

Methodology

*DBRS Criteria for Canadian  
Credit Card Securitization*

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*Insight beyond the rating.*

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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's extensive coverage of securitizations 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 organized, Web-based, up-to-the-minute information. We remain committed to continuously refining our expertise in the analysis of credit quality and are dedicated to maintaining objective and credible opinions within the global financial marketplace.



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# DBRS Criteria for Canadian Credit Card Securitization

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## I. Introduction

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DBRS applies a qualitative and quantitative approach to rating debt backed by credit card receivables. The approach includes an assessment of the quality of the asset seller, which DBRS considers may affect the likelihood that investors will be fully repaid according to the terms in which they invested. DBRS believes that credit card receivable sellers typically maintain a strong vested interest in maintaining the credit quality of the receivables backing the rated debts. DBRS understands that many sellers expend considerable resources to actively manage their credit card accounts and corresponding receivables in order to promote consistent and robust levels of profitability. This active management includes originating receivables amidst intense competition, reviewing and modifying credit limits, adjusting a credit card's interest rate, in addition to performing collection activities to minimize credit losses. Additionally, these entities' interests are largely aligned with investors' interests, as the sellers also hold various investments in the credit card receivables, such as through their co-ownership interests, occasionally retained subordinated notes, as well as the receivables that are not sold to a trust, but remain on the entity's balance sheet.

Other key analytical considerations evaluated by DBRS include:

- Quality of Originations and Underwriting
- Quality of Servicing Capabilities
- Performance of Credit Card Receivables
- Capital Structure, Proposed Ratings and Credit Enhancement
- Legal Structure and Opinions
- Cash Flow Analysis

In connection with DBRS's analysis of the aforementioned analytical considerations, DBRS tests the viability of each transaction's proposed capital structure and credit enhancement levels, at each proposed rating level, through the use of our proprietary credit card cash flow model. Scenarios are tested for each class of debt, with each higher priority class subjected to successively more severe assumptions. The bases of the cash flow model include collateral performance consisting of yield, payment rate and loss rates, proposed capital structure, priority of payments, trust expenses and interest rate and basis risk. The last two assumptions respectively reflect (a) the mismatch between the timing of the interest rate resets for the credit card receivables and the note coupon rates, and (b) the difference between the interest rate indices used to determine card holder interest (for example, Prime Rate) finance charge rates and the floating coupon rates (for example, Canadian Dollar Offered Rate or London Interbank Offered Rate).

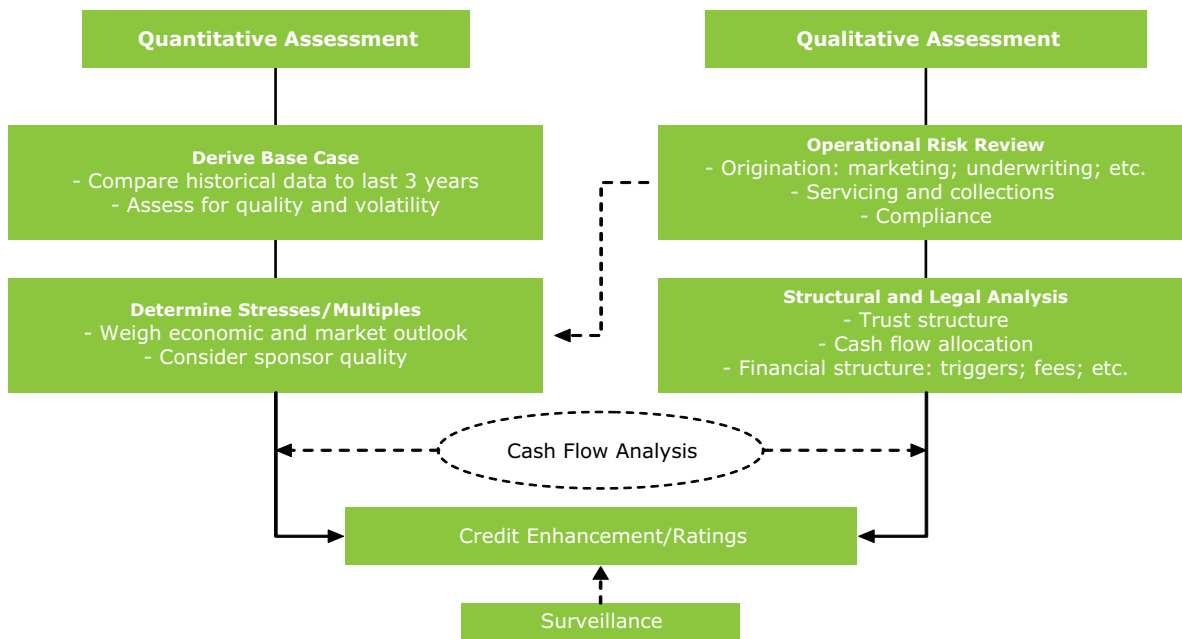
From a transaction structure perspective, credit card securitizations incorporate the concept of an early amortization event, which when triggered, accelerates the end of the revolving period and the onset of the amortization period. Early amortization may be triggered due to declining performance of the credit card receivables, the insolvency of the seller or other seller-related issues. From a modeling perspective, DBRS assumes a transaction enters an early amortization period for all rating levels due to a breach of a performance trigger, which signals a decline in the performance of the collateral. Depending on the variables in the stress scenarios, the breach of a performance trigger could occur between months eight and ten for the AAA rating, and later for the lower rating categories. For certain card issuers with sizeable and what DBRS considers well-managed portfolios of credit card receivables, DBRS believes that the likelihood of an early amortization event occurring shortly after the note issuance is remote. As a result, DBRS may stress the portfolio performance at a later date over a longer stressed period in the cash flow analysis for the evaluation of the subordinate notes.

Each rating assigned by DBRS represents an opinion regarding the likelihood of the timely payment of interest and principal repayment by the legal final maturity date, which range from 18 to 36 months after an expected final payment date, depending on the notes.



DBRS typically assigns provisional ratings prior to the transaction's closing date. Provisional ratings signify its opinion regarding the likelihood of repayment prior to a review of the final details of a proposed transaction. After a transaction closes, DBRS monitors the performance of each outstanding transaction to ensure that DBRS ratings are as prospective as possible and reflect the relevant information received by DBRS relating to that particular transaction. The maintenance of each rating is predicated upon the timely receipt of performance information and data from the seller. The performance information and data for each outstanding transaction is reviewed by DBRS analysts to identify variations between actual and expected performance levels (the latter as assumed by DBRS) of each transaction. DBRS also monitors changes in macroeconomic conditions and the associated effects on the consumer, credit card industry dynamics and other exogenous events that may impact the credit quality of outstanding ratings. DBRS provides monthly surveillance information for all public ratings on its website at [www.dbrs.com](http://www.dbrs.com).

