



Methodology

*Master European Structured Finance  
Surveillance Methodology*

AUGUST 2010



*Insight beyond the rating.*

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## CONTACT INFORMATION

### STRUCTURED FINANCE

**Claire J. Mezzanotte**

Managing Director

European Structured Finance - ABS/RMBS/Covered Bonds

Tel. +44 (0)20 3137 9520

cmezzanotte@dbrs.com

### STRUCTURED FINANCE - OPERATIONAL RISK AND SURVEILLANCE

**Kathleen Tillwitz**

Senior Vice President

European Structured Finance - ABS/RMBS/Covered Bonds

Tel. +44 (0)20 3137 9521

ktillwitz@dbrs.com

**Jayce Fox**

Vice President

European Structured Finance - ABS/RMBS/Covered Bonds

Tel. +44 (0)20 3137 9368

jfox@dbrs.com

### STRUCTURED FINANCE - RESEARCH AND MODELING

**Jan Buckler**

Senior Vice President

European Structured Finance - ABS/RMBS/Covered Bonds

Tel. +44 (0)20 3137 9524

jbuckler@dbrs.com

### Related Research:

Legal Criteria for European Structured Finance Transactions and Addenda dated August 2010

Unified Interest Rate Model dated August 2010

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DBRS is a full-service credit rating agency established in 1976. Privately owned and operated without affiliation to any financial institution, DBRS is respected for its independent, third-party evaluations of corporate and government issues, spanning North America, Europe and Asia. DBRS' extensive coverage of securitisations and structured finance transactions solidifies our standing as a leading provider of comprehensive, in-depth credit analysis.

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

This methodology replaces and supersedes all related prior methodologies. This methodology may be replaced or amended from time to time and, therefore, DBRS recommends that readers consult [www.dbrs.com](http://www.dbrs.com) for the latest version of its methodologies.



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# Master European Structured Finance Surveillance Methodology

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## Executive Summary

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DBRS Ratings Limited (DBRS) is requesting comments on the proposed surveillance methodology for European securitisations. Comments should be received on or before October 29, 2010. Please submit your comments to the following e-mail address: [dbrseusfsurvcomments@dbrs.com](mailto:dbrseusfsurvcomments@dbrs.com). DBRS will publish a final methodology following the review and evaluation of all submissions. Contained in this report are descriptions of the DBRS surveillance process including the rating committee process, the types of rating actions taken by rating committees, our disclosure policies and procedures, as well as the sector specific methodology employed by DBRS in the ongoing monitoring of the following asset types:

- Residential Mortgages
- Covered Bonds
- Auto Loans
- Auto Leases
- Auto Wholesale Loans
- Rental Cars
- Credit Cards
- Equipment Loans and Leases

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## General Structured Finance Surveillance Methodology

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Once DBRS assigns a final short and/or long-term rating to a security, the surveillance process begins and is continued for as long as DBRS maintains a rating on the security. DBRS monitors all of its outstanding public and private ratings to ensure each rating reflects all data and information requested, received and sourced by DBRS. In general terms, ratings are opinions that reflect the creditworthiness of an issuer, a security, or an obligation. They are opinions based on forward-looking measurements that assess an issuer's ability and willingness to make timely payments on outstanding obligations with respect to the terms of the obligation.

In order to maintain high quality ratings, DBRS takes measures to ensure that the data and information used to monitor a rating is both sufficient and reliable for purposes of rendering rating decisions. In cases where ongoing information is no longer deemed reliable or of sufficient quality, and DBRS is unable to properly monitor the transaction, DBRS may discontinue existing rating(s).

DBRS conducts periodic and sector reviews for all outstanding transactions and each transaction is reviewed by a rating committee at least once per year or in cases when exogenous events warrant. For periodic reviews, data obtained from trustee/servicer reports and trusted third party sources is used to maintain databases that store data and calculate performance metrics. The periodic review conducted by DBRS consists of analysing performance trends, comparing actual performance to DBRS initial expectations and forecasting collateral behaviour and its impact on the rated securities. The evaluation also entails the review of transaction triggers that may change cash flow allocations or cause the replacement of key entities within the transaction structure. For key transaction parties and sovereign risks, DBRS reviews each entity's public rating(s), DBRS' internal assessment(s) and other qualitative considerations. When a periodic evaluation determines that a transaction's performance is projected to be outside of DBRS expectations, a rating committee is typically convened for the purpose of determining the appropriate rating action(s).



Sector reviews are used to examine all outstanding rated transactions in each sector or asset class. The reviews evaluate if and how overall industry, collateral and transaction performance trends or exogenous events may impact the sector and outstanding ratings. Sector reviews may also lead to securities being reviewed by a rating committee to determine if a rating action is warranted.

## PROCEDURES

DBRS obtains data from servicer remittance reports, as well as third party sources such as Bloomberg for its periodic reviews, which occur with the same frequency as the receipt of servicer remittance reports. The data is either entered manually or migrated electronically into models and checked for accuracy. The models calculate critical performance characteristics and maintain historical records of performance for trend analysis and comparison to DBRS original expectations. Structural features such as transaction triggers are checked for compliance, the financial strength of counterparties is evaluated and performance vectors are derived and analysed.

## RATING COMMITTEES

All DBRS ratings and rating actions are determined by rating committees. The purpose of DBRS rating committees is as follows:

- provide objective and independent rating decisions that are a reflection of DBRS' opinion, rather than the view of an individual analyst or analysts;
- ensure rating decisions are based on sufficient information, incorporate both global and local considerations, and apply DBRS approved methodologies;
- provide a checkpoint for actual and perceived conflicts of interest among analysts; and
- standardise the rules, procedures and documentation processes to drive efficiency and adherence with respect to rating decisions.

Rating committees have specific member composition requirements and are comprised of experienced and knowledgeable analysts, senior staff and management personnel. For monitoring existing securities, rating committees review each outstanding rating annually. Rating committees also meet on an 'as-needed' basis as rating events occur. This approach provides maximum flexibility, as well as permitting timely and informative rating decisions. Generally, all relevant materials are distributed to rating committee voters in advance. The materials contain a rating recommendation for a particular rating action and rationale. The materials are presented and evaluated during the meeting, and following due consideration, a vote is taken.

## RATING ACTIONS

Over the life of each rated security, DBRS may change a rating by raising (upgrade), lowering (downgrade), keeping the rating the same (confirm) or ceasing monitoring of a rating (discontinue). Other rating actions include placing a rating "Under Review". When a material event occurs that may directly impact the credit quality of a particular security, DBRS attempts to provide an immediate rating opinion. If there is uncertainty regarding the outcome of the event, and DBRS is unable to provide an objective, forward-looking opinion in a timely fashion, the rating(s) of the transaction(s) is placed Under Review.

When a decision is made by DBRS to place a rating Under Review, DBRS provides initial guidance as to its opinion by noting whether the Under Review action has Positive, Negative or Developing Implications. These descriptors indicate DBRS' preliminary view of the impact on the credit quality of the security. As situations and potential rating implications may vary, our final rating conclusion may depart from the preliminary assessment. Typically, the subsequent rating action for securities placed Under Review with Positive Implications is either an upgrade or a confirmation. The subsequent rating action for securities placed Under Review with Negative Implications is typically either a downgrade or confirmation. The subsequent rating action for securities placed Under Review with Developing Implications may be an upgrade, downgrade or confirmation. A Developing description is typically used when a struc-



ured finance security is highly dependent on a corporate entity that has been placed Under Review with Developing Implications.

In cases where a rating is placed Under Review, DBRS views this as a temporary situation and strives to complete its review and remove the rating from this status as soon as it is appropriate to do so. In the event that a lengthy Under Review period is anticipated, DBRS may provide such guidance in a press release and may, if appropriate, provide guidance as to the anticipated rating that would emerge under a proposed scenario. In the event that DBRS decides to discontinue a rating that is Under Review, DBRS resolves the Under Review status prior to the discontinuance.

## RATINGS

DBRS employs different rating scales for short term debt and long term debt.

Short term debt is rated on a scale ranging from R1 (high), which the highest rating, to D which is the rating for a defaulted security. Rating categories between R1 and D are denoted as R2 through R5. The two highest rating categories, R1 and R2, have subcategories of “high” and “low”, indicating a securities credit profile is at near the top or bottom of the range. A security in the R1 or R2 category with no designation of high or low means the rating is in the middle of the range. Below is a summary of the short term debt rating scale.

- |             |  |
|-------------|--|
| • R1 (high) | Highest quality                        |
| • R1        | Superior quality                       |
| • R1 (low)  | Satisfactory quality                   |
| • R2 (high) | Adequate quality (upper range)         |
| • R2        | Adequate quality                       |
| • R2 (low)  | Adequate quality (lower range)         |
| • R3        | Adequate quality (bottom of the range) |
| • R4        | Speculative                            |
| • R5        | Highly Speculative                     |
| • D         | Defaulted                              |

The DBRS long-term debt rating scale ranges from “AAA” to “D” and with the exception of the “AAA” and “D” categories is denoted by the subcategories “high” and “low”. The absence of either a “high” or “low” designation indicates the rating is in the “middle” of the category. Below is a summary of the long term debt ratings scale.

