Moody's
INVESTORS SERVICE

RATING METHODOLOGY

Credit Card Receivables Securitizations Methodology

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This rating methodology replaces *Moody's Approach to Rating Credit Card Receivables-Backed Securities* published in July 2022. We moved the content that was in Appendix 1, previously titled "The Historical Impact of Account Closures on Credit Card Trust Performance," into a separate data report (see the "Moody's Related Publications" section). In Appendix 2, we updated descriptions of the adjustments for Japanese and Korean credit card transactions. We also made editorial updates to improve readability.

Scope

This rating methodology applies to securities backed by credit card receivables.

In this methodology, we explain our global approach to assessing credit risks for credit card receivables-backed securities and other asset-backed securities (ABS) backed by fully revolving consumer loans. Fully revolving consumer loans are typically evergreen loan facilities, from which individual borrowers can withdraw cash on an ongoing basis at any time within limits defined by the loan agreements. Generally, the main characteristics and risk factors of fully revolving consumer loans are similar to those of credit card products.

This methodology includes quantitative and qualitative factors that are likely to affect rating outcomes in this sector. We discuss the asset and liability analysis, including associated modeling, as well as other considerations. We also describe our monitoring approach.

Rating Approach

In this section, we summarize our approach to assessing credit risks for securities backed by credit card receivables, including quantitative and qualitative factors that are likely to affect rating outcomes in this sector.

Our rating approach for credit card receivables ABS consists of four main steps:

(1) Analyze the transaction's collateral performance and cash flows to determine its Aaa level of credit enhancement (CE) given sponsor default (Aaa LGSD), i.e., the maximum stress level of CE for the transaction consistent with a Aaa (sf) rating, assuming that the transaction's sponsor has revoked charging privileges on its credit card accounts. We use the term "sponsor default" to represent all situations in which the credit card accounts are closed because of the sponsor's financial distress.

(2) Determine the level of CE consistent with a Aaa (sf) rating (Aaa CE) by haircutting the Aaa LGSD based on the sponsor's credit quality, which in this methodology is generally the same as its Counterparty Risk Assessment[1] (CR assessment).

(3) Adjust the transaction's senior and subordinate securities' ratings given the CE available to protect those securities and the minimum CE necessary to support those ratings.

(4) Derive the assigned ratings of the securities after we analyze the factors in the "Other Considerations" section, such as counterparty, operational, and legal risks. Exhibit 1 shows our approach in more detail.

EXHIBIT 1
Overview of Rating Credit Card ABS

Source: Moody's Investors Service

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[1]   For more information, see *Rating Symbols and Definitions.* A link can be found in the "Moody's Related Publications" section.

We base our methodology on our analysis of the performance of credit card securitizations in which the sponsor became insolvent and closed the securitized accounts.[2]

Our analysis of credit card securitizations that entered early amortization indicates that a credit card ABS transaction sponsor is unlikely to close its card accounts unless it is in financial distress. As a result, a transaction with a sponsor that has a high CR assessment is less likely to encounter a stress scenario as severe as the Aaa LGSD stress scenario described in Step 1. Instead, we assume a transaction sponsor that is not in default will take steps to prevent early amortization of the transaction or it will continue to fund new card purchases with alternative funding sources (other than securitization). A sponsor typically supports a transaction through (1) structural features, such as discounting principal receivables to increase excess spread; (2) the addition of higher-than-existing quality accounts to improve collateral performance; and (3) the addition of CE. A sponsor in financial distress is unlikely to have the capacity to provide support.

The haircut described in Step 2 accounts for the lower likelihood of severe stress and incorporates our assumptions on what shortfalls the pools may incur if the sponsor kept the accounts open. We adjust our analysis to address any region-specific or other idiosyncratic risks in the securitization that may affect the securities' ratings. Although we have a global approach, we modify it as necessary to accommodate regional differences in key variables. For example, there are several differences between Japanese and Korean credit card ABS and those typical to the US, UK and Canada. For differences in how we apply our credit card ABS methodology in Japan and Korea, please refer to Appendix 2.

