amort	360	AA	2.05	28,916,831	424,113,528	20.73%
City, Nation	London, UK	Remaining IO	120	AA (low)	1.95	21,749,412	445,862,939	16.66%
Property Type	Office	Annual DS (post IO)	37,632,799	A (high)	1.85	24,100,699	469,963,639	12.16%
				A	1.75	26,855,065	496,818,704	7.14%
Amortization		**Net Cash Flow**		A (low)	1.72	9,646,965	506,465,669	5.33%
Current Balance	535,000,000	Issuer NCF	77,233,872	BBB (high)	1.68	10,029,023	516,494,692	3.46%
Balloon Balance	535,000,000	DBRS NCF	76,075,364	BBB	1.65	10,434,236	526,928,928	1.51%
% Amortized	0.0%	Haircut	-1.5%	BBB (low)	1.58	23,344,953	535,000,000	0.00%
DSCR		**LTV**		BB (high)	1.48			
Issuer DSCR	2.05	DBRS LTV	59.8%	BB	1.45			
DBRS Term DSCR	2.06	DBRS Refi LTV	59.8%	BB (low)	1.42			
DBRS Refi DSCR	1.65	DBRS Cap Rate	8.500%	B (high)	1.38			
DBRS Constant	8.750%	DBRS Value	895,004,282	B	1.35			
Actual Constant	7.034%	Appraised Value	1,000,000,000	B (low)	1.32			

Other Parameters		LTV Sizing	LTV Hurdle	Proceeds	Cumulative Proceeds	C/E
DSCR Hurdle Type	Midpoint	AAA	40.00%	358,001,713	358,001,713	33.08%
LTV Hurdle Type	Midpoint	AA (high)	41.50%	13,425,064	371,426,777	30.57%
Country	U.K.	AA	43.00%	13,425,064	384,851,841	28.07%
DSCR Constraining	Refi	AA (low)	45.33%	20,883,433	405,735,275	24.16%
		A (high)	47.67%	20,883,433	426,618,708	20.26%
		A	50.00%	20,883,433	447,502,141	16.35%
		A (low)	55.33%	47,733,562	495,235,703	7.43%
		BBB (high)	60.67%	47,733,562	535,000,000	0.00%
		BBB	66.00%			
		BBB (low)	69.00%			
		BB (high)	81.50%			
		BB	85.50%			
		BB (low)	89.50%			
		B (high)	93.50%			
		B	97.50%			
		B (low)	101.50%			

Appendix F: First-Dollar Loss Ratings for European Commercial Real Estate Loans

DBRS may consider certain European commercial real estate loans for the purposes of assigning loan-level first-dollar loss ratings. These ratings are typically requested by the financial institution that holds the loan and are available only to that regulated financial institution for capital-assessment purposes; as such, the first-dollar loss rating would only be applicable to that lender's position. These ratings reflect DBRS's opinion on the first-dollar loss that may be experienced by the financial institution with respect to the interest and/or principal payment obligations of the relevant borrower in respect of such a commercial real estate loan. First-dollar loss ratings do not consider the timeliness of interest and principal payments. Furthermore, first-dollar loss ratings do not consider other obligations of the borrower, the insolvency risk of the borrower or any relevant structural features or deficiencies. DBRS assigns these ratings by applying its long-term obligations rating scale.

DBRS applies the same general approach described in this methodology (i.e., a loan-level review in the context of a European CMBS transaction). The rating is based on the DBRS LTV and the DBRS DSCR as compared with the DBRS Large Loan Sizing Parameters by incorporating both the DBRS NCF and DBRS Cap Rates. Notwithstanding that these first-dollar loss ratings do not generally consider the timeliness of interest and principal payments (as previously noted), DBRS may build an additional element of conservatism into these ratings to reflect the potential for the accumulation of interest in arrears. As outlined in the liquidity facility section of this methodology, DBRS ratings in the highest category (i.e., AAA) typically consider the timely payment of interest. As such, first-dollar loss ratings higher than AA (high) are very difficult to obtain. Another factor that typically restricts first-dollar loss ratings in the highest two rating categories (AAA and AA) is the loan's refinancing risk (balloon repayment at maturity) and the lack of a tail period that is common in European CMBS structures (see elsewhere in this methodology).

The analytical review for first-dollar loss ratings primarily focuses on confirming that DBRS's property analysis, NCF and modeling assumptions are supported by the relevant documentation (e.g., loan-level documentation and tenant lease review). DBRS also expects the mortgage lender's security interest in respect of the property cash flows to be documented. These general principles are subject to adjustment or modification based on DBRS's assessment of the property or such other relevant qualitative factors on a case-by-case basis.

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