- |       |                         |
|-------|-------------------------|
| • AAA | Highest quality         |
| • AA  | Superior quality        |
| • A   | Satisfactory quality    |
| • BBB | Adequate quality        |
| • BB  | Speculative             |
| • B   | Highly Speculative      |
| • CCC | Very Highly Speculative |
| • CC  | Very Highly Speculative |
| • C   | Very Highly Speculative |
| • D   | Defaulted               |

## DISCLOSURE - PRESS RELEASES

DBRS discloses rating actions made on public transactions through the publication of press releases. Once the rating committee has been concluded, DBRS provides the issuer or sponsor, as applicable, with a copy of the draft press release and, if applicable, a report prepared in relation to the rating action, prior to public dissemination. This step permits the issuer or its agent to review DBRS’ disclosure documents for the presence of factual errors or the inadvertent inclusion of confidential information. It is DBRS’ goal to deliver high quality rating opinions in a timely manner to the market.



An issuer/sponsor may request an appeal of a DBRS rating action when:

1. material new information is provided to DBRS (new or existing rating); or
2. there is a significant change in the terms of the proposed issue (new rating).

DBRS considers rating appeals on a case by case basis. DBRS defers issuing a press release and related report pending disposition of the appeal request and resolution of the appeal, as applicable.

The content of press releases includes the name of the issuer, the rating action taken, the rationale for the rating action and final rating determined. Additional information includes the title(s) of the relevant methodology(ies) applied, sources of information used in addition to other pertinent items. For private ratings, a rating letter is provided to the sponsor of the transaction.

Following the review of a public transaction, a Performance Analytics Report (PAR) is generated and published on the DBRS website. The PAR provides a summary of the transaction's key analytical considerations in a user-friendly format to enable market participants to assess ongoing performance.

### FEEDBACK MECHANISM

The monitoring process provides important feedback to the Structured Finance Criteria Committee (SFCC), which is tasked with facilitating the ongoing review of existing structured finance rating methodologies, models and key rating assumptions. In cases where the performance of existing transactions is outside of expectations, the feedback mechanism enables the SFCC to determine whether a review of an existing methodology, model or key rating assumption(s) is warranted.

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## Residential Mortgages

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The purpose of this section is to set forth the surveillance methodology and process DBRS utilises for residential mortgage securitisations. Included is a discussion of the analysis process and the key credit factors DBRS examines.

### OVERVIEW

Mortgage pool performance expectations can vary with jurisdiction and be a function of the types of mortgages typical to that jurisdiction or a result of cultural or regulatory influences. Various types of mortgage loan structures exist in different jurisdictions, but certain types of structures are frequently found in many jurisdictions. In many jurisdictions, mortgages with fixed rates of interest tend to be the predominant form of loan structure. Repayment structures of the loan, however, may vary and include; linear mortgages, annuity mortgages, interest-only mortgages, investment mortgages or other types specific to the jurisdiction.

Linear mortgages and annuity mortgages are two of the most common types. Under the terms of a linear mortgage loan, the borrower makes a monthly payment comprised of a fixed principal component and a variable interest component. Under the terms of an annuity mortgage, the borrower makes a fixed monthly payment, the principal and interest components of which change over time, with interest initially comprising the majority of the payment, but principal becoming the majority of the payment in later years. However, other types of mortgages also exist. There are interest-only mortgages in which the borrower repays only interest during the mortgage and repays principal in a bullet at the mortgage loan maturity. Investment mortgages, in which the borrower does not pay principal, but instead selects investments into which their monthly payments are directed (with the idea that the investments will grow to an amount sufficient to retire the mortgage loan at maturity) exist in many jurisdictions. Similarly, life and savings mortgage loans (both of which involve the borrower paying monthly premiums on insurance policies with



the idea that the policies will accrete in value sufficient enough to retire the mortgage at maturity) exist in many jurisdictions. These different loan structures carry varying degrees of risk. For instance, with investment mortgages and life mortgages, there often is no guarantee that the value of the investments or the redemption value of the life policy will be sufficient to retire the mortgage loan at maturity.

Mortgage types may also be segmented into prime and subprime sectors, though the prevalence of the subprime sector may vary considerably between jurisdictions. The prime sector is characterised by borrowers with clean credit histories that have no judgements for non-payment of loans (such as County Court Judgments in the UK), no meaningful history of being in arrears and no insolvencies. Subprime borrowers tend to have one or more of those types of occurrences in their credit history and typically present a greater default risk.

Other factors such as buy-to let mortgages or self certification mortgages present additional elements into the risk profile of a loan. For instance, a buy-to-let property may introduce the necessity of keeping the property leased in order to cover the mortgage payments or increase the likelihood that a borrower will walk away from a property that has not been a good investment. Self certification mortgages introduce a greater likelihood that the borrower may default due to misrepresentations of income and their ability to repay the loan as agreed.

## PERFORMANCE METRICS

Trend analysis of certain performance metrics allows for a more accurate assessment of developments in a transaction's credit profile. While reporting requirements and data availability may vary between issuers and jurisdictions, DBRS monitors the following performance metrics for residential mortgages in order to develop a more comprehensive picture of a transaction's performance.

Key performance metrics such as arrearages, cumulative losses, loss severity, prepayments and excess spread are compared to expectations used when the initial rating(s) were assigned and monitored for trends that could indicate deterioration in performance. These vectors along with event driven metrics, such as transaction triggers and counterparty ratings, are reviewed using a combination of trend and event analysis. If deteriorating trends or exogenous events suggest a rating change may be in order, cumulative losses on the pool are forecasted using a pipeline method; whereby, current levels of cumulative losses are adjusted using historical arrearage roll rates and then plotted against cumulative loss curves used by DBRS at the time that the initial rating was assigned. Available credit enhancement is then compared to current credit enhancement and further analysis, which may include cash flow stress testing, is performed. If such analysis suggests a rating action is warranted, a rating committee is convened to evaluate proposed rating changes.

### *Gross Loss / Recovery Rates (or Loss Severity)*

Losses are a function of gross loss rates and recovery rates. Increased gross loss rates, even when recovery rates are constant, lead to higher net losses and greater stress on available credit enhancement. Expected gross loss rates vary by asset and mortgage type as well as by jurisdiction and originator. DBRS compares changes in loss rates on a monthly basis as well over three and six month periods for trends. Cumulative losses are compared against expectations and stresses used in the original rating of the transaction as well as against credit enhancement available.

As recoveries reduce the losses a transaction's credit enhancement must absorb, recovery rates are an important metric to monitor. Lower than anticipated recovery rates not only represent increased stress in terms of greater losses on current defaults, they may signal greater than anticipated losses in the future, even if gross losses are within expectations. DBRS monitors changes in recovery rates over three and six month periods to evaluate trends.



### *Credit Enhancement / Excess Spread*

Credit enhancement typically comes from a combination of subordination, over-collateralisation, reserve accounts and excess spread. Credit enhancement is monitored both in terms of the level required by transaction documentation as well as its sufficiency to cover projected losses with respect to the multiple ranges employed by DBRS when rating the transaction.

Gross excess spread is the difference between the yield on the asset pool and the cost of funding the securities (including administration fees such as servicing, etc). Typically excess spread absorbs losses each month, before other forms of credit enhancement are drawn upon. After losses have been absorbed, the amount of excess spread available, if any, is “net excess spread”, and usually may be used to replenish credit enhancement that has been reduced from losses in prior months. If net excess spread is not needed to replenish credit enhancement it may be released from the deal. Once released, it cannot be recaptured. DBRS monitors trends in gross and net excess spread over one, three and six month timeframes. A swap may also be introduced into the transaction structure to mitigate interest rate risk and effectively ensure a certain level of excess spread. In those cases, DBRS monitors the financial strength of the swap provider and the attendant triggers to such structural features.

### *Arrearage Rates*

Trends in arrearages may be used to predict future loss trends. Beyond forecasting loss pipelines, certain patterns of arrearage behaviour may also be indicative of other issues. Increasing overall arrearages, roll rates that indicate a decreased number of “arrearage cures” or the build-up of seriously delinquent loans may be attributable to weakening macroeconomic conditions or be indicative of servicing issues. Either may have an impact on future pool performance and must be taken into consideration when evaluating a transaction.

DBRS monitors trends in delinquency rates in terms of monthly as well as three and six month changes for trends and for variance from expectations. Signs of increases in the amount of loans that are in foreclosure or are owned by the lender are monitored using monthly, three and six month timeframes.

### *Prepayment Speed*

For trend analysis and modeling purposes, DBRS endeavours to monitor prepayments both in terms of prepayment speeds inclusive of defaults (the “all-in” speed) and exclusive of defaults (the “voluntary” speed). This allows for the development of prepayment vectors for cash flow modeling that are independent of default behaviour. When data is available, DBRS monitors monthly, three month and six month prepayment speeds in this manner.

### *Financial Condition of Key Entities*

The financial condition of counterparties is important to the structure of deals. Not only can the insolvency of a servicer create issues with respect to collections and other servicing functions, but it may also create funds commingling issues that could affect timely remittances to investors. Additionally, as many mortgages are fixed rate, the continued financial strength of swap counterparties is significant to the performance of transactions. DBRS incorporates a financial review of relevant parties in its periodic evaluation of a transaction. This entails a review of the company’s DBRS credit rating or internal assessment and pertinent financial news.

Sovereign risk can manifest in securitisations in a variety of forms- from the effect the overall economy of the region has on loan repayment behaviour of borrowers to downgrades of key transaction counterparties that may be owned or partially owned by the state. Sovereign risks in a transaction are monitored through a combination of reviewing DBRS’ public rating or internal assessment of the sovereign entity as well as keeping abreast of news that affects the sovereign’s financial stability.