### DBRS Rating Process Schematic



## II. Overview of Credit Cards

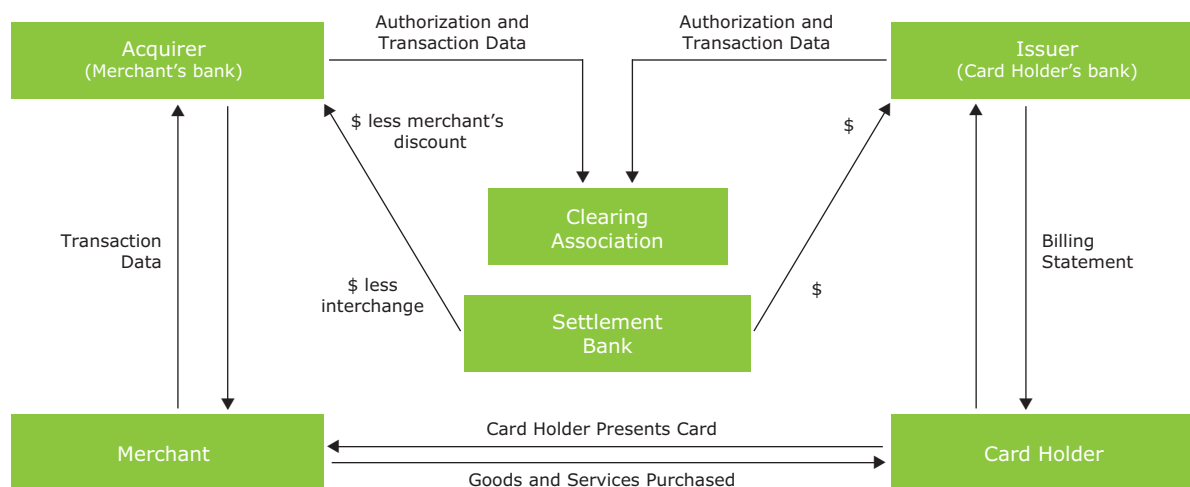
### A. ORIGINATION OF CREDIT CARD RECEIVABLES, PROCESSING AND INTERCHANGE

Credit cards are unsecured revolving lines of credit. Credit card receivables are generated when cardholders use their cards to finance the purchase of goods and services or make cash advances. Cardholders are typically only required to make a minimum monthly payment on the outstanding balance in order to remain in good standing. However, the entire outstanding amount is contractually payable on demand.

In Canada, there are two main associations that process credit card transactions: Visa and MasterCard. American Express is not an association, as it issues an American Express credit card directly to cardholders and maintains its own clearing network. Credit card issuers have a membership agreement with the association which outlines the roles and responsibilities of each party in the transaction settlement process. Diagram 1 below is a simplified illustration of the parties involved in a credit card transaction.

Interchange fees are generated when credit card issuers discount the amount that is remitted back to the merchant for goods and services charged to the cardholder's credit card. The interchange fee is generally shared between the merchant's bank, the card issuer bank (if not the same), the card association and the settlement bank. Rates of interchange fees vary according to the types of credit cards and their associated risks and rewards. For example, if an individual charges a \$100 item on his credit card, a merchant will normally receive \$98 after the \$2 (2%) interchange fee is deducted. The \$2 is then split between the card association, the settlement bank, the merchant's bank and the card issuer. From a revenue perspective, the credit card issuer's portion of the interchange fee serves as compensation for assuming credit risk and for funding transactions up to the point at which the cardholder repays the transaction amount owing, or when interest can be charged on unpaid balances (and becomes payable to the credit card issuer). For the settlement bank, the interchange fee compensates it for processing and settling transactions.

**Figure 1: Credit Card Transaction Processing**





## **B. CREDIT UNDERWRITING AND ACCOUNT MANAGEMENT**

The competition in the Canadian credit card industry has made account retention and new account acquisition a key component of a successful credit card operation. Marketing for new accounts has evolved from a simple process of in-branch brochure applications for existing bank customers, to a highly sophisticated operation that selectively pre-authorizes limits and places card applications directly into households of potential customers. Increased penetration of these acquisition strategies into nationwide markets has also resulted in profitable cross-selling opportunities for many card issuers.

A card issuer must determine its appetite for risk when constructing its marketing and underwriting approach. DBRS reviews the various marketing and acquisition channels used by the particular credit card issuers and their successes. DBRS considers whether the credit card issuer's policies and procedures include other important functional areas in the underwriting process (such as risk management, operations, information systems, legal and compliance). For instance, many card issuers now use behavioural scoring models and other analytics to design product offerings for specific consumer groups in order to optimize and/or monitor cardholders' purchasing and payment patterns. Issuers who can successfully target creditworthy customers with appropriate risk pricing can usually generate both high and stable levels of profitability.

Credit card issuers use various tools to manage the credit risk in their portfolios. These tools include closing accounts, pre-emptively lowering the limit of the credit line, changing the financing rate charged, as well as charging various fees associated with the transactions. Credit card issuers must maintain and invest in their infrastructure in order to evaluate and re-evaluate daily cardholder transaction activity and to manage and investigate (potential) fraudulent activities. The credit card issuer in many ways has a more current understanding of a borrower's creditworthiness, and has greater flexibility to respond to changes in a borrower's profile as they occur than other lenders. Changes in underwriting standards, product mix and geographic concentrations, aggressiveness of account acquisition and adequacy of account management can all impact a portfolio's risk profile. In addition, experienced and competent management and staff are vital components of a successful credit card operation.

## **C. SERVICING**

The efficiency and effectiveness of collection systems have a significant impact on the performance of credit card receivables. Technology plays a crucial role in servicing and can be a major competitive advantage as there are usually millions of accounts to be serviced. Similar to account management, many credit card issuers now use behavioural scoring models (like bankruptcy scores) and other analytics to evaluate delinquent accounts in order to optimize collection efforts. Issuers who can efficiently deploy the resources for collections can reduce the ultimate credit losses.



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## III. Securitization

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Credit card securitizations typically have several core structural features. These features are summarized below and are discussed in more detail in the following paragraphs.

### A. REVIEW OF THE SELLER / SERVICER

An important part of the DBRS ratings process for credit card securitizations is a review of the operations of the seller, which is usually also the initial servicer. Although the entity (the Trust) used in the securitization transaction is bankruptcy remote from the seller, an evaluation of the seller is integral to the sustainability of the securitization as the seller provides critical ongoing services as the (initial) servicer of the receivables. In the event that the seller becomes insolvent, the generation of additional receivables would likely dramatically decline or stop and the ability of the Trust (through a replacement servicer) to collect outstanding receivables could become impaired or uncertain. Therefore, DBRS will assess the quality of a seller's origination platform by examining its underwriting guidelines, compliance with those guidelines, marketing strategies and channels, in addition to a review of its servicing capabilities. Servicing evaluations will be considered in conjunction with the collateral itself and the cash flow analysis for each credit card securitization transaction, and each of these factors will be used to determine final credit enhancement levels.