With this rating approach, CE levels we deem consistent with a particular rating vary by transaction, based on following considerations:

» the inherent collateral characteristics of the transaction's credit card portfolio

» our performance expectations for the transaction's credit card portfolio during the maximum stress scenario

» the transaction sponsor's credit quality

» the transaction's structural features, along with legal, counterparty, operational and sovereign risk considerations

As such, the sponsor's choice not to adjust CE as its credit quality (as reflected by the sponsor's CR assessment) changes will likely result in a change in the ratings on the related securitization.

However, the actual ratings the rating committee assigns take into account numerous other factors, including the results of sensitivity analyses to a variety of charge-off, yield and payment rate assumptions, as well as factors discussed in the "Other Considerations" section.

Asset-level Analysis and Related Modeling

In this section, we explain how we analyze the underlying assets that back credit card receivables securitizations and how we estimate potential losses on those assets.

In this methodology, we use the term "trust" as a proxy for non-trust structures where necessary. In jurisdictions where the legal system differs from the English common law system, trusts as such do not exist. For instance, in Japan, credit card ABS transactions are separate issuances with segregated collateral

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2   For more information, see the "Moody's Related Publications" section.

pools in which only receivables are transferred, not accounts. In Korea, each transaction is backed by a separate portfolio of credit card accounts, with a seller share for each transaction. For such jurisdictions, the "trust" means "securitization transaction." Further, non-trust structures can also be used in common law systems to securitize credit card pools. As such, references to "seller share" also apply generically in non-trust structures to liabilities that may represent the seller's economic interest in the securitization transaction, similar to a seller's beneficial interest in trust structures.

Step 1: Maximum Stress Scenario

In the first step of our rating analysis of credit card receivables-backed securities, we determine the level of CE needed to offset pool shortfalls in a maximum stress scenario. In this scenario, we assume that the transaction is in early amortization and the transaction sponsor is in financial distress. We also assume that the sponsor has closed its cardholder accounts owing to difficulties obtaining the financing to keep the accounts open or finding a buyer for the credit card portfolio. We call the level of CE in this maximum stress scenario the Aaa level given sponsor default, or Aaa LGSD.

As part of this first step in our analysis, we determine how quickly and to what extent individual metrics of collateral quality and performance deteriorate when subject to particular stress factors. The Aaa LGSD equals the difference between the transaction's stressed principal and income asset cash flow (which can include proceeds from the sale of any residual receivables balance at the legal final maturity date), and the transaction's stressed payment obligations, all aggregated over the transaction's life. The Aaa LGSD therefore reflects the total stress that a transaction's asset and liability cash flows can withstand at the Aaa (sf) level when a sponsor defaults. We further discuss the liability cash flows and the transaction's payment obligations in the "Structural Analysis and Liability Modeling" section.

We analyze the following stress factors to determine the maximum stress scenario:

- » cessation of new purchases
- » higher-than-expected charge-offs
- » lower-than-expected yield net of the interest paid on the securities
- » slowdown in principal payments
- » reduction in the par value of any receivables sold at the legal final maturity date for their market value

We assume that the cessation of new purchases occurs in all transactions, resulting in a purchase rate assumption of 0% for all credit card ABS transactions we analyze. We assume sponsors will have limited ability to maintain card utility in the event of severe financial distress. Even when the sponsor is a highly diversified financial institution, if its credit quality deteriorates due to severe financial distress, it will struggle to maintain funding for its card program, and thus struggle to maintain card-charging privileges when the trust enters early amortization.

We use the performance data for account closures[3] as well as the historical performance data for each of the pools backing the credit card ABS transactions to model these factors in the maximum stress scenario.

In "Step 1A: Portfolio Analysis," we discuss two determinants of collateral credit quality in a credit card ABS transaction: the portfolio characteristics and the sponsor or servicer's abilities to perform their duties. We then discuss how stressing three key portfolio metrics, namely the charge-off rate, the yield and the

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[3]   For more information on the performance of credit card securitizations in cases in which the sponsor became insolvent and closed its securitized accounts, see the "Moody's Related Publications" section.

principal payment rate, affects the gap between the transaction's stressed asset cash flow and its stressed payment obligations over the transaction's life.