### *Triggers*

Triggers are defined in the governing legal documents for each transaction. Triggers often relate to pool performance, changes in public ratings, internal assessments, and breaches of triggers may necessitate changes such as increases in credit enhancement, the posting of collateral for swaps agreements, or replacement of transaction parties such as servicers or swap providers. DBRS tracks compliance with these triggers in each of its periodic reviews, and to the extent data is available, re-calculates performance metrics tied to triggers in order to evaluate compliance.

## STRESS TESTING

If the periodic review or exogenous events indicate a rating change may be in order, a more comprehensive analysis is performed to determine if a rating committee is necessary. In performing these comprehensive analyses, the standard stresses used by DBRS in rating a transaction are used, but with base case assumptions derived from actual performance of the asset pool. Levels of stress and shapes of loss curves may be modified when exogenous factors indicate such change is prudent.

### *Note:*

Further information about DBRS rating methodology for European mortgage securitisations can be found in the following publications available on the DBRS website.

“Master European Residential Mortgage-Backed Securities Rating Methodology”

“Legal Criteria for European Structured Finance Transactions” (contains counterparty criteria)

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## Covered Bonds

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The purpose of this section is to set forth the surveillance methodology and process DBRS utilises for European covered bonds. Included is a discussion of the analysis process and the key credit factors DBRS examines.

### OVERVIEW

Covered bonds maintain two sources of repayment - first from a regulated banking entity or specialised funding institution and secondly if needed, a cover pool of collateral, which is often comprised of residential mortgages, but may include other types of assets, such as public sector loans or commercial mortgages. Accordingly, DBRS takes a multi-faceted approach to monitoring the risks inherent in these structures. As the first source of repayment is the banking entity or funding institution, DBRS monitors the financial condition of the issuing entity in order to assess their ability to fulfill their obligations. Secondly, keeping in mind that various jurisdictions have varying requirements with regard to asset-liability mismatches and over-collateralisation requirements, DBRS monitors changes in the legal framework of jurisdictions that may affect bond structure or the ability to separate the cover pool from the entity, in the case of an issuer's insolvency. The third facet of the surveillance of covered bonds is the monitoring of the cover pool. DBRS applies the same analytical methods used to analyse a discrete pool of similar assets.

### PERFORMANCE METRICS

#### *Financial Condition of Key Entities*

As the primary source of repayment of the bonds, the financial condition of the issuing entity is heightened beyond that of a typical securitisation transaction. As a result, DBRS monitors the issuer's public rating or, in cases where DBRS does not maintain a public rating, we monitor our internal assessment. An issuer's public rating or internal assessment is conducted and monitored by DBRS' Financial Institutions Group (FIG), in accordance with applicable DBRS rating methodologies. The surveillance process is the same for key transaction participants, such as account bank providers and counterparties, such as swap counterparties.



Sovereign risk can affect covered bonds in both the financial stability of the counterparties such as the issuing entity, which is magnified if it is owned or partially owned by the state, as well as the economy of the region and its attendant effects on performance in the cover pool. Sovereign risks in a transaction are monitored through a combination of reviewing DBRS' public rating or internal assessment of the sovereign entity as well as keeping abreast of news that affects the sovereign's financial stability.

### *Legal and Structural Framework*

Issuers often utilise their nation's specific legislative framework in issuing covered bonds, but may also issue outside the legislative framework. DBRS endeavours to monitor the structure of deals for variances outside what was prescribed at issuance, such as rating triggers that may increase over-collateralisation or the activation of a back-up servicer. Additionally, the legislative landscapes are monitored for changes that could affect outstanding ratings.

### *The Cover Pool of Assets*

The analysis of the cover pool of assets is accomplished using the same DBRS methodologies used in analysing stand-alone securitisations backed by the same types of assets. Typically these would include trend analysis of certain performance metrics as well as monitoring exogenous events that could affect performance of the pool. The metrics being monitored typically include arrearage rates, loss rates (gross and net, when data is available), prepayment speeds and other performance measures specific to a particular asset class. These metrics are often monitored over monthly, three month and six month periods for signs of performance deterioration, as well as for comparison to original expectations and historical performance. The metrics may also be used for developing performance vectors that may be used in the event deeper analysis becomes warranted.

## STRESS TESTING

Stress testing of asset pools may be used in instances when the reliance for repayment of the covered bonds has shifted to the cash flow of the cover pool. In these instances, the stresses applied to the cover pool are consistent with those used in analysing stand-alone securitisations backed by the same types of assets, but based upon the performance trends currently observed in the asset pool.

### *Note:*

Further information about DBRS rating methodology for covered bonds can be found in the following publications available on the DBRS website.

“European Covered Bonds Methodology”

“Master European Residential Mortgage-Backed Securities Rating Methodology”

“Legal Criteria for European Structured Finance Transactions” (contains counterparty criteria)

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## Auto Loans

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The purpose of this section is to set forth the surveillance methodology and process DBRS utilises for European auto loan ABS. Included is a discussion of the analysis process and the key credit factors DBRS examines.

### OVERVIEW

Auto loan securitisations are typically term structures, utilising a senior subordinated capital structure in which principal repayments are usually either sequential or concurrent in nature. In a sequential pay structure, principal collected is allocated to tranches in order of their seniority, with the senior most getting paid first, followed by the second most senior and so forth. In concurrent structures, principal is allocated to maintain credit enhancement levels at a constant level based on the initial capital structure.



Warehousing structures, which are revolving in nature and usually funded by the issuance of commercial paper or medium term notes, may also be issued. Warehouse structures are “termed out” periodically, wherein the assets are used to support a longer dated securitisation and the proceeds from the sale of the term securitisation are used to repay investors in the warehouse facility.

The type of structure employed in a securitisation will affect certain behavioural aspects of the deal and may introduce new elements to be monitored (such as the need to monitor compliance with asset pool composition parameters for a revolving structure). DBRS takes these factors into account in its surveillance of auto loan ABS.

## PERFORMANCE METRICS

Trend analysis of certain performance metrics allows for a more accurate assessment of developments in a transaction’s credit profile. While reporting requirements and data availability may vary between issuers and jurisdictions, DBRS monitors the following performance metrics for auto loan ABS in order to develop a more comprehensive picture of a transaction’s performance.

A key performance metric evaluated includes actual and expected cumulative net losses (CNLs) measured against available credit enhancement. This evaluation determines whether each security’s rating is within acceptable loss coverage ratios for its current rating. Other metrics, for which performance vectors are developed, include excess spread levels, prepayment speeds, arrearages, repossession inventory and loss severity. Compliance with transaction triggers and counterparty rating criteria are also reviewed.

### *Gross Loss / Recovery Rates (or Loss Severity)*

DBRS performs a cumulative net losses (“CNLs”) calculation with the same frequency as transaction performance remittance reports are provided to investors. CNLs are a function of gross loss rates and recovery rates. Increased gross loss rates, even when recovery rates are constant, lead to higher net losses and greater stress on available credit enhancement. Additionally, loans that have been charged off due to contractual arrearages, rather than asset disposition, place liquidity stress on credit enhancement, as any offsetting recoveries will not be available until later in the transaction’s life.

Expected gross loss rates vary by asset type (prime versus subprime) and by originator/issuer. DBRS compares changes in loss rates on a monthly basis as well over three and six month periods to denote trends. Cumulative losses are compared against expectations and stresses used in the original rating of the transaction and are also projected for comparison to available credit enhancement.

As recoveries reduce the losses a transaction’s credit enhancement must absorb, the recovery rate is an important metric to monitor. Recovery rates are primarily a function of the supply and demand for used autos. Factors that affect the supply and demand include seasonal changes, demand for new cars (which can be affected by manufacturer incentives among other things), market saturation and general economic conditions. Lower than anticipated recovery rates not only represent increased stress in terms of greater losses on current defaults, they may signal greater than anticipated losses in the future, even if gross losses are within expectations. DBRS monitors trends in recovery rates over three and six month periods.

### *Projecting Expected Cumulative Net Losses (“CNL”)*

DBRS uses two methods for projecting the expected cumulative net loss of auto loan pools: the loss curve and the pool factor methods.

#### *Loss Curve Method*

This method assumes that losses are correlated with the timing of a cumulative loss curve developed by DBRS when assigning initial ratings. To calculate CNLs using this method, current CNLs are first adjusted to include losses yet to be realised from delinquent loans. This loss pipeline is calculated using historical arrearage roll rates and loss severity, and adjusted to reflect its percentage of the transaction



pool's original principal balance. The transaction's seasoning, at the end of the pipeline, is then plotted on the cumulative loss curve to ascertain the percentage of lifetime losses that will have been experienced, at that point in time. To project lifetime CNLs for a transaction, the current adjusted CNLs are then divided by the percentage obtained from plotting the transaction's seasoning on the cumulative loss curve. In the final step, the current CNLs are subtracted from projected lifetime CNLs to arrive at the projected losses remaining.

For example, if current cumulative losses are 2.8%, another 0.2% of losses are in the delinquency pipeline, the transaction is seasoned 23 months and the pipeline is assumed to account for the next three months of losses, the current CNLs would be adjusted to 3.0% (2.8% + 0.2%) and the cumulative loss curve would be consulted to see what percentage of losses are expected to have occurred by month 26 (23 + 3).