Generally in Canada, credit card receivables are sold on a fully serviced basis in a securitization transaction, which means no servicing fees are paid to the seller for these services as long as the seller remains the servicer (and this will be explicitly set out in the transaction documents). Instead, the seller typically receives any remaining funds (excess spread) after expenses and payments to the investors are made. Investors rely on the efficient processing of transactions and the timely collection of payments and disbursement of funds for interest and principal (re)payments. Therefore, DBRS carefully reviews the servicer's servicing capabilities and infrastructure, including investment in technology and any outsourcing arrangement(s).

### B. MASTER TRUST AND ISSUANCE TRUST

Credit card securitizations in Canada typically use a master trust structure. Unlike a discrete trust structure where there is a separate collateral pool associated with each individual series of notes, a master trust structure provides the seller with the ability to issue multiple series of notes out of the same trust, with all the series to be secured by the same collateral pool. This is achieved by conveying a defined pool of accounts to a custodian for the subsequent sale of co-ownership interests in the conveyed pool. Separate co-ownership interests are established for each series of notes issued by the trust, with the seller retaining a co-ownership interest in the portion of the receivables that are not offered to the investors. Thus, there are at least two co-ownership interests in a pool of credit card receivables: the seller's interest and the trust's interest. The seller's interest ranks *pari passu* with the trust's interest (the latter is represented by the notes issued by the trust). Generally, each of the series of notes issued by the trust is cross-collateralized by the same receivables pool held by the custodian on behalf of the trust. A series may amortize on a "vintage" basis or on the occurrence of series specific events, but if an amortization event occurs such as in the situation of deteriorating asset performance, usually the ranking of all series will become *pari passu* in respect of claims on collateral, unless otherwise indicated.

From a funding perspective, the master trust structure provides large financing flexibility, similar to the flexibility available to an issuer in the corporate debt market. Principal and interest received from the receivables can be commingled to service any particular series if necessary. Depending on the account selection criteria, investors can be exposed to the card issuer's entire managed portfolio as opposed to a smaller part of the portfolio, which is the case when discrete pools are used.

In Canada, master trust structures typically issue senior classes and corresponding subordinated classes of notes simultaneously ("vertical classes") in order to achieve desired levels of credit enhancement.

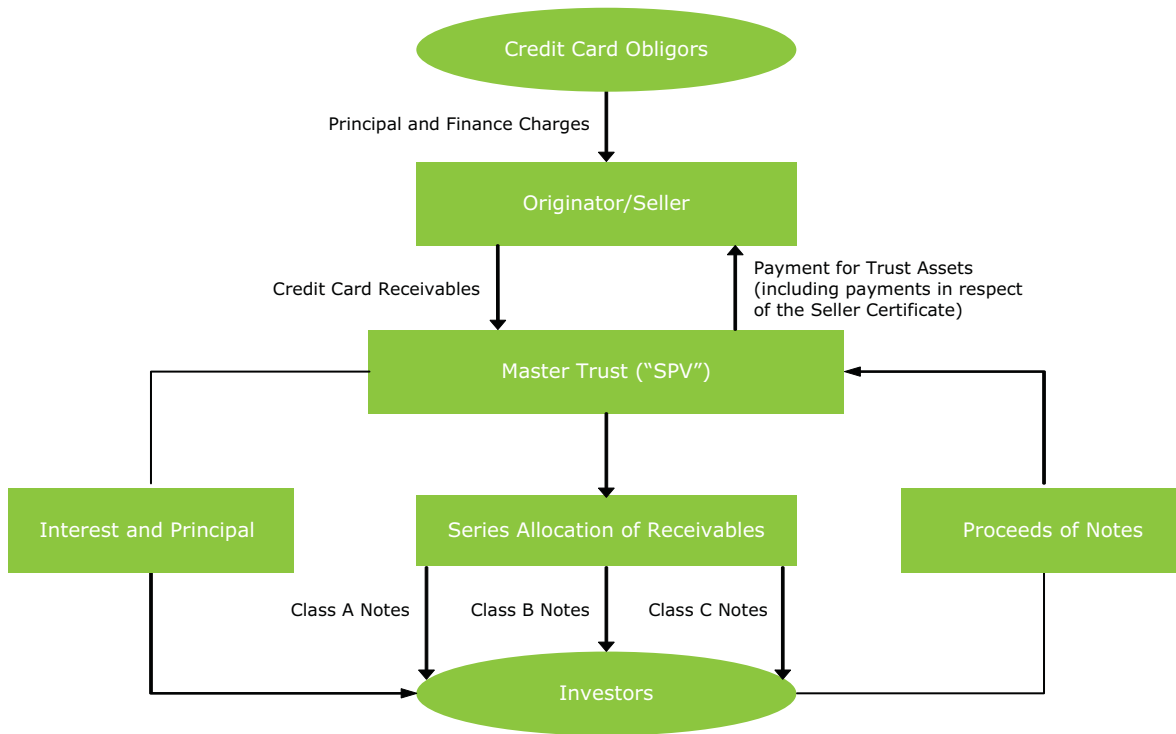


However, the master trust could also allow the issuance of senior or subordinate notes independently at any time, as long as certain issuance conditions are satisfied. This concept is called a “de-linked” structure. Notes issued in de-linked structures could have some significant features that are different from master trusts that issue vertical classes. The first difference is a concept of shared credit enhancement. In a de-linked structure, there is a required level of subordinated notes relative to senior notes outstanding that must be maintained at all time. Therefore, the credit support for all series of senior notes is the same in a de-linked structure while for vertical classes the credit support can be adjusted for each different series.

The second difference is extension risk. Payments on subordinated notes that are maturing will not occur in a de-linked structure unless new subordinated notes are issued or the senior notes also amortize in order to ensure there is adequate support for the remaining senior notes. Consequently, there may be extension risk for the subordinated notes in a de-linked structure. If the de-linked trust cannot issue replacement subordinated notes, the maturing subordinated notes will not be repaid until the senior notes are defeased with cash from principal collections. In comparison, the maturity date of subordinated notes in vertical classes is the same as the senior notes and so is the beginning of the accumulation period.

Diagram 2 below is a schematic representation of a typical master trust structure.

**Diagram 2: Structure of a Credit Card Securitization Transaction**





## C. LEGAL OPINIONS

Unlike mortgage or auto-loan structured finance transactions where a security interest in tangible assets ultimately backs the rated securities, credit-card based transactions are backed by the unsecured obligations of consumers. In the event of a default by the obligor, there are no underlying secured assets that can be liquidated to satisfy the trust's repayment obligations to the noteholders (the only recourse is to the obligor for the defaulted amount).