Step 1A: Portfolio Analysis

Portfolio Characteristics and Sponsor/Servicer Assessment

For metrics such as the charge-off rate, the yield and principal payment rate, we base our collateral performance assumptions on the characteristics of the credit card receivables backing the transaction. Generally, credit card securitizations include receivables that are: (1) payable in the local currency, (2) created in compliance with applicable law, and (3) free and clear of liens, and thus assignable to the trust. As such, we assume the account and related receivables are bone fide financial obligations of the credit card borrowers.

We assess the relative strengths and weaknesses of each receivables portfolio by analyzing, among other things, borrower credit scores, account seasoning, the percentage of convenience users (i.e., cardholders who pay their balances in full each month), the card product types, card partnership composition and concentrations, and the borrowers' geographic concentrations. We also adjust our analysis for region-specific or other idiosyncratic risks in the securitization that could affect the ratings.

In most credit card securitizations, the transaction sponsor is also the servicer of the securitized card accounts and is typically a bank entity. As such, we assess the entity's abilities as both sponsor and servicer.

As part of our sponsor analysis, we evaluate the quality and consistency of its originating and underwriting practices to determine the relevance of historical data in evaluating the future credit quality of the portfolio. We analyze policy and strategy changes that could cause deviations from historical performance. In addition, we examine the sponsor's incentives to continue to originate credit card accounts of consistent credit quality.

In our servicer analysis, we assess its ability to collect payments, mitigate losses and maximize recoveries. We typically base our assessment on (1) a quantitative analysis of past servicing metrics such as delinquencies or charge-offs; (2) a review of a servicer's management capabilities, including incentives and motivation to maintain performance; (3) the servicer's securitization experience; and (4) an evaluation of changes in resources that could affect performance.

There are fewer uncertainties in transactions with experienced sponsors and servicers that have performed consistently within our expectations. Performance can be volatile in transactions with newer or less-experienced sponsors and servicers. In cases of servicer disruption, the trustee in US transactions generally acts as the servicer of last resort or is responsible for finding an appropriate successor. As a result, in our maximum stress scenario, we assume a servicing transfer could occur and that in some cases the replacement servicer might require a higher servicing fee.

Collateral Performance

After assessing the relative strengths and weaknesses of the transaction's portfolio, as well as the transaction's servicer and sponsor capabilities, we analyze the portfolio performance in a maximum stress scenario (i.e., the Aaa LGSD scenario), looking specifically at the charge-off rate, yield and principal payment rate.

CHARGE-OFFS

In most countries, negative excess spread or a sponsor's insolvency would trigger early amortization of the securities. In the US, however, the Federal Deposit Insurance Corp. (FDIC) is likely to disallow a sponsor

receivership as a cause for the trust to enter early amortization, even if the trust documents have explicit language stating that the receivership of the sponsor is an early amortization event. Therefore, for US transactions, we assume that negative excess spread triggers early amortization. In such a scenario, the charge-off rate at the beginning of the early amortization period would cause the transaction's excess spread to drop to zero, as per our assumptions for yield at the start of early amortization (see the "Yield" section below).

Outside the US, if we expect that a sponsor's insolvency triggers early amortization before excess spread becomes negative (which could occur in portfolios with strong performance and low charge-off rates), we will set our starting charge-off rate assumption as a multiple of the base case charge-off rate rather than at the breakeven charge-off rate. The losses in the two scenarios are very similar, as the early amortization caused by excess spread falling below zero generally occurs around the same time as a sponsor's insolvency.

We then assume that, following account closures, the charge-off rate rises sharply to a peak level within a short period, and then falls gradually over several months before reaching its long-run, steady state. We assume the peak charge-off level during early amortization will be a multiple of the long-run expected charge-off rate, typically four times for most credit card transactions.

We base our long-run steady-state charge-off assumption on the trust's historical performance and credit characteristics. This rate is usually close to the highest peak charge-off rate for a portfolio that contains only non-convenience users (i.e., revolving credit users) because we assume that convenience users will leave the portfolio soon after the early amortization event. As a result, the assumption will be higher than the historical peak charge-off rate of the transaction's portfolio for those portfolios that include a material proportion of convenience users.

Exhibit 2 provides an example of our charge-off rate assumptions in a typical credit card portfolio throughout an early amortization event following account closures.