If the curve assumes 45% of lifetime cumulative net losses will occur by month 26, the lifetime CNLs would be  $.03 \div .45$ , or 6.67%. The remaining CNLs would be 3.87%, or 6.67% - 2.80% (not minus 3.0% as the 0.2% pipeline represents losses that have not yet been realised).

#### ***Pool Factor Method***

The pool factor method assumes that future losses continue at a rate correlated to the amortisation of the pool. To calculate remaining losses using this method, current period CNLs are divided by one minus the current pool factor to arrive at projected lifetime losses. To arrive at the cumulative net losses remaining in the transaction, current net losses are then subtracted from the projected lifetime losses calculated in the first step. For example, if current cumulative net losses equal 2% and the pool factor is 60%, lifetime cumulative net losses are projected to be  $.02 \div (1 - .6)$ , or 5%. The losses remaining in the transaction would then be 5% - 2%, or 3%.

#### ***Credit Enhancement / Excess Spread***

Credit enhancement may come in the form of subordination, over-collateralisation, reserve accounts and excess spread (or a combination of these). Credit enhancement is monitored both in terms of the level required by transaction documentation and its sufficiency to cover losses projected by DBRS with respect to the multiple ranges employed by DBRS when rating the transaction.

DBRS monitors trends in gross and net excess spread as well as yield. Gross excess spread is the difference between the yield on the asset pool and the cost of funding the securities (including administration fees such as servicing, etc). Excess spread absorbs losses each month, before other forms of credit enhancement are drawn upon. After losses have been absorbed, the amount of excess spread available, if any, is "net excess spread", and is typically used to replenish credit enhancement that has been reduced from losses in prior months. If net excess spread is not needed to replenish credit enhancement it may be released from the deal. Once released, it cannot be recaptured. If a swap has been incorporated into the transaction to mitigate interest rate risk, and effectively ensure a certain level of excess spread, DBRS monitors the financial strength of the swap provider and the attendant triggers to such a structural feature.

A pool's yield may be affected by pool concentrations of subvented loans (i.e. loans with low annual percentage rates (APRs), such as from manufacturer incentive programs). The risk is typically mitigated by yield supplement accounts that are sized by discounting the notional value of such assets at a rate that ensures a targeted yield. The accounts may be in the form of cash or overcollateralisation. When these accounts are utilised in a deal structure, DBRS monitors their balance as information is reported.

#### ***Arrears Rates / Repossession Inventory***

Trends in the amount of loans in arrears may be used to predict future loss trends. Beyond forecasting loss pipelines, certain patterns of delinquency behaviour may also be indicative of other issues. Increasing overall arrearages (that are not attributable to seasonality), roll rates that indicate a decreased number of "arrearage cures" or the build-up of loans seriously in arrears may be attributable to weakening mac-



roeconomic conditions or be indicative of servicing issues. Either may have an impact on future pool performance and must be taken into consideration when evaluating a transaction.

Repossession (repo) inventory represents cars that have been repossessed, but not yet liquidated. Deal structures may require a loan be charged off at the earlier of liquidation, a specific period of time after default, or a specified time after the auto has been repossessed. Hence, loans secured by vehicles in the repo inventory may have been fully charged off. As such, they represent unrealised recoveries and are monitored for their effect on asset cash flows. A growing repo inventory may be indicative of issues ranging from weak demand for used vehicles to servicer problems in liquidating the repossessed vehicles. Either of these situations would lead to lower recoveries, higher losses and greater stress on the transaction's credit enhancement in the future.

DBRS monitors trends in delinquency rates in terms of monthly as well as three and six month changes. Repossession inventory is compared with that of previous months to identify either signs of build-up or to confirm a satisfactory level of vehicle disposition

### *Prepayment Speed*

For trend analysis and modeling purposes, DBRS evaluates prepayment speeds inclusive of defaults (the "all-in" speed) and exclusive of defaults (the "voluntary" speed). This allows for the development of prepayment vectors for cash flow modeling, independent of default behaviour. As monthly prepayment rates are intrinsically volatile and susceptible to seasonal shifts, DBRS monitors monthly, three and six month prepayment speeds. Due to the short term of the typical auto loan contract and the depreciating nature of the collateral, non-scheduled reductions of pool balances are more often the result of defaults than actual refinancing activities (though some occur from early pay-off, trade-in/sale, or accident).

### *Financial Condition of Key Entities*

The financial condition of corporate entities such as the servicer or counterparties, such as the issuer account bank or swap provider is important to the structure of the deal. Not only can the insolvency of a servicer create issues with respect to collections and other servicing functions, but it may also create funds commingling issues that could affect timely remittances to investors. Deterioration in the financial condition of a swap party may necessitate the posting of collateral or replacement of the swap provider. Accordingly, DBRS incorporates a financial review of relevant parties in its periodic evaluation of a transaction. This entails a review of the company's public rating or internal assessment as assigned and maintained by DBRS' Financial Institutions Group, as well as pertinent financial news.

Sovereign risk can affect securitisations in a variety of forms, from the effects the region's overall economy may have on performance of the borrowing pool to downgrades of key transaction counterparties that may be owned or partially owned by the state. Sovereign risks in a transaction are monitored through a combination of reviewing DBRS' public rating or internal assessment of the sovereign entity as well as keeping abreast of news that affects the sovereign's financial stability.

### *Triggers*

Triggers are defined in the governing legal documents for each transaction. Triggers often relate to pool performance or changes in ratings for transaction participants. Breaches of triggers may necessitate changes such as increases in credit enhancement or replacement of transaction parties such as the servicer. These triggers are typically tied to pool loss and delinquency rates. DBRS tracks compliance with these triggers in each of its periodic reviews and may re-calculate certain performance metrics to assist in the evaluation.

## **STRESS TESTING**

If the periodic review or exogenous events indicate a rating change may be in order, a more comprehensive analysis is performed to determine if a rating committee is necessary. DBRS uses the same methodologies



for surveillance as is used when assigning the initial rating(s) to the transaction, but may adjust base case assumptions for performance variables based upon actual performance of the asset pool. The timing of losses may be stressed with back loaded, front loaded or “belly” curves. While front loaded loss curves are useful in simulating stress in cases where credit enhancement is not fully funded at closing, for more seasoned transactions, a front loaded scenario is less stressful. However, if stress is detected early in the life of a transaction, appropriately front loaded curves are also utilised. For more seasoned transactions, a curve wherein losses are back loaded to test the structure’s ability to withstand tail risk is used. In cases where the above scenarios are not applicable, alternative loss timing methods such as conditional default rates (CDRs) or a “belly” curve may be used. The “belly” significantly increases losses in the middle of a transaction to test the structure’s ability to withstand event risk scenarios. Recovery rates are based on trends evidenced in the transaction’s observed performance and are generally based on a transaction’s three month average recovery rate. Recoveries may be adjusted to reflect expected changes in the used car market. Prepayment scenarios typically utilise voluntary prepayment speed vectors that are based on a transaction’s historical performance.

**Note:**

Further information about DBRS rating methodology for auto loan securitisations can be found in the following publications available on the DBRS website.

“Rating European Consumer Asset-Backed Securitisations”

“Legal Criteria for European Structured Finance Transactions” (contains counterparty criteria)

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## Auto Leases

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The purpose of this section is to set forth the surveillance methodology and process DBRS utilises for European automobile lease ABS. Included is a discussion of the key credit factors DBRS examines and how they are viewed.

### OVERVIEW

Auto lease securitisations are usually collateralised by leases on new or used automobiles. Typically the lessor purchases a vehicle and leases it to the consumer. The lessee (i.e. the consumer) then pays the lessor for the right to use the vehicle during the term of the lease. At the end of the lease, the lessee may have the right to purchase the vehicle for a pre-determined price set in the lease contract (the “residual” value of the vehicle). If the option does not exist or the lessee does not exercise the option, the lessor retains ownership and must dispose of the vehicle. This could lead to the vehicle being disposed of for less than its contractual residual value. As the typical auto lease securitisation includes the residual value component of the lease in the trust valuation, the securitisation is exposed to this residual risk, in addition to the credit risk presented by the lessee defaulting on the lease contract.

### PERFORMANCE METRICS

Trend analysis of certain performance metrics allows for a more accurate assessment of developments in a transaction’s credit profile. While reporting requirements and data availability may vary between issuers, DBRS endeavours to monitor the following performance metrics to develop a more comprehensive picture of a transaction’s performance. One of the key performance vectors evaluated is that for expected cumulative net losses (“CNLs”). Expected CNLs are measured against available credit enhancement to determine if the transaction is still within acceptable loss coverage ratios for its current rating. Other metrics for which vectors are developed include residual value realisation, turn-in rates, delinquencies and loss severity. These vectors along with event driven metrics such as transaction triggers and counterparty ratings are reviewed using a combination of trend and event analysis.



### ***Credit Losses / Residual Losses***

As discussed, DBRS performs a cumulative net losses (“CNLs”) calculation with the same frequency as remittances to investors. Cumulative net losses are a function of both credit losses and residual losses. Credit losses arise from a combination of defaulted leases and recoveries that are insufficient to replenish the cash flow lost to the transaction. DBRS compares changes in default and recovery rate patterns for monthly changes as well as those occurring over three month and six month periods for trends.