DBRS requires legal assurances (by way of legal opinions) that the sale of the receivables from the originator to the trust constitutes a "true sale", and that the subsequent grant by the trust of a security interest in the receivables to the indenture trustee (on behalf of the noteholders) has been perfected by the filing of Personal Property Security Act financing statements in all applicable jurisdictions. DBRS reviews legal opinions to determine whether the transfer of the credit card receivables to the trust constitutes a true sale such that the assets of the trust would not be consolidated with those of the seller in the event of the seller's bankruptcy, and also to ensure that the indenture trustee has a first lien, perfected security interest in the purchased assets which secure the trust's obligations to the noteholders.

## D. PRIORITY OF PAYMENTS

The allocation of cash flows generated by the collateral in credit card structures is often more complex than other asset-backed securities transactions. In general, interest on the credit card receivable-backed notes is paid on a priority basis from finance charges collected from the receivables. Interest on subordinated notes can be available to service senior note principal if there is a shortfall of funds, depending on the provisions of the transaction documents. To the extent that interest payments on subordinate notes is not made, due amounts are "carried over" to future periods and paid as funds become available.

Typically, principal collections from the receivables are used to purchase new receivables during the revolving period or are used to pay the amortization of the notes during the amortization period. If there are shortfalls in principal repayment on the notes on an "expected" maturity date, an amortization period will commence and subsequent principal repayments will be made on a priority basis first to the most senior notes. Principal repayments of subordinated notes will be postponed until the senior notes are fully repaid.

See the Cash Flow Allocations section for further details.

## E. SELLER'S INTEREST AND DILUTION

The seller's interest is the difference between the balance of the trust's portion of the receivables and the outstanding trust notes. Generally, credit card securitizations require a minimum amount of seller's interest based on the trust note balance. The minimum seller's interest exists to absorb potential fluctuations in the balance of the trust's portion of receivables. These fluctuations occur due to (1) changes in cardholder account balances due to payments and/or purchases, or (2) reductions in the receivables balance from factors other than defaults or payments, such as merchandise returns, rebate or rewards programs, goodwill adjustment and ineligible receivables (collectively referred to as "Dilution"). The higher the Dilution, the higher the required minimum seller's interest will be. For example, the required seller's interest is typically higher for private label credit card transactions, as merchandise returns/Dilutions are generally higher in these retail card portfolios. In Canada, fraudulent receivables are usually reported as part of the seller's operating expenses, not as Dilution.

The seller's co-ownership interest ranks *pari passu* with the trust's interest in terms of monthly cash flow allocations (see the Cash Flow Allocations section), except for those items described as Dilution above, which are allocated only to the seller's co-ownership interest. When the seller's interest falls below the minimum required level, the seller must provide the trust with additional receivables in an amount that restores the required seller's co-ownership interest level. If the minimum seller's co-ownership interest is not restored or maintained, an early amortization event will be triggered and the notes will begin amortization (see the Early Amortization section).



## F. ACCOUNT SELECTION CRITERIA

Credit card accounts eligible to be included in the pool for securitization depends on the transaction documents; however, they generally need to meet the following eligibility criteria:

- (1) The receivable is in existence, maintained and serviced by the seller;
- (2) The receivable is not written off;
- (3) The obligor is not identified by the servicer as being the subject of any voluntary or involuntary bankruptcy or insolvency proceeding; and
- (4) The obligor has a billing address located in Canada.

Some programs also exclude staff, student and non-Canadian dollar accounts from the securitized receivables.

## G. ADDITION AND REMOVAL OF ACCOUNTS

Each securitization program typically permits the addition and/or removal of certain accounts to and from the trust's pool of receivables, subject to certain criteria. Additional accounts might be added in order to meet the minimum seller's co-ownership interest requirement or to provide for additional issuance of notes. The addition of accounts to the trust's portfolio of assets is usually subject to a cap or limit and may have other conditions that must be satisfied. The addition caps or limits are generally measured over three-month and 12-month periods. For example, a trust's portfolio of assets could not increase in size (measured by both the number of accounts and receivables) by more than: (a) 10% to 15% over any three-month period and (b) 20% to 30% over any 12-month period, unless the rating agency confirms that such increase will not adversely affect the rating of the outstanding notes. Similarly, account removals are permitted so long as an amortization event does not occur as a result of the account removal. The addition or removal of accounts is generally subject to the rating agency confirming that this action will not adversely affect the rating of the outstanding notes. The reason for this is to protect against adverse selection which might materially alter the credit quality or composition of the trust's portfolio of assets.

## H. REVOLVING PERIOD

Credit card receivables have relatively high turnover rates with short maturities. To facilitate long-term financing of short-term assets, credit card securitization structures utilize a revolving period. During the revolving period, interest is paid to investors while principal payments received on the collateral are used to purchase new receivables, if not used to accumulate principal for repayment of other series of notes that may be in an accumulation period.

This continuing purchase mechanism serves to reduce prepayment of principal to investors and enables the use of long-term financing for short-term assets. The revolving period has a definite term and may be prematurely discontinued by an early amortization event (see the Early Amortization section).

## I. CONTROLLED ACCUMULATION, CONTROLLED AMORTIZATION OR AMORTIZATION PERIOD

To facilitate predictable principal repayments to investors, credit card structures utilize a controlled accumulation and/or amortization period. The length of these periods will depend on the expected principal payment rate of the receivables but often begins approximately one year or less prior to the expected maturity date of the notes. Once a revolving period ends, principal collections from the receivables are either distributed to investors in agreed upon amounts (controlled amortization) or are accumulated (controlled accumulation) in a trust account (e.g., a principal funding account) until the expected maturity date. When a controlled accumulation is used, notes are typically repaid with one principal payment (e.g., a hard bullet payment) on the expected maturity date. Subject to the provisions of transaction documents, the length of the accumulation period can be reduced if there are several series of notes outstanding and



the principal collection is entirely allocated to the maturing series, instead of being allocated among different series. If, on the expected maturity date, the notes are not fully repaid through controlled amortization or the trust does not have sufficient funds accumulated in the trust account to pay off the notes through controlled accumulation, an amortization period will begin. At this point, the program under a master trust structure usually will turn into a soft bullet payment structure, where all or a specific outstanding series of notes will receive a monthly *pro rata* share of collections until the earlier of the full repayment of the notes or the legal final maturity date.