EXHIBIT 2
Example of Typical Charge-off Rate Assumptions During Early Amortization
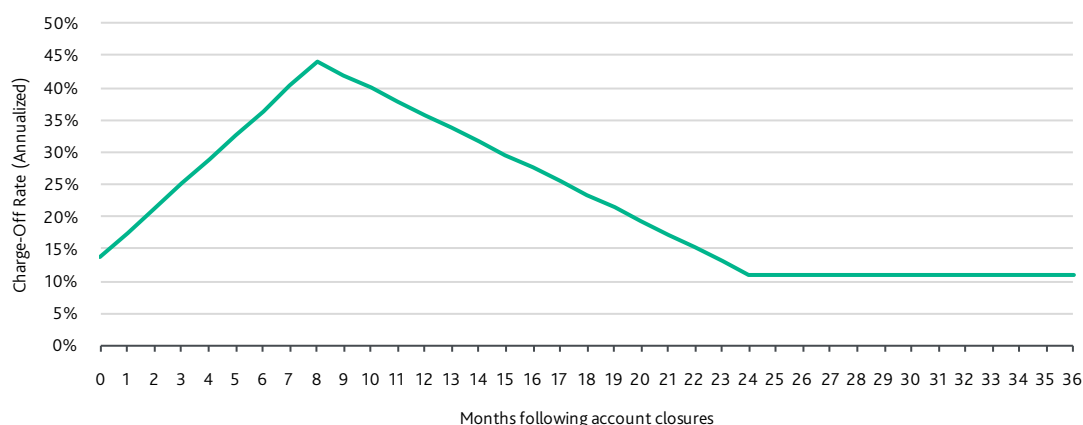
Note: Data are for illustration only. Actual data vary by trust.
Source: Moody's Investors Service

Our assumptions for elevated charge-offs throughout the early amortization event incorporate:

» cardholders' loss of card utility following account closure, which lowers the incentives for financially stressed cardholders to make required payments on their card accounts.

»   a shift toward lower-credit-quality obligors in the pool, as higher-credit-quality convenience users typically pay off their balances immediately after the start of the early amortization event.

»   macroeconomic weakness (such as a recession), which could cause financial distress for a larger proportion of cardholders and/or transaction sponsor

The charge-off profile throughout the early amortization also reflects our assumption that the weakest obligors gradually drop out during the maximum stress scenario, causing charge-off behavior to return to levels that exert less stress on the portfolios.

YIELD

A transaction's yield consists of interest charged on outstanding credit card balances (finance charges), various fees (late payment fees, over-limit fees and annual membership fees) and interchange (a fee based on the volume of charges that the credit card banks receive from merchants for accepting credit risk, absorbing fraud losses and funding credit card receivables for a limited period before initial billing). Credit card securitizations typically allocate cash flows on a cash, rather than accrual, basis. This feature is particularly important when considering the yield because there may be a considerable difference between the amount charged and the amount collected.

In the Aaa LGSD scenario, we assume that (1) any income from interchange and fees stops immediately, because we assume that the card accounts are closed and therefore cannot be used to make new purchases; (2) delinquencies and charge-offs rise, lowering finance charge collections; and (3) after the initial drop, yield stabilizes quickly after the decline in card balances from convenience users, who typically do not incur finance charges. We vary our yield assumptions for each portfolio based on the size of the interchange and the portfolio's annual fee components. For example, portfolios with a higher percentage of convenience users will have a disproportionately higher share of interchange-derived yield. Also, our yield assumption at the start of an early amortization will be lower than the historical yield because we consider the risk of changes in a portfolio or that a distressed sponsor reduces finance charges and fees to compete with peers.

Lower market interest rates will also lead to a drop in yield in some portfolios. We account for that possibility in a separate adjustment, which we describe in "Interest Rate Mismatches" under the "Structural Analysis and Liability Modeling" section. Exhibit 3 provides an example of our yield assumptions in a typical portfolio during an early amortization.