Residual losses arise when the leased vehicle is not purchased for the pre-determined price and the financing company must dispose of the vehicle. Thus, they are a function of the turn-in rate (or the percentage of vehicles not purchased at the end of the lease) and the recovery rate on the vehicle when sold. Turn in rates are correlated with the accuracy of the initial residual value set at lease inception, and are influenced by supply and demand in the used vehicle market as well as by the make and model of the vehicle. Similarly, residual value realisation rates are also correlated with used vehicle prices. Factors that affect the supply and demand in the used vehicle market include seasonal changes, demand for new cars (which can be affected by manufacturer incentives among other things), market saturation and general economic conditions. DBRS monitors residual loss accumulation and trends over three and six month periods when evaluating this key metric.

Credit losses and residual losses are compared against expectations and stresses used in the original rating of the transaction.

### ***Projecting Expected Cumulative Net Losses (“CNL”)***

DBRS uses a two step method for projecting the expected CNLs in order to reflect the fact that pool losses may come from credit losses as well as residual losses. In the first step, credit losses are projected using the loss curve and pool factor methods. In the second step, turn-in rates are applied to the remaining balance of leases projected to survive then multiplied by the transaction’s adjusted historical residual recovery rate. Finally the credit loss projection and the residual loss projections are combined to arrive at a total CNL projection.

### ***Projecting Credit Losses***

DBRS uses two methodologies in determining remaining cumulative net credit loss. The two methodologies are discussed below.

#### ***Loss Curve Method***

This method assumes that losses are correlated with the timing of the loss curve that has been developed by DBRS in rating the transaction. To calculate credit related CNLs using this method, current credit related CNLs are first adjusted to include losses yet to be realised from delinquent loans. This loss pipeline is calculated using historical delinquency roll rates and loss severity, and adjusted to reflect its percentage of the transaction pool’s original principal balance. The transaction’s seasoning at the end of the pipeline is then plotted on the cumulative loss curve to ascertain the percentage of lifetime losses that will have been experienced at that point in time. To project lifetime credit related CNLs for a transaction, the current credit related CNLs are then divided by the percentage obtained from plotting the transaction’s seasoning on the cumulative loss curve.

For example, if current credit related cumulative losses are 3.0%, another 0.2% of losses are in the delinquency pipeline, the transaction is 20 months seasoned and the pipeline is assumed to account for three months of losses, the current credit related CNLs would be adjusted to 3.2% (3.0% + 0.2%) and the cumulative loss curve would be consulted to see what percentage of losses are expected to have occurred by month 23 (20 + 3). If the curve assumes 55% of lifetime cumulative net losses will occur by month 23, the lifetime credit related CNLs would be  $0.032 \div 0.55$ , or 5.82%. The remaining credit related CNLs would be 2.82%, or 5.82% - 3.00% (not minus 3.2% as the 0.2% pipeline represents losses that have not yet been realised). The current credit related CNLs are then subtracted from projected lifetime credit related CNLs to arrive at the credit related losses remaining.



### *Pool Factor Method*

The pool factor method assumes that future losses continue at a rate correlated to the amortisation of the pool. To calculate remaining losses using this method, current period credit related cumulative net losses are divided by one minus the current pool factor to arrive at projected lifetime credit related losses. To arrive at the cumulative credit related net losses remaining in the transaction, current credit related losses are then subtracted from the projected lifetime credit related losses calculated in the first step. For example, if current cumulative credit related net losses equal 3% and the pool factor is 40%, lifetime cumulative credit related net losses are projected to be  $.03 \div (1 - .40)$ , or 5%. The credit related losses remaining in the transaction would then be 5% - 3%, or 2%.

### *Projecting Residual Value Losses*

To arrive at the survivor rate, the current principal balance of the pool is reduced by the defaults projected to occur in the first step of the process. The historical turn-in rate is adjusted by using DBRS rating based stresses, and multiplied by the surviving balance. Finally, the historical recovery rate, as adjusted by applying DBRS stresses used in rating the deal to the projected turn-in rate to arrive at remaining residual losses in the transaction. For example, if the pool factor is 60%, the remaining credit losses are projected to be 1.5% (of original principal balance) and historical recovery rates have been 50%, then the turn-in rate will be applied to 57%, or  $(.60 - (.015 / .5))$ . If a stressed 95% turn in rate is used, then we project 54.2% in remaining turn-ins. If the historical residual rate has been 97%, and a 10% recovery stress is applied, then we would expect approximately 6.88% in residual losses remain in the pool, or  $.542 \times (1 - (.97 \times .9))$ .

### *Projecting Cumulative Net Losses*

In this step the projected credit losses and projected residual losses are combined. Using the example from above, if projected remaining credit losses are 1.50% and projected remaining residual losses are 6.88%, the projected cumulative net losses remaining are 8.38%, 1.50% plus 6.88%.

### *Credit Enhancement / Excess Spread*

Gross excess spread is the difference between the yield on the asset pool and the cost of funding the securities (including administration fees such as servicing, etc). Excess spread absorbs losses each month, before other forms of credit enhancement are used. After losses have been absorbed, the amount of excess spread available, if any, is "net excess spread", and may be used to replenish credit enhancement that has been reduced from losses in prior months. If not needed to replenish credit enhancement, it is released from the transaction and cannot be reclaimed.

Auto lease securitisations may contain pool concentrations of subvented leases (with low financing charges) that will have a negative impact on yield, in which case, reserve accounts funded at deal inception, may be used to cover shortfalls or synthetic excess spread may be created by discounting the cash flow from such leases at a rate that ensures a positive spread between the lease cash flow and the funding costs of the transaction.

DBRS monitors trends in gross and net excess spread, as well as yield. If a swap is introduced into the deal structure to mitigate interest rate risk, DBRS also monitors the financial strength of the swap provider, and the attendant triggers to such a structural features.

Credit enhancement may come in the form of subordination, over-collateralisation, reserve accounts and excess spread (or some combination of these). Credit enhancement is monitored both in terms of the level required by deal documentation, as well as its sufficiency to cover losses in respect of the multiples DBRS uses in the rating process. However the final determination of a rating reflects the confluence of all key qualitative and quantitative analytical considerations.



### *Arrearage Rates*

Trends in arrearage rates may be used to predict future loss trends. Increasing overall delinquencies, roll rates that indicate a decreased number of “cures” or the build-up of loans seriously in arrears may be attributable to weakening macroeconomic conditions but could also be indicative of servicing issues. Either may have an impact on future pool performance and must be taken into consideration when evaluating a transaction. DBRS monitors trends in arrearage rates in terms of monthly change as well as changes over three and six month periods.

### *Financial Condition of Key Entities*

The financial condition of corporate entities such as the servicer or counterparties, such as the issuer account bank or swap provider is important to the structure of the deal. Not only can the insolvency of a servicer create issues with respect to collections and other servicing functions, but it may also create funds commingling issues that could affect timely remittances to investors. Accordingly, DBRS incorporates a financial review of relevant parties in its periodic evaluation of a transaction. This entails a review of the company’s public rating or internal assessment as assigned and maintained by DBRS’ Financial Institutions Group as well as pertinent financial news.

Sovereign risk can affect a securitisation in various ways. Loan repayment behaviour of the borrowing pool may be affected by overall economic conditions in the region as well as by downgrades of key entities in a transaction, especially those that may be owned or partially owned by the state. Sovereign risks in a transaction are monitored through a combination of reviewing DBRS’ public rating or internal assessment of the sovereign entity as well as keeping abreast of news that affects the sovereign’s financial stability.

### *Triggers*

Triggers are defined in the governing legal documents for each transaction. Triggers are often tied to pool performance and breaches of triggers may necessitate changes such as increases in required credit enhancement, the posting of collateral or replacement of transaction parties. DBRS tracks compliance with these triggers in each of its periodic reviews, and to the extent data is available, re-calculates certain performance metrics to evaluate compliance.

## **STRESS TESTING**

If the periodic review or exogenous events indicate a rating change may be in order, a more comprehensive analysis is performed to determine if a rating committee is necessary. DBRS utilises its standard stresses in its analysis but applies them to historical performance.

Losses are based upon the base case projections and stressed by the rating multiples discussed earlier. Timing of losses is plotted on loss curves developed for the transaction during the rating process, but may utilise front loaded, back loaded or “belly” curves as performance and exogenous factors warrant. Recoveries for credit and residual losses are lagged in accordance with DBRS methodologies used in rating the transaction, but may be adjusted for exogenous factors.

### *Note:*

Further information about DBRS rating methodology for auto lease securitisations can be found in the following publications available on the DBRS website:

“Rating European Consumer Asset-Backed Securitisations”

“Legal Criteria for European Structured Finance Transactions” (contains counterparty criteria)



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## Auto Wholesale (“Dealer Floor Plan Loans”)

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The purpose of this section is to set forth the surveillance methodology and process DBRS utilises for European automobile wholesale ABS (also called “dealer floor plan” securitisations). Included is a discussion of the key credit factors DBRS examines and how they are analysed.

### OVERVIEW

The assets in auto wholesale loan securitisations are revolving lines of credit that have been extended to auto dealerships in order to finance their inventory at wholesale rates. When an auto is sold by the dealership, the warehouse loan is repaid, and a new loan is usually taken out to purchase another auto for the dealership’s inventory. The loans may be extended by captive or independent finance companies. Often, captive finance companies that are subsidiaries of auto manufacturers are the lenders as they can provide attractive incentive rates to dealers.