## J. EARLY AMORTIZATION

Covenants are included in credit card structures to protect investors. Market participants usually refer to these covenants as early amortization triggers. Breaches of these triggers (if not cured within any applicable grace period) would result in the end of the revolving period and the onset of the amortization period. These triggers include, but are not limited to, the following:

- Insolvency of the seller;
- Failure of the seller to perform or observe covenants, breaches of representation and warranties, or other default of the seller;
- Inability of the seller to add sufficient receivables to satisfy the minimum seller's interest requirement;
- Failure to pay timely interest to noteholders or ultimate principal on any series of notes when due;
- The occurrence of a servicer termination event;
- Breach of a performance trigger (excess spread or payment rate falls below a certain threshold).

## K. SERVICER TERMINATION EVENTS

All transactions rated by DBRS contain standard servicer termination events which incorporate the following triggers (that are not cured within any applicable grace period):

- Failure to make payments when due;
- Failure to perform or observe covenants;
- Untrue representation and warranty; and
- Bankruptcy or insolvency.

These triggers are designed to provide investors with the option of replacing the initial servicer should it fail to meet its servicing requirements. Performance related triggers are not included as servicer termination events because they have already been included as amortization triggers, and it is unlikely that a replacement servicer could implement new servicing procedures that would outperform those already in place within the seller's operation.

## L. COMMINGLING

The commingling of funds occurs when the seller acting as servicer blends credit card receivable collections for a particular securitization transaction with funds that are not related to the securitization. DBRS usually permits the commingling of funds by the seller until the next settlement date of the transaction as long as the seller maintains a minimum short-term rating of R-1(low). The reason the minimum rating requirement for commingling is higher than the investment grade rating level used for other securitization transactions is due to the large daily collections received for credit card securitization transactions.

Commingling allows remittance to the investors to be carried out on a monthly basis or even longer. Should the seller be removed as servicer or the servicer's rating falls below the required minimum rating threshold, the allowable commingling period is reduced to two business days or shorter. The high turnover rates and large cash collections of credit card receivables make short commingling periods essential in order to protect the investors when the servicer's financial condition weakens and its rating drops below the required level.

## M. SWAPS

As the annual percentage rate (APR) of many credit card receivables in Canada is based on a floating benchmark rate (prime rate) while the coupon rate on the notes could be either fixed or floating, there is a potential interest rate mismatch. Depending on the rating or the eligibility of the swap counterparty,



a fixed-floating interest rate swap could be considered effective, beneficial (but not sufficiently effective) or immaterial in determining appropriate credit protection. However, given that excess spread from credit card receivables is generally high compared to other asset classes, a swap to mitigate the exposure to fixed-floating rate mismatch and possible spread compression is not always required because such compression is analyzed in the stressed scenario(s). In addition to being used to mitigate interest rate mismatch, fixed-floating swaps can also be arranged by the seller, which is usually the swap counterparty as well, to reflect its view of the interest rate environment. Some transactions have accumulation swaps in place to mitigate the potential negative carry during the accumulation period, in lieu of depositing cash. Cross-currency interest rate swaps are needed if the trust's assets/portion of purchased receivables and the notes issued are denominated in different currencies. Swap counterparties must meet a minimum credit rating threshold of A (high) or R-1 (middle) in order to be eligible as a swap counterparty.

## N. CASH FLOW ALLOCATIONS (WATERFALLS)

Collections from credit card receivables are segregated into components of principal and finance charges. Finance charges, principal collections and receivable write-offs are allocated *pro rata* between the seller's co-ownership interest and the trust's co-ownership interest. The *pro rata* share of the trust's interest is determined by the aggregate amount of notes outstanding divided by the balance of the trust's portion of receivables. Subsequently, the collections are again divided between each series of debt issued by the trust. The finance charge component is used to pay the expenses of the trust servicing (if applicable), note interest and receivables that have been written off. Finance charges are considered excess spread after all expenses, note interest and other distributions have been made.

In general, finance charges and principal collections can be shared and re-allocated among series of notes. For example, excess finance charges not needed by one series may be reallocated to another to cover any shortfalls in noteholder interest, write-offs allocable to the series and restoration of any previous principal write-downs.

During the revolving period, interest is paid on the notes while principal collections from the receivables are used to purchase new receivables or to pay amortization amounts on other series of notes (if permitted in the structure). Once the revolving period ends, either as scheduled or prematurely due to an early amortization event, the principal collections are used to amortize maturing notes during an accumulation or amortization period.

For credit card securitization in Canada, finance charges, principal collections and receivable write-offs are generally allocated on a series specific basis, using either the fixed or floating allocation method as described below:

### 1. Fixed and Floating Allocation Methods

Under the fixed allocation method, collections are allocated to the notes based on the respective co-ownership interest of the trust in the receivables as of the end of the revolving period. The fixed allocation method is generally used to allocate principal collections among the series when they enter the amortization period (see Table 1). With the fixed allocation method, the numerator of the allocation ratio is a constant amount equal to the amount of the outstanding series note balance at the end of its revolving period. The denominator of the ratio, however, is the principal portion of the receivables owned by the trust,<sup>1</sup> which can change period over period. As the numerator remains constant even as the series amortizes, the use of the fixed allocation method will generally amortize the notes more quickly than a *pro rata* allocation of principal among all series of notes.

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1. To the extent the aggregate amount of the portion of the receivables owned by the trust are less than the outstanding note balance, the denominator would be the sum of all series note balances as at the end of their revolving period.



Under the floating allocation method, which is generally used to allocate finance charges and receivable write-offs, the numerator of the allocation ratio is the series note balance at the end of each month after consideration of amounts in the accumulation account (see the Controlled Accumulation or Amortization Period section). The denominator of the ratio is the principal portion of the receivables owned by the trust. In some trust structures, the allocation may shift to the fixed allocation method if an amortization event is triggered.

Table 1 below summarizes the applicable uses of fixed and floating allocations during different time frames within a transaction.

**Table 1**

Method of Allocation	Trust's Interest			Seller's Interest (100% - Trust's Interest)		
	Finance Charges	Receivable Write-Offs <sup>1</sup>	Principal	Finance Charges	Receivable Write-Offs <sup>1</sup>	Principal
Revolving Period	Floating	Floating	Floating <sup>2</sup>	100% – Floating	100% – Floating	100% – Floating
Accumulation Period	Floating	Floating	Fixed	100% – Floating	100% – Floating	100% – Fixed
Amortization Period	Floating or Fixed <sup>3</sup>	Floating	Fixed <sup>4</sup>	100% – Floating or 100% – Fixed	100% – Floating	100% – Fixed

1. Technically, transaction documents refer to receivable write-offs as either investor defaults or investor write-offs. The difference between investor defaults and investor write-offs relates to how the write-off will be handled. A receivable default will be first covered by finance charge collections and excess spread. If excess spread is insufficient to cover the default, it will be deemed an investor write-off. At this point, the investor write-off will cause a draw on enhancement or a write-down of the most subordinate class of notes. Some trusts will allow re-allocation of unencumbered principal collections to cover write-offs.
2. Principal collections allocable to the series are calculated but not distributed.
3. For some transactions, finance charges may be allocated using the fixed allocation method if an early amortization event occurs (see the Fixed and Floating Allocation Methods discussion for further details).
4. Some trusts issued "paired series", where the allocation of principal may be "re-fixed" during the initial series amortization.