EXHIBIT 3
Example of Typical Yield Assumptions During Early Amortization
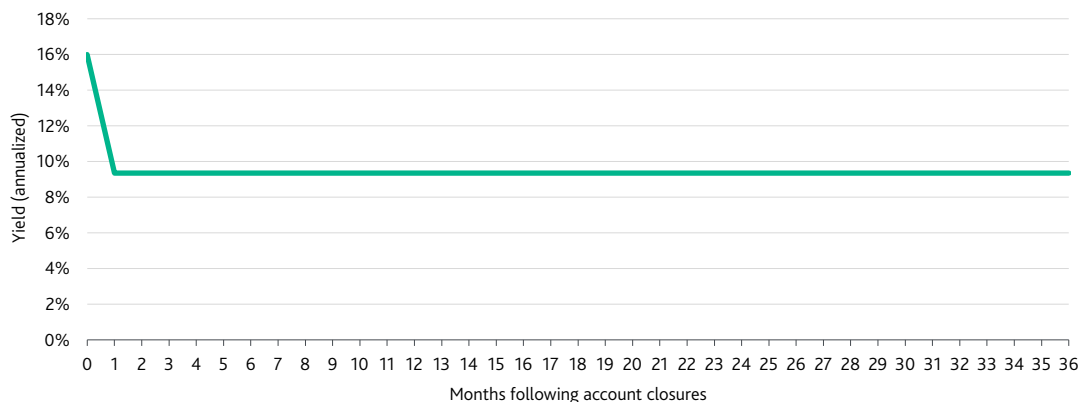
Note: Data are for illustrative purposes only. Actual data vary by trust.

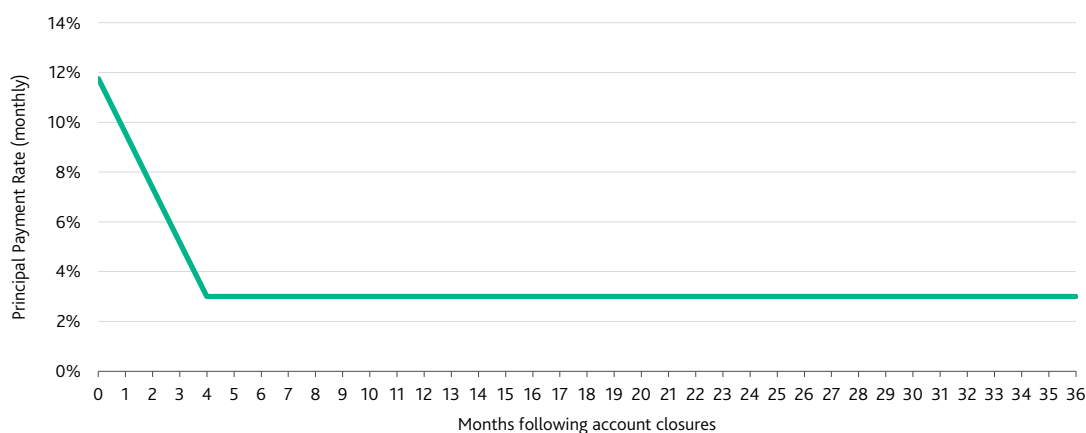*Source: Moody's Investors Service*

PRINCIPAL PAYMENT RATE

In the Aaa LGSD scenario, we assume that the principal payment rate falls dramatically during the initial months of an early amortization. First, the trust's convenience users repay their outstanding balances and drop out of the pool soon after the start of the amortization period. Depending on data availability and the portfolio composition, we may assume that a share of convenience users repays their balances in full in the month following early amortization. Consequently, the weighted average payment rate of the remaining cardholders will be lower than the payment rate of the pool prior to the departure of these convenience users. Similarly, the receivables from other cardholders with relatively high payment rates will quickly shrink as a percentage of the remaining pool, which will cause a further decline in the weighted average payment rate of the trust.

As such, we assume the principal payment rate for most portfolios is close to 3%, near the average minimum contractual payment rate on the accounts. Our payment rate assumption at the start of an early amortization is based on the trust's historical payment rates, adjusted downward to consider the expected increase in charge-offs at that time.[4] We may assume a higher payment rate for credit card transactions whose payment terms indicate a higher contractual minimum payment rate.

Exhibit 4 provides an example of our assumptions for principal payment rate in a typical portfolio over the course of an early amortization event.

EXHIBIT 4
Example of Typical Principal Payment Rate Assumptions During Early Amortization

Note: Data are for illustrative purposes only. Actual data vary by trust.
Source: Moody's Investors Service

Dilutions

In the context of credit cards, dilution is the reduction in the principal amount of a receivable for reasons other than payment or charge-off, generally caused by return of goods. Transaction sponsors typically provide indemnities for dilutions and, in the context of credit card transactions, size the minimum seller's interest to cover dilutions.