The data monitored by DBRS reflects both the inherent performance characteristics of the collateral and the structure of the deal.

### PERFORMANCE METRICS

Trend analysis of certain performance metrics allows for a more accurate assessment of developments in a transaction’s credit profile. While reporting requirements and data availability may vary between issuers, DBRS endeavours to monitor the following performance metrics to develop a more comprehensive picture of a transaction’s performance. Some of the key vectors include default and loss rates, credit enhancement levels, portfolio turnover and asset composition. These vectors along with event driven metrics such as transaction triggers and counterparty ratings are reviewed using a combination of trend and event analysis. Most performance metrics are typically monitored as rolling three month averages to filter seasonality from the trend lines, though significant changes in monthly performance are also noted.

#### *Default & Loss Rates*

Net losses are a function of default frequency and severity of loss upon disposition of the asset. Monthly and three month averages are tracked for both default and loss rates. Developing trends, in either component, that are projected to place performance outside of DBRS original expectations may result in a re-evaluation of a deal’s current rating.

#### *Credit Enhancement*

Credit enhancement may come in the form of subordination, over-collateralisation, reserve accounts and excess spread (or typically, a combination of these). Credit enhancement is monitored both in terms of the level required by deal documentation and its sufficiency to cover losses projected by DBRS. Excess spread, a component of credit enhancement is monitored both for its sufficiency to protect against loss, and as a bellwether of early trends in yield or index compression. In its evaluation, DBRS monitors the components that comprise excess spread on the basis of monthly changes as well as changes over three month and six month periods to identify trends.

#### *Portfolio Turnover (Monthly Payment Rates, Repurchase Rates, Loan Aging)*

Repayment rates are the key determinant in how quickly investors are repaid in a rapid amortisation scenario, thus either extending or reducing the amount of time investors may be exposed to asset deterioration. Additionally, repayment rates may be used as a proactive indicator of deal stress. Slow repayment speeds that are not attributable to seasonality may be indicative of a lack of demand for the equipment and signal a forthcoming increase in defaults. Slow repayment rates may also be a sign that equipment is being sold “out of trust” (i.e. the proceeds from sale of the equipment are not being used to repay the inventory loan) which may indicate issues in the management of the program or, in a worst case scenario, fraud. In some jurisdictions, additional lots are used to “warehouse” autos when dealers do not have the space necessary to keep their full inventory on site. In these jurisdictions the owner of the “ware-



house lot” may have rights to dispose of the cars if the rental fee is unpaid, thus increasing the risk of vehicles sold out of trust. While deals have trigger events tied to minimum repayment rates, in favorable economic conditions, the average repayment rate of many transactions is well above that trigger level. DBRS monitors trends in repayment rates in order to predict asset deterioration before trigger levels are breached by examining changes in repayment rates over monthly, three month and six month periods.

Purchase rates are the measurement of how quickly the pool is being replenished and are important in maintaining the proper ratio of assets to liabilities. A reduction in purchase rates may indicate problems with demand for the equipment or financial problems at the dealer level. DBRS monitors changes in purchase rates over monthly, three month and six month periods for trends.

Portfolio aging, which is a function of repayment rates, often serves as an early warning of demand weakness, and due to the depreciating nature of the collateral, presents the potential for higher loss severities in the event of a default. DBRS compares aging buckets over the three most recent reporting periods to identify trends that may indicate a change in performance.

### *Financial Condition of Key Entities*

The financial condition of corporate entities such as the servicer or counterparties, the issuer account bank or swap provider is important to the structure of the deal. Not only can the insolvency of a servicer create issues with respect to collections and other servicing functions, but it may also create funds commingling issues that could affect timely remittances to investors. In addition, auto wholesale securitisations inherently have significant exposure to manufacturers and/or financing companies that represent meaningful concentrations in the pool. The insolvency of such an entity, depending on the type of insolvency, may have a significant impact on losses, the timely payment of amounts due investors and various performance metrics such as payment rates.

In this scenario, in addition to issues presented by servicing disruption, DBRS also expects decreased demand for the equipment (fueled by consumer concerns over ongoing service and maintenance availability) that would likely result in a greater frequency of defaults and suppression of recovery rates. Due to the potential for inadequate servicing of the loans, “out of trust” sales may also increase (especially in jurisdictions where the vehicles are being warehoused on non-dealer lots. While insolvency is typically an early amortisation event in the deal structure, DBRS incorporates a financial review of relevant parties in its periodic evaluation of a transaction. This entails a review of the company’s public rating or internal assessment as assigned and maintained by DBRS’ Financial Institutions Group as well as pertinent financial news.

The effect of sovereign risk on securitisations may vary from the effect of the overall economy of the region on purchasing behaviour of consumers to downgrades of key counterparties that may be owned or partially owned by the state. Sovereign risks in a transaction are monitored through a combination of reviewing DBRS’ public rating or internal assessment of the sovereign entity as well as keeping abreast of news that affects the sovereign’s financial stability.

### *Revolving Periods and Pool Concentrations*

Due to the revolving nature of the deal structure, a pool’s composition may change over time. Transactions are structured with concentration limits on various characteristics such as dealer concentrations, asset type concentrations, or other pertinent risk factors. The monitoring of these concentrations not only provides insight into the management of the floor-plan program (and its compliance with limits in the legal documentation) but can also be utilised in predicting deal stress brought on by exogenous factors.

### *Triggers*

Asset pool performance or events related to the financial condition or performance of certain entities may trigger the early amortisation of a transaction. These early amortisation trigger events typically include a decline in repayment rates below a prescribed level, insolvency of certain key parties to the transaction



such as a manufacturer, draws on credit enhancement, the invalidation or breaches of representations made in the transaction's documents and failure to remit collections on a timely basis. DBRS tracks compliance with these triggers in each of its periodic reviews, and to the extent data is available, re-calculates certain performance metrics to evaluate compliance.

## STRESS TESTING

If the periodic review or exogenous events indicate a rating change may be in order, a more comprehensive analysis is performed to determine if a rating committee is necessary. DBRS Surveillance uses the same methodologies used rating the transaction, but may adjust base case assumptions for performance variables based upon actual performance of the asset pool.

### *Note:*

Further information about DBRS rating methodology for auto wholesale securitisations can be found in the following publications available on the DBRS website.

“Legal Criteria for European Structured Finance Transactions” (contains counterparty criteria)

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## Rental Cars

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The purpose of this section is to set forth the surveillance methodology and process DBRS utilises for European rental car ABS. Included is a discussion of the analytical process and key credit factors DBRS examines.

## OVERVIEW

In a rental car securitisation, a special purpose entity (“SPE”), typically managed by a rental company under an administration agreement, acquires cars from an auto manufacturer. The purchase agreement for the vehicles may also have a repurchase option whereby the manufacturer is obligated to buy the vehicles back from the SPE at a specified point in time. These vehicles are usually termed “program” vehicles. The SPE may also acquire vehicles that are not subject to repurchase. Vehicles not subject to a repurchase are termed “non-program” vehicles. The SPE then leases the vehicles it has acquired to a rental car company that in turn makes periodic lease payments to the SPE for use of the vehicles. The SPE uses the lease payments from the rental company, the proceeds of the manufacturers’ repurchases and proceeds from the sale of non-program vehicles to repay investors.

Accordingly, there are three variables that may have an impact on the performance of rental car ABS: 1) the financial condition and quality of the rental car company as servicer/operator of the fleet and as lessee in the transaction, 2) the financial condition of the vehicle manufacturers in the transaction; and 3) the residual values of the vehicles in the transaction.

Triggers related to the rental car company’s financial condition and performance, vehicle manufacturer financial condition and the residual value of vehicles are usually contained within the structure of a typical rental car securitisation. The breach of a trigger may result in a variety of events ranging from early amortisation (if a revolving structure is used) to creating a repurchase obligation of collateral.

## PERFORMANCE METRICS

Trend analysis of certain performance metrics allows for a more accurate assessment of developments in a transaction’s credit profile. While reporting requirements and data availability may vary between issuers, DBRS endeavours to monitor residual values, credit enhancement levels and pool concentrations. These vectors along with event driven metrics such as transaction triggers and counterparty ratings are reviewed using a combination of trend and event analysis, and provide a more comprehensive picture of a transaction’s performance



### *Residual Value of Vehicles*

Rental car securitisations are exposed to the residual values of non-program vehicles as well as of vehicles for which the manufacturer is unwilling or unable to honour its repurchase agreement. In those instances, the value of those vehicles is realised through a sale in the used car market. The lease payments made by the rental car company are designed to cover the depreciation of the vehicles. To the extent the vehicles do not depreciate in line with expectations, gains or losses are realised on their sale.

DBRS monitors applicable marked-to-market and measurement triggers each month and tracks the performance of these metrics over three and six month periods in order to evaluate potential trends that may influence future performance.

### *Credit Enhancement*

Credit enhancement levels in rental car securitisations may be dynamic and based upon changes in the composition of the collateral and in the ratings of the vehicle manufacturers. Credit enhancement may come in the form of a combination of subordination, overcollateralisation, letters of credit, cash and/or a surety bond. A portion of the credit enhancement may be in liquid form in order to cover the payment of interest and expenses during a bankruptcy scenario of the rental car company, where lease payments may be interrupted.