## 2. Allocation of Finance Charge Collections

Once finance charges are allocated between the seller's co-ownership interest and the trust's co-ownership interest, finance charges allocated to the trust are further allocated *pro rata* among the series of notes. The amount allocable to a given series is based on the ratio of the series' notes outstanding for the period to the total amount of the portion of receivables owned by the trust (e.g., floating allocation). Once allocated to a series, finance charges are then generally applied on a priority basis within a series as follows:

- (1) To pay the series' portion of servicing and other trust fees
- (2) To pay the series' note interest
- (3) To absorb losses from the write-offs allocated to the series
- (4) To restore the series' allocated co-ownership interest for any write-down of note principal from prior periods
- (5) To restore draws on the cash collateral account (CCA)
- (6) To absorb interest shortfalls occurring in other series, if applicable
- (7) To the seller if no event trigger is activated

Some credit card securitization structures may allow for the allocation of finance charges at the master trust level (i.e., a socialized trust), instead of series-specific allocations (a non-socialized trust). If finance charges are allocated at the master trust level, the main benefit is that the structure can support a higher coupon rate with the risk that an early amortization event will cause all series of notes of the trust to enter early amortization, while in a non-socialized trust early amortization event is series specific.



### *3. Allocation of Principal Collections*

During the revolving period, the principal collections allocable to the trust's co-ownership interest are reinvested to purchase new receivables. Once the revolving period for a series ends, principal collections are then allocated to the series of notes based on a fixed allocation method. Within a series, principal payments are made on the notes according to the priority order.

Most master trusts allow the sharing of principal collections among outstanding series. For example, if one series is amortizing or in accumulation while another series is still in its revolving period, all principal collections, if needed, can be used to pay down the series that is amortizing or in accumulation. Principal collections that are allocable to subordinate notes can also be used to pay senior note interest if excess spread and amounts in the CCA are insufficient to cover the interest payment. Lastly, note principal can be written down, starting from the most junior class of notes, if the amounts in the CCA and excess spread are insufficient to cover allocated write-offs as discussed below.

### *4. Allocation of Write-Offs*

Write-offs are allocated first between the seller's co-ownership interest and the trust's co-ownership interest. Once allocated to the trust's co-ownership interest, receivable write-offs are generally allocated among the different series based on the ratio of the series' outstanding note balance to the total amount of the portion of the receivables owned by the trust (e.g., floating allocation method).



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## IV. Credit Enhancement Analysis

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### A. CREDIT ENHANCEMENT COMPONENTS

#### 1. *Excess Spread*

Excess spread is equal to the portfolio yield less the sum of funding costs, net losses, servicing fees (if applicable) and other trust fees. The excess spread in a credit card transaction is a key source of credit enhancement for both senior and subordinate notes and is generally shared among series (see the Cash Flow Allocations section for more details). Excess spread is the first line of defence for write-offs or losses on the receivables allocable to investors.

#### 2. *Cash Collateral Account and Cash Reserve Events*

Like other ABS transactions, credit card securitizations can include a cash reserve account (CRA), separated from or the same account as the CCA. This account may be funded at closing or structured to build up if excess spread levels fall below certain thresholds. There could be different cash accounts specifically designated for different classes of the same series of notes.

Generally, if finance charge collections are in excess of the amount required to make the payment of interest on the notes and other expenses, the seller will retain the excess cash unless a cash reserve event (CRE) has occurred or is continuing. Under a CRE, excess spread is “trapped” to provide additional protection for the notes. It is possible for the most junior class to receive credit support from CRA which is specifically designated and usually pre-funded. The cash in the CRA can be used to cover interest on all the notes or the most junior class only but principal of the most junior class is not covered by CRA until the principals of all senior classes are paid in full. The CRE triggers are based on the level of net spread, which is usually defined as the one-month or three-month average excess spread. For example, if the net spread level for a certain program were to fall below 4%, a CRE could occur and continue until the net spread rises above 4%. If excess spread is not sufficient to cover receivable write-offs allocable to the series, the initial losses will be absorbed by the CRA, if available. If both excess spread and the CRA are not sufficient to cover losses, the note principal will be written down, beginning with the most junior class of notes, if permitted by the terms of the documents. If the note principal cannot be written down, a payment default will likely occur.

The required or minimum CRA balance is generally tied to the initial note balance of the series. The use of CRA in transactions as credit enhancement can vary, and may not be included in some transactions. CRA is usually series specific and can also potentially be class specific within a series as mentioned above. If there are draws on the CRA, they can be restored from excess spread in the following periods.

#### 3. *Subordination*

All credit card securitization transactions issued in Canada to date have utilized a subordination structure with some variations. Subordinated notes provide credit enhancement for the senior notes by absorbing losses (up to the subordinated principal amount) and allowing the senior notes with preferential first access to the cash flows.

#### 4. *Overcollateralization*

Credit enhancement in the form of overcollateralization involves backing the notes with receivables in excess of the aggregate outstanding note principal balances. Upon retirement of the notes, the overcollateralized assets become part of the retained seller's co-ownership interest. However, the minimum seller's co-ownership interest required is generally not considered part of enhancement as it is used for dilution purposes, not credit support.

#### 5. *Letter of Credit*

Another form of credit enhancement involves the use of a letter of credit in favour of the Trust from a financial institution with a minimum rating requirement (DBRS's current minimum ratings threshold for credit enhancers (such as letter of credit providers) is AA (low) and R-1 (middle)).



## **B. PERFORMANCE**

The historical performance of the receivables provides a reasonable expectation of future performance over the life of the transaction, provided that the portfolio characteristics remain relatively similar. DBRS generally requests extensive monthly data from sellers regarding key variables that impact portfolio cash flows such as net loss rate, servicing fees, monthly payment rates, purchase rates, the composition of portfolio yield and the (expected) cost of funds. These factors are discussed below.

### **1. Annualized Net Loss Rate**

#### **i. Historical Analysis**

The starting point is an in-depth review of the historical loss of the seller's receivables and the consistency of underwriting practices over time. Both positive and negative developments are taken into account. Changes in marketing, underwriting and collection efforts can serve to increase expected loss. In addition to evaluating the quantitative aspects of the collateral, DBRS also considers the quality of the seller's origination platform and servicing capabilities in its ratings process.