In the Aaa LGSD scenario, we assume that dilutions occur in the first few months of the early amortization as consumers return purchases made prior to account closure. Dilution rates depend on the laws governing consumers' rights to return goods. The stressed dilution rate we use is a multiple of the historical monthly

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4   For more information, see the "Charge-offs" section.

dilution rate. We expect that the minimum seller's interest absorbs dilutions. If this is not the case, we adjust the Aaa LGSD and Aaa CE accordingly.

Structural Analysis and Liability Modeling

Step 1B: Cash Flow Analysis

Transaction Structure

In our analysis of the transaction's stressed asset cash flows and its payment obligations, we also evaluate the structural features that determine the allocations of principal and finance charge cash flows. These features include:

» allocations of finance charges and principal collections to pay various trust fees, such as administrative and servicing fees

» allocations of finance charges and principal collections between the seller's/transferor's interest and the investor's interest

» allocations of finance charges and principal collections between the various series of securities issued out of the trust

» the trust's minimum seller's interest requirement

» the accumulation of finance charge collections to fund the reserve account for certain classes of securities when excess spread drops below a certain level

» any interest rate and/or currency swap agreements, or any other derivative or hedging agreement

» any "discounting" mechanism that directs principal payment cash flows into the finance charge cash flow to boost yield and, by extension, excess spread

Interest Rate Mismatches

We also analyze the trust structure to identify mismatches between the interest rates on the assets (which accrue on the credit card balance according to the interest rate in the cardholder agreement) and those on the liabilities. Interest rates on the credit card balances are either fixed or floating and subject to change under certain conditions). Similarly, interest rates on securities may be fixed or floating, and we evaluate them net of any effects from interest rate swaps. As such, we adjust our cash flow analysis to account for any variations in interest rates that could narrow the spread between the rates on the assets and the liabilities.

Exhibit 5 shows examples of levels of asset-liability mismatch stress in a generic US transaction. We look at historical data and assess the evolution of the rates in multiple scenarios. We determine the stresses assuming a Aaa equivalent confidence interval. In rating transactions with assets or liabilities referencing other floating rates, we stress rates in a similar fashion, taking into account the characteristics and volatility of interest rates and the interest rate environment in those countries. In a typical analysis, we either raise the interest rate on the liabilities or lower the interest rate on the assets; in both cases, the excess spread diminishes. For transactions with a mix of fixed- and floating-rate assets or fixed- and floating-rate liabilities, we apply a mix of stress factors accordingly. For structures in which all series in the trust share interest expenses (e.g., de-linked or "socialist" trusts), we generally analyze the trust as if it has floating-rate liabilities because credit card securitizations are perpetual issuance vehicles, and the issuer can switch to issuing floating-rate securities from fixed-rate securities at any time. For structures in which series do not share interest expenses, we typically use each series' actual weighted average coupon (WAC). In the UK, we typically use an average WAC.

EXHIBIT 5

Examples of Asset-Liability Mismatch Stress in a Generic US Transaction

	Floating Rate on Liabilities	**Fixed Rate on Liabilities**
Floating APRs on assets	2.5%[*]	% = Floating reference rate[**]
Fixed APRs on assets	5.0%[***]	0%

APR—annual percentage rate

* Buffer for APRs indexed to US prime rate and liabilities indexed to LIBOR or SOFR.

** The buffer accounts for a potential decline in floating-rate APRs, based on current interest rates. For a US transaction, we will use, for example, the current Fed Funds rate.

*** This particular assumption is also a function of the current interest rate environment. We are likely to reduce this buffer in a higher interest rate environment.

Source: Moody's Investors Service

In some trusts, an interest rate swap or cap mitigates the asset-liability mismatch.[5]

DIFFERENT INTEREST RATES IN A SHIFTING MIX OF LIABILITIES

To account for different interest rates between senior and subordinate securities, we stress the liabilities' weighted average interest rate. Because the senior-ranking securities amortize before the subordinate ones, the weighted average coupon on the combined securities will increase during the early amortization.