Credit enhancement is monitored both in terms of the level required by the transaction legal documentation and sufficiency against DBRS loss multiples used in rating the transaction.

### *Pool Concentrations*

To control the potential for change in asset pool composition from original expectations, transactions typically have concentration limits. Because of the impact that a manufacturer bankruptcy may have on a rental car transaction, limits on the amount of vehicles allowed from each manufacturer may be incorporated into the transaction's structure. Similarly, the mix of program and non-program vehicles in the pool may have significant impact on the residual values realised upon vehicle disposition, as non-program vehicles will need to be sold rather than be repurchased.

DBRS monitors compliance with applicable requirements for a transaction pool's mix and compares them to stresses and assumptions used in deriving the transaction's current rating.

### *Financial Condition of Key Entities*

The financial condition of the rental car company and the vehicle manufacturers are key to the performance of the transaction. The condition of other parties in the structure, such as a swap counterparty or letter of credit, may also have an impact on the transaction's performance. While triggers relating to minimum credit ratings or solvency are standard for these transactions and monitored with the same frequency as investor remittances, DBRS also incorporates a financial review of relevant parties in its periodic evaluation of a transaction. This entails a review of the company's credit rating, internal assessment as assigned and maintained by DBRS' Financial Institutions group, as well as pertinent financial news.

Sovereign risk can affect these securitisations, from the effect on the overall economy of the region on consumer behaviour to downgrades of key entities such as state-owned counterparties in the transaction structure. Sovereign risks in a transaction are monitored through a combination of reviewing DBRS' public rating or internal assessment of the sovereign entity as well as keeping abreast of news that affects the sovereign's financial stability.

### *Triggers / Events of Default*

Triggers in these types of deals may include failure to maintain minimum levels of collateral, the failure of the transaction to pay interest or principal when due, the occurrence of a lease agreement default or a failure to maintain the required levels of credit enhancement or liquidity as dictated by the transaction's legal documents.



Events of lease default usually relate to the rental company's financial condition or the performance of its duties under the lease agreement. These events generally include the rental car company's failure to pay scheduled payments on any lease, its voluntary or involuntary bankruptcy, its failure to comply with the terms of the lease agreement or a material breach of a representation or warranty it has made in the transaction's documentation.

Events of default pertaining to the manufacturers that supply vehicles are also included in the structure of the typical rental car securitisation. The primary event of default is usually related to the bankruptcy of a manufacturer. The occurrence of a manufacturer default may require the issuer to either repurchase/remove vehicles covered under repurchase agreements with the bankrupt manufacturer or supply additional credit enhancement to cover the potential default of the manufacturer in its repurchase obligation.

DBRS tracks compliance with these triggers in each of its periodic reviews, and to the extent data is available, re-calculates certain performance metrics to evaluate compliance.

## STRESS TESTING

If the periodic review or exogenous events indicate a rating change may be in order, a more comprehensive analysis is performed to determine if a rating committee is necessary. Generally, the standard stresses used by DBRS in rating a transaction are used in the evaluation but applied to actual pool and manufacturer concentrations. Levels of stress may be modified when extraordinary events indicate such change is prudent.

### *Note:*

Further information about DBRS rating methodology for rental car securitisations can be found in the following publications available on the DBRS website:

“Legal Criteria for European Structured Finance Transactions” (contains counterparty criteria)

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## Credit Cards

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The purpose of this section is to set forth the surveillance methodology and process DBRS utilises for European credit card ABS. Included is a discussion of the analytical process and of key credit factors DBRS examines.

### OVERVIEW

The assets in credit card securitisations are the receivables generated from cardholder usage. Cardholders may pay their principal balance in full each month (i.e. “convenience users”) or carry a balance from month to month (i.e. “revolvers”). Due to the potentially short life of the receivables, credit card securitisations often utilise a structure that has a revolving period followed by an amortisation period. The breach of triggers related to certain performance metrics, the failure of the sponsor to comply with its obligations, or the failure of the trust to meet its payment obligations will typically cause an early amortisation of such transactions.

However, there can be significant variations on that structure that will have an impact on how investors are paid in the event of an early amortisation. Credit card securitisation sponsors may utilise a master trust structure that allows a sponsor to issue multiple series and collateralise them with a single receivables pool. Methods for allocating cash among series can differ between master trusts, and in the event of an early amortisation, may change within the same master trust.



## PERFORMANCE METRICS

Trend analysis of certain performance metrics allows for a more accurate assessment of developments in a transaction's credit profile. While reporting requirements and data availability may vary between issuers, DBRS endeavours to monitor performance metrics such as chargeoff rates, arrearage rates, credit enhancement and excess spread levels, payment rates, yield and purchase rates. Trends in these metrics along with event driven metrics such as transaction triggers and counterparty ratings are reviewed to develop a more comprehensive picture of a transaction's performance.

### *Charge-Offs / Arrears*

Charge-offs are loans written off as uncollectible by the issuing entity, net of recoveries. Increased charge-off activity is typically the result of macroeconomic conditions, but may also be a sign of problems in the servicing of the accounts.

Arrearage rates are early indicators of deterioration or improvement in portfolio performance, though seasonal variations must be taken into account when analysing changes. Increasing rates of seriously delinquent accounts can signal future stress on a transaction resulting from weakening macroeconomic conditions or other changes in cardholder behaviour brought on by exogenous events.

DBRS monitors charge-off rates on a gross (i.e. before recovery) and net basis using monthly changes in activity as well as three month and six month moving averages. Levels of cumulative charge-offs are monitored and compared with the expectations and stresses used in deriving the transaction's original rating. Delinquency rates are monitored using monthly changes in activity as well as changes over three month and six month periods.

### *Credit Enhancement / Excess Spread*

Credit enhancement typically is in the form of subordination, over-collateralisation, cash collateral accounts and excess spread (or some combination of these). Credit enhancement is monitored both in terms of the level required by transaction documentation as well as its sufficiency to cover projected losses with respect to the multiple ranges employed by DBRS when rating the transaction.

Gross excess spread is the difference between the yield on the asset pool and the cost of funding the securities (including administration fees such as servicing, etc). Excess spread absorbs losses each month, before other forms or credit enhancement are used. After losses have been absorbed, the amount of excess spread available, if any, is "net excess spread", and may be used to replenish credit enhancement that has been reduced from losses in prior months. If not used to replenish credit enhancement, it may be released from the deal, and will not be subject to recapture. DBRS monitors trends in excess spread by examining monthly changes as well as three month and six month moving averages.

### *Payment Rate*

Payment rate is calculated by dividing the total monthly collections received by the beginning period receivables balance. It is an important metric in that it determines the length of time needed to repay noteholders during either controlled accumulation or early amortisation periods. In the case of an early amortisation, a low payment rate will result in noteholders being exposed to risk for a longer period of time.

Payment rates are a function of the percentage of "convenience" users (i.e. borrowers who pay their full balance each billing cycle) in the pool as well as of delinquencies and charge-offs. A declining trend in a payment rate that is not attributable to seasonal fluctuations may be a sign of a change in payment policy by the issuer, or in payment behaviour by obligors. This trend may be a sign of a weakening obligor base that may result in increased delinquency and default activity.



Trends in payment rate are monitored using changes in monthly as well as in three month and six month moving averages. These rates are compared to expectations and stress cases used in the transaction's original rating analysis.

### *Yield*

The yield on a credit card portfolio is comprised of interest charges, annual fees, late payment fees, over-limit fees, and interchange. Occasionally, recoveries from charged-off accounts are included, depending on the transaction's governing documents. DBRS tracks the individual components of yield separately to the extent data is available. This allows DBRS to assess trends at a more detailed level, and make more precise adjustments to yield in cash flow modeling.

Credit cards have interest rates that are based on a fixed or floating rate, plus a spread or "premium". As the premium is based on the credit quality of the obligor, portfolios of lower credit quality accounts typically have higher yields than portfolios with accounts comprised of obligors with stronger credit profiles. The portfolio's composition with respect to "convenience" users and "revolvers" also have an impact on yield as "convenience" users do not generate interest income for the portfolio, only interchange and potentially, annual fee income.

DBRS monitors trends in yield by observing changes in monthly as well as three month and six month moving average behaviours. Exogenous factors such as regulatory changes are also monitored for their effect on credit card yield.

### *Purchase Rate*

Purchase rate is the speed at which new receivables are created to offset the repayment or charge-off of older receivables. A trust's pool balance will increase to the extent that the purchase rate exceeds the combined payment and charge-off rates, and decline when the opposite occurs.

DBRS monitors purchase rate activity using monthly changes as well as three month and six month moving averages to compare a transaction's actual performance with the expectations and stresses used in rating the transaction.

### *Financial Condition of Sponsor*

The insolvency of a sponsor may result in servicing disruptions and, potentially, changes in cardholder behaviour that may significantly change the credit profile of a portfolio. As a result, DBRS incorporates a financial review of relevant parties in its periodic evaluation of a transaction. This entails a review of the company's credit rating, internal assessment as assigned and maintained by DBRS' Financial Institutions group, as well as pertinent financial news.

Sovereign risk can affect these transactions not only through economically driven consumer behaviour changes and their attendant effect on pool performance, but also through potential downgrades of key entities such as state-owned counterparties in the transaction structure. Sovereign risks in a transaction are monitored through a combination of reviewing DBRS' public rating or internal assessment of the sovereign entity as well as keeping abreast of news that affects the sovereign's financial stability.