Net losses are a function of write-offs less any recoveries. Delinquent accounts are required to be written off as uncollectible by the servicer after 180 days overdue according to guidelines set by the Office of the Superintendent of Financial Institutions. Account holders that file bankruptcy are also considered write-offs as per transaction documents. The annualized loss rate is calculated as the amount written off in the month as a percentage of the amount of receivables outstanding, annualized. Due to the unsecured nature of credit card lending, recoveries are usually low. Recoveries on write-offs depend on the means used to pursue recoveries. Most credit card issuers rely on a combination of internal collections, outside collection agencies, asset sales and legal channels in their collection work.

Loss rates are impacted by three main variables: (1) economic factors, such as unemployment trends, consumer wealth formation and household leverage ratios; (2) issuer underwriting and servicing; and (3) consumer's personal situation such as divorce, job loss or medical issues.

Historical loss rates are an important factor in determining an appropriate base case loss rate to be used by DBRS in modeling credit enhancement. A review of highest or average losses would be misleading without consideration of performance volatility as well as general loss trends. With increased volatility, a higher level of protection is required because of the uncertainty associated with future performance.

The actual multiple used in the analysis will depend upon both qualitative factors, as mentioned above, as well as quantitative factors. The volatility of the loss history and trends in performance can also impact the magnitude of multiples.

#### **ii. Loss Curve**

Empirical vintage analysis shows that, in general, credit card cumulative losses peak between 18 and 24 months after origination, and then stabilize. However, the actual level of loss curve depends on the individual card program, and as a master trust may have a compilation of receivables generated from many different card programs, the effectiveness of loss curve analysis can be sometimes reduced.

### **2. Annualized Gross Yield**

Portfolio gross yield is generated from finance charges, which include interest charges, annual card fees, interchange fees, cash advance fees, over-limit fees and other miscellaneous fees levied on cardholders. In general, portfolio yield is calculated as the annualized average of the monthly income earned on the portfolio divided by the receivables balance.

Credit cards are issued to cardholders with APRs that could be based on a fixed or floating rate, plus a premium. The premium is often based on the credit quality of the obligor and the obligor's historical per-



formance with the issuer (risk pricing). Therefore, APRs vary widely and are intended to attract certain types of consumers.

The yield figure normally includes interchange fees, depending on the transaction documents. In such cases, DBRS will remove or reduce interchange fee component from the yield figure to arrive at a base case yield (see the Interchange section below for further details).

#### **i. Interchange**

Interchange fees exist to provide some compensation to the card issuer for interest costs and default risk of the advanced amount and to the merchant's bank and settlement bank for their administrative expenses. DBRS typically excludes or reduces the interchange fee when stressing portfolio yield due to the following reasons: (1) the property rights of the card issuer in respect of the interchange are not reviewed by all parties in securitization; (2) most securitization transaction opinions do not address the ongoing availability of interchange; and (3) interchange is subject to set-off.

### ***3. Monthly Payment Rate***

Payment rates represent total monthly collections received from cardholders divided by the receivables balance. Payment rates are a critical factor impacting credit enhancement. Higher payment rates means that more funds are available to repay noteholders during either controlled accumulation or amortization periods. Sellers report payment rates on a total basis (finance charges and principal) and/or on a principal collected basis. If only "total payment rates" are reported, DBRS will estimate the collection of finance charge components and remove them from total payment rates reported to determine an appropriate base case principal payment rate.

Depending on the payment rates, credit card holders can be generally classified as either convenience users (transactors) or revolvers. Convenience users are those who pay off their credit card balances in full each month. They tend to be financially more conservative obligors as they use credit cards for the convenience as a transaction means and pay their unsecured debts in full on an ongoing, current basis. Cardholders who keep balances on their accounts are classified as revolvers and tend to have a greater range of credit profiles.

Monthly payment rates are impacted by several variables, such as the credit quality of the obligors, contract terms and balance levels. A master trust usually includes transactors and revolvers. In a stressed scenario, it is assumed that the payment rate will drop precipitously once the transactors pay off their current balances. Contract terms are important for obligors who carry balances as the contract stipulates the minimum payment required. Therefore the minimum contract amount establishes a floor for payment rates for credit enhancement analysis. Lastly, balance levels can also affect payment rates. It is considered more difficult for households with larger balances to do a balance transfer to a new credit card lender as they are considered financially more levered and likely considered having weaker credit quality. These households usually do not have other better or lower-rate refinancing options to pay off the higher interest-bearing credit card debt and typically have lower monthly payment rates.

### ***4. Monthly Purchase Rate***

The monthly purchase rate represents the total monthly transaction usage by cardholders divided by the receivables balance at the beginning of the month. Investors can be impacted by the monthly purchase rate during the amortization period. If all other factors are held constant, the higher the level of new transaction activities, the greater the receivables available and the incoming cash flow to the trust from the payment of those receivables. This improves the trust's ability to amortize notes and repay in full.

In credit enhancement determination, DBRS will stress purchase rates. In general, private label retail or co-branded cards with retailers are stressed with a purchase rate of zero as the usage of these cards in a stressed scenario (such as retailer's insolvency) is likely very low. On the other hand, generic cards are given the benefit of a positive, albeit low, purchase rate as the usage of these cards is not limited to particular vendors or locations. As rating categories decline, more benefit can be given to the purchase rate.



Select issuing entities (such as below-investment-grade issuing entities) are also stressed with a purchase rate of zero as the linkage between the card usage and issuers' financial strength is considered very high.

## C. OTHER CONSIDERATIONS

### 1. *Servicing Fees*

In addition to trustee fees, a large fee expense in credit card securitization is the servicing fee. Servicing fees are calculated based upon the outstanding balance of the total receivable pool and allocated between seller's interest and trust's interest. Most credit card receivables in Canada are sold on a fully serviced basis, meaning the seller is the servicer and does not receive servicing fees. Instead, the seller receives excess spread after all expenses and costs are paid. When replacement servicers are required they are entitled to proportionate servicing fees to that of the original servicer. DBRS assumes that a standard market rate servicing fee, usually no more than 2% a year, is paid out of the collections when the servicer is replaced during stress testing.

### 2. *Cost of Funds*

The majority of credit cards in Canada are based on APRs which use the prime rate as a pricing benchmark. On the other hand, note coupons for credit card ABS can be either fixed or floating rate. Floating rate coupons are usually indexed to CDOR. Changes in prime rates may therefore impact the level of excess spread available in a transaction (see the Cash Flow Stress Scenarios section for further details).

Interest rate risks in credit card transactions stem from the following sources:

- Mismatch of interest rates between credit card APRs and fixed rate note coupons;
- Basis risks from the differences between the indices on which credit card receivables are priced (prime) and floating note coupon indices (CDOR);
- Time lags between the APR resets<sup>2</sup> for credit card receivables and floating note coupon rates.