Stressing the Market Value of the Residual Balance

As part of our cash flow analysis, we determine the value of the portfolio that remains at the transaction's legal final maturity. The rights to the receivables vary generally by jurisdiction or by transaction. Given the relatively low principal payment rate that we assume in our analysis, some residual portfolio remains at the securities' legal maturity. In securitizations, investors may lose the right to collect on these receivables after that date. We also analyze the secondary market in a jurisdiction to understand whether a portfolio sale is likely.

Since portfolio performance deteriorates following account closure, we estimate the market value of the residual balance based on the assumption that the accounts sell at a sharp discount to face value. The discount rate we use depends on the legal provisions requiring or permitting a sale, the sponsor's strength and the portfolio's credit quality. We apply the lowest discount rate to transactions with a mandatory receivable sale provision. If there are no mandatory sale provisions in the trust documentation, we consider the quality of the portfolio and the bank's importance in its country's banking system. A moderate discount rate applies to transactions where the sponsor is a diversified financial institution, systemically important[6] and has a securitized portfolio of prime quality.

We expect diversified and systemically important sponsors of prime portfolios will have more time and a greater variety of options to successfully wind down a portfolio than a sponsor whose sole focus is managing a weaker, lower-credit-quality portfolio. We measure portfolio quality by the Aaa LGSD, but limit any credit influence the legal structure has on the measurement (for example, differences in the legal final periods), because we expect the best-quality portfolios will be those with the lowest Aaa LGSDs. The highest discount rate will apply to residual receivable balances in transactions with weak or no sale provisions and whose sponsors are not diversified or systemically important institutions operating prime quality credit card businesses.

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5   For more information, see our cross-sector methodology for assessing counterparty risks in structured finance transactions, including swap counterparty related risks. A link to a list of sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

6   Our ratings and CR assessment for a systemically important institution reflect that the institution benefits from some degree of governmental support.

For example, the trust documents for most transactions in the US stipulate a mandatory sale of the collateral at the legal final maturity. In this case we apply the lowest discount rate, resulting in a 55%-60% haircut to the face value of the collateral. For other trusts, if we apply the moderate discount rate, there is a 65%-70% haircut, and with the highest discount rate, a haircut of approximately 80%. We may also assign a residual value of zero to collateral in less-liquid markets with a limited history of card portfolio sales.

The longer the amortization period (defined as the time between the expected and legal maturity date), the lower the residual balance that will be subject to an adjustment. However, in our maximum stress scenario, we limit the benefit we can give to payments from cardholders after a certain period following account closures. We generally cap the amortization period at approximately four years.[7]

We perform our portfolio assessment and cash flow analysis to derive the Aaa LGSD, which is the maximum stress level of CE for the transaction, consistent with a Aaa (sf) rating. See Appendix 3 for more information on how we model cash flow in a typical credit card transaction in the US to calculate the Aaa LGSD.

Step 2: Aaa CE

Repayment of ABS depends primarily on the performance of the assets collateralizing the securities. However, in revolving consumer credit products such as credit cards, the performance of the assets depends to a large degree on the transaction sponsor's ability to maintain card utility by keeping the accounts open and extending the revolving part of the credit limit not funded by the ABS. We use the dependency ratio to capture this dependency on the sponsor.

We determine the level of CE consistent with a Aaa (sf) rating by lowering the Aaa LGSD according to the applicable dependency ratio. The dependency ratio varies according to a sponsor's CR assessment. The higher the sponsor's CR assessment, the lower the dependency ratio. This relationship implies that a maximum stress scenario is less likely in a transaction with a sponsor that has a high CR assessment, meaning it is less likely to close accounts and more likely to support the trust even under adverse conditions.

We use the maximum stress scenario determined in Step 1 (the Aaa LGSD) without applying any adjustments for sponsors with very low CR assessments because we assume that a sponsor that is insolvent or near insolvency will close poorly performing accounts. Therefore, for sponsors with very low CR assessments (e.g., Caa2(cr)), the Aaa LGSD will equal the Aaa CE.

The Aaa CE is lower for a sponsor with a high CR assessment. Such a sponsor is more likely to try to prevent further performance deterioration of a poorly performing portfolio by selectively closing accounts, lowering credit limits, or selling the portfolio to another sponsor that can pursue those strategies. We adjust this assumption in specific circumstances, such as when the card operations are a non-core business of a sponsor, or when a sponsor has publicly indicated that it intends to exit its card business by selling or winding down its portfolio. As noted earlier, to keep the accounts open in the event of an early amortization, a sponsor needs to finance the accounts with alternative funding sources rather than through the securitization market. A sponsor with a high CR assessment could access this financing.
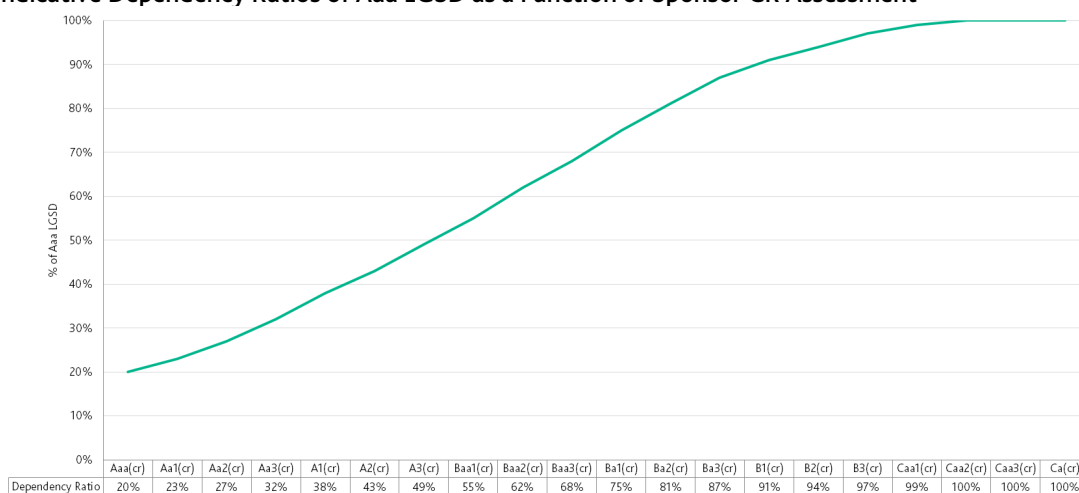
Moreover, financially sound sponsors have a greater ability to prevent their transactions from entering early amortization, typically by either discounting principal to boost yield and further excess spread, or by replacing weaker credit quality card accounts with better quality card accounts. Finally, sponsors with high

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[7]   If the structure incorporates a long amortization period to match expected average life of revolving consumer loan or credit card products with historically low payment rate, we may give benefit to a longer amortization period.

CR assessments can increase the amount of CE in their transactions, thus protecting investors from greater losses during an early amortization.

As a result, for transactions with sponsors that have high CR assessments, we use the Aaa LGSD as a benchmark to determine the maximum level of portfolio losses during an early amortization and then lower that enhancement level to account for a sponsor's likelihood of financial distress, based on its credit quality. The Aaa CE for a particular transaction represents a percentage of the transaction's Aaa LGSD, based on the credit quality of the transaction's sponsor. Exhibit 6 shows the dependency ratios we generally apply for a transaction, as determined by the sponsor's CR assessment.

EXHIBIT 6
Indicative Dependency Ratios of Aaa LGSD as a Function of Sponsor CR Assessment

	Aaa(cr)	Aa1(cr)	Aa2(cr)	Aa3(cr)	A1(cr)	A2(cr)	A3(cr)	Baa1(cr)	Baa2(cr)	Baa3(cr)	Ba1(cr)	Ba2(cr)	Ba3(cr)	B1(cr)	B2(cr)	B3(cr)	Caa1(cr)	Caa2(cr)	Caa3(cr)	Ca(cr)
Dependency Ratio	20%	23%	27%	32%	38%	43%	49%	55%	62%	68%	75%	81%	87%	91%	94%	97%	99%	100%	100%	100%

Source: Moody's Investors Service

The dependency ratios represent the percentage of the Aaa LGSD to achieve a Aaa (sf) rating on the credit card ABS, based on the sponsor's CR assessment. [8]

The dependency ratios reflect (1) the likelihood of severe stress in the event of account closures, and (2) potential shortfalls in an early amortization if the accounts remain open but the sponsor chooses not to support the transaction. Securities must have some CE to achieve a