### *Triggers*

Events related to asset pool performance or events involving the program sponsor may trigger an early amortisation of a transaction. These early amortisation trigger events typically include a decline of payment rates or excess spread below a prescribed level, an insolvency of key parties to the transaction, failure of a sponsor to maintain its pro-rata interest in the receivables pool (sometimes referred to as the "seller's interest"), or a breach in the performance of the sponsor with regard to representations or warranties it has made in the transaction's documents. DBRS tracks compliance with these triggers in each of its periodic reviews, and to the extent data is available, recalculates certain performance metrics to ensure compliance.



## STRESS TESTING

If the periodic review or exogenous events indicate a rating change may be in order, a more comprehensive analysis is performed to determine if a rating committee is necessary. Generally, the standard stresses used by DBRS in rating a transaction are used in the evaluation but applied to actual pool and manufacturer concentrations. Levels of stress may be modified when extraordinary events indicate such change is prudent.

### *Note:*

Further information about DBRS rating methodology for credit card securitisations can be found in the following publications available on the DBRS website:

“Rating European Consumer Asset-Backed Securitizations”

“Legal Criteria for European Structured Finance Transactions” (contains counterparty criteria)

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## Equipment Loans and Leases

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The purpose of this section is to set forth the surveillance methodology and process DBRS utilises for European equipment loan and lease ABS. Included is a discussion of the analytical process and key credit factors DBRS examines.

### OVERVIEW

Equipment-type and lease type are significant factors that will affect the performance of a transaction. Equipment finance can generally be categorised as loans or operating leases. Under the terms of a loan, the borrower makes loan payments that cover the value and useful life of the equipment. Under an operating lease, the lessor retains ownership of the leased property, along with the risks associated with owning the equipment such as its residual value at the end of the lease term.

Equipment type plays an important factor in performance. Certain types of equipment tend to have better loss performance than others due to less frequency of default, lower loss severities upon liquidation of the equipment or a combination of the two. Loss severities, residual values and to some degree prepayment activity can be greatly affected by the obsolescence factor, such as on computer equipment.

### PERFORMANCE METRICS

Trend analysis of certain performance metrics allows for a more accurate assessment of developments in a transaction’s credit profile. While data availability may vary within jurisdictions and between issuers, DBRS endeavours to monitor performance vectors such as charge off and recovery rates, credit enhancement levels, arrearage and repossession inventory levels. These vectors, along with event driven metrics such as transaction triggers and counterparty ratings are reviewed allow for the development of a comprehensive picture of a transaction’s credit profile.

A key performance vector evaluated is that for expected cumulative net losses (“CNLs”). Expected CNLs are measured against available credit enhancement to determine if the transaction is still within acceptable loss coverage ratios for its current rating.

#### *Charge-Offs / Recovery Rates*

Increasing trends in charge-off activity may be attributed to a variety of causes ranging from macro-economic conditions to problems at the servicer level. Typically triggers tied to charge-offs are used to increase required credit enhancement levels. DBRS monitors charge-off activity for trigger compliance and to derive vectors for projecting future performance. Trends in charge-off activity are monitored by using changes in monthly activity, as well as over three month and six month periods. Cumulative charge-



offs are measured against expectations and stresses used in the original rating of the transaction.

Recovery rates reduce losses the credit enhancement must absorb. Recovery rates on equipment can be affected by various factors such as macroeconomic conditions, servicer effectiveness in liquidating the equipment, as well as the type of equipment being liquidated. Factors, such as product obsolescence for some computer equipment, may reduce recovery rates in seasoned securitisations involving that type of equipment. Other types of equipment, such as certain medical equipment, may retain their value and result in much higher recoveries. DBRS monitors trends in recovery rates by examining changes over monthly, three month and six month periods. These trends are compared to assumptions used in the most recent rating of the transaction and used to generate vectors for projecting future performance.

### ***Projecting Expected Cumulative Net Losses (“CNLs”)***

DBRS uses two methods for projecting the expected CNLs of pools; the pool factor method and the loss curve method.

#### ***Pool Factor Method***

The pool factor method assumes that future losses will continue at a rate correlated to the amortisation of the pool. To calculate remaining losses using this method, current period cumulative net losses are divided by one minus the current pool factor to arrive at projected lifetime losses. To arrive at the CNLs remaining in the transaction, current losses are subtracted from the projected lifetime losses calculated in the first step. For example, if current CNLs equal 3% and the pool factor is 60%, lifetime CNLs are projected to be  $0.03 \div (1.00 - 0.60)$ , or 7.50%. The losses remaining in the transaction would then be 7.5% - 2.0%, or 5.5%.

#### ***Loss Curve Method***

This method assumes that losses will be correlated with the timing of loss curves developed by DBRS in rating the transaction. To calculate CNLs using this method, current CNLs are first adjusted to include losses yet to be realised from loans in arrears. This loss pipeline is calculated using historical delinquency roll rates and loss severity, and adjusted to reflect its percentage of the transaction pool's original principal balance. The transaction's seasoning at the end of the pipeline is then plotted on the cumulative loss curve to ascertain the percentage of lifetime losses that will have been experienced at that point in time. To project lifetime CNLs for the transaction, the current adjusted CNLs are then divided by the percentage obtained from plotting the transaction's seasoning on the cumulative loss curve. In the final step, the current CNLs are subtracted from projected lifetime CNLs to arrive at the losses remaining. For example, if current cumulative losses are 4.0%, another 0.5% of losses are in the delinquency pipeline and the deal is seasoned 36 months, the CNL would be adjusted to 4.5% (4.0% + 0.5%) and the cumulative loss curve would be consulted to see what percentage of losses are expected to have occurred by month 42 (36 + 6). If the curve assumes 80% of lifetime cumulative net losses will occur by month 42, the lifetime CNLs would be  $.045 \div .800$ , or 5.625%. The remaining unrealised losses are then 1.625%, or 5.625% - 4.000% (not minus 4.5% as the 0.5% pipeline has not yet been realised).

### ***Credit Enhancement***

Credit enhancement typically is in the form of subordination, over-collateralisation, reserve accounts and excess spread (or some combination of these). Excess spread is built into the deals at inception by the discount rate used to value the receivables pool. Credit enhancement is monitored both in terms of the level required by transaction documentation as well as its sufficiency to cover projected losses with respect to the multiple ranges employed by DBRS when rating the transaction.

### ***Arrears Rates/ Repossession Inventory***

Trends in arrearage rates can be used to predict future loss activity. Rising trends in delinquency rates may be a sign of issues with the servicing of the loans and presage future stress in the transaction. Lease securitisation structures may incorporate triggers tied to levels of leases in arrears to increase credit enhancement. DBRS monitors compliance with these triggers and analyses delinquency trends by examin-



ing changes in monthly as well as over three month and six month periods.

Repossession inventory represents equipment that has been repossessed, but not yet liquidated/remarketed. As transactions typically require a lease to be charged off at a certain level of delinquency, the equipment in repossession inventory may have been fully charged off. In those instances, they represent unrealised recoveries. Additionally, a growing repossession inventory may be an early warning of future stress such as weak demand for the equipment or servicer problems in the disposition of the assets.

#### *Financial Condition of Sponsor/Servicer*

Insolvency is of particular concern, especially for small financing companies with relatively small capital bases. Their insolvency could result in significant disruptions in servicing and collections activities, and alter the performance of a portfolio. Additionally, a small capital base may inhibit a sponsor's compliance with repurchase obligations arising from ineligible collateral, or their ability to repurchase or replace impaired leases from the pool.

DBRS incorporates a financial review of relevant parties in its periodic evaluation of a transaction. This entails a review of the company's credit rating, internal assessment as assigned and maintained by DBRS' Financial Institutions group, as well as pertinent financial news.

Sovereign risk can affect these transactions not only through lessee repayment behaviour and the performance of the pool as a result of economic conditions, but also through downgrades of key entities such as state-owned counterparties that may be in the transaction structure. Sovereign risks in a transaction are monitored through a combination of reviewing DBRS' public rating or internal assessment of the sovereign entity as well as keeping abreast of news that affects the sovereign's financial stability.

#### *Triggers*

Trigger breaches may initiate changes in a transaction ranging from servicer replacement to increases in required levels of credit enhancement or shifts in the distribution priorities under the transaction's cash waterfall provisions. Triggers events are typically tied to delinquency and loss performance, a breach of representations and warranties by the sponsor, and may include financial covenants for the sponsor such as tangible net worth or profitability measurements. DBRS monitors compliance with these triggers in each of its periodic reviews, and to the extent data is available, re-calculates certain performance metrics to ensure compliance.

## **STRESS TESTING**

If the periodic review or exogenous events indicate a rating change may be in order, a more comprehensive analysis is performed to determine if a rating committee is necessary. Generally, the standard stresses used by DBRS in rating a transaction are used in the evaluation but applied to actual pool and manufacturer concentrations. Levels of stress and types of loss curves used may be modified when extraordinary events indicate such change is prudent.

#### *Note:*

Further information about DBRS rating methodology for equipment lease securitisation can be found in the following articles available on the DBRS website:

“Legal Criteria for European Structured Finance Transactions” (contains counterparty criteria)

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**DBRS Ratings Limited**  
25 Copthall Avenue  
London, EC2R 7BP  
United Kingdom  
+44 (0)20 3137 9511