### 3. *Cardholder Behaviors*

The proportion of transactors versus revolvers in any given portfolio provides an indication of the expected performance of the portfolio and thus credit enhancement levels as well. There are advantages and disadvantages associated with each type of cardholder from the portfolio's perspective. For instance, transactors pay off their unsecured credit card debts on an ongoing, current basis. Consequently, transactors generate a higher level of interchange fees, but lower levels of interest yield and losses as the receivables are paid off quickly. Revolvers are not limited to any particular spectrum of credit profiles, and generally take longer to pay off their receivables. Therefore, they are known to generate a relatively high level of interest yield and higher loss rates.

## D. CASH FLOW STRESS SCENARIOS

The DBRS cash flow analysis incorporates all of the elements of the transaction structure, including any triggers or covenants that may impact cash flows and result in an early amortization starting as early as at the sixth month after closing. During the amortization period cash flows are diverted to repay the outstanding notes rather than being re-invested in additional receivables in order to determine appropriate credit enhancement. The notes must be able to withstand a combination of stresses appropriate for the rating category, without any loss of principal or interest.

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2. Contractually, banks have the ability to change the APR a consumer is charged at any time. In practice, many factors affect an APR change including the ongoing credit profile of the consumer, competitive environment and local usury laws.



DBRS examines at least three to five years of monthly performance data to determine a base case (“B” rating) for write-offs, portfolio yield and principal payment rates. Both the average and the more recent data for these factors are reviewed, as well as trends in the historical averages. Once base case levels are established, they are subjected to stress scenarios based on the desired rating for the class, as summarized below in Table 2.

**Table 2**

	<b>AAA</b>	<b>AA</b>	<b>A</b>	<b>BBB</b>	<b>BB</b>
Yield (reduction of base case)	30–45%	25–35%	20–30%	15–25%	5–10%
Principal Payment Rate (reduction of base case)	35–50%	35–45%	30–40%	25–35%	10–20%
Write-Offs (multiple of base case)	4.0–5.0x	3.0–4.0x	2.5–3.5x	2.0–2.5x	1.5–2.0x

Time frames to stress variables are compressed in the DBRS scenarios. The analysis begins with base case assumptions in a usual “normal” period for the first five months, followed by a simultaneous deterioration of losses, payment rate, purchase rate and portfolio yield commensurate with the rating category beginning in the sixth month. The deterioration is assumed to be linear for the next 12 months so that at the end of the 18th month the respective variables are conservatively stressed and positioned.

To assess the impact of interest rate mismatch discussed in the Cost of Funds section above, DBRS assumes the following:

- Credit card receivables which are based on a prime rate can be re-priced vis à vis their index on a lagged basis while floating-rate note coupons are increased immediately when interest rates increase. Floating-rate note coupons are subjected to a forward curve and a linear curve stress. The forward curve that best matches the maturity of transaction liabilities is used as the base curve. For the linear curve stress, which is more onerous in a flat or downward sloping yield curve environment, linear increases are applied to the base rate. DBRS will use the more onerous scenario produced under the linear or forward curve stress in its cash flow modeling. Based on the desired rating category for the class, DBRS will increase the base forward curve or base rate by the appropriate multiple, subject to a cap.
- Basis risk (i.e., differences in the index used for assets and liabilities) is also stressed based on the historical relationship of the indexes over long time frames.

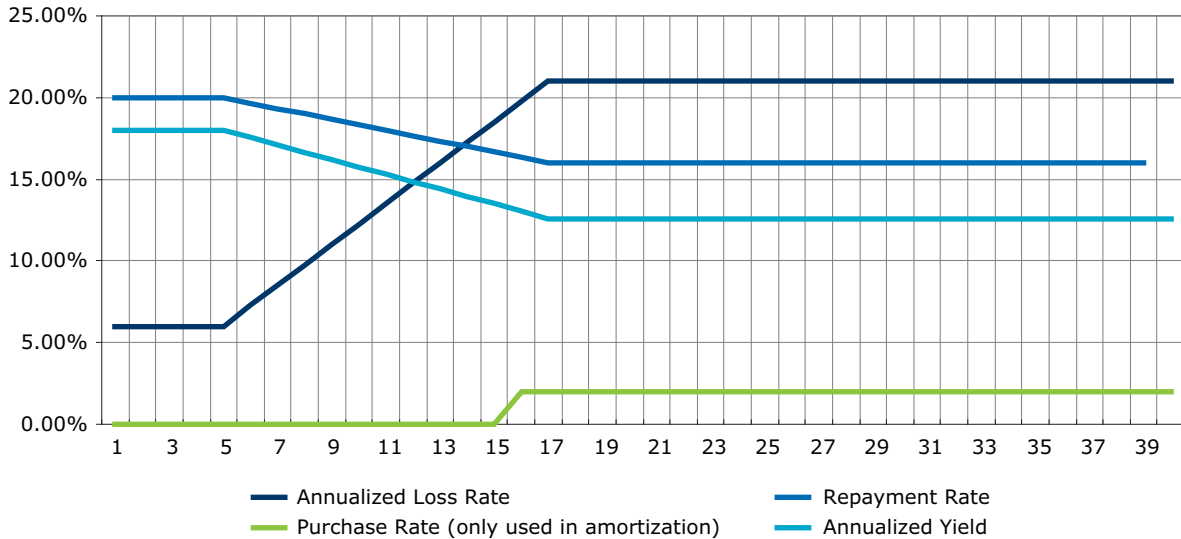
Floating-rate obligation exposes the trust to potential interest rate increases and therefore, everything else being equal, generally requires higher credit enhancement to cover for potentially higher cost of funds than fixed-rate obligation.

To the extent a transaction includes an interest rate swap or option, DBRS will apply the interest rate stresses above after considering the nature of the swaps or options. The existence of swap arrangements could determine the cost of funds to be considered as fixed or floating in credit enhancement analysis, regardless the actual nature of coupon rate.



The chart below illustrates the DBRS assumptions used to stress cash flows at the AAA level for a pool of credit card receivables with a base case portfolio yield of 17.5%, monthly principal payment rate of 20%, loss rate of 6% and a purchase rate of 2%:

**AAA Stress Assumptions**



At each rating category, DBRS performs various scenarios to determine the ultimate commensurate credit enhancement level. This is particularly useful for base case variables that may be considered too high or too low, or for issuing entities that have significant franchise value or are niche players in a particular market segment.

**V. Conclusion**

Credit cards continue to be a significant financing tool for consumer purchases and credit card ABS remains a core asset class in securitization. DBRS has developed a comprehensive approach to rating credit card transactions. The methodology considers the key characteristics of credit card receivables and their corresponding risk metrics, together with the various structural features inherent in credit card securitizations. As structural innovations continue to evolve, along with origination and servicing practices, DBRS will continue to refine and adjust its criteria to better serve the needs of market participants.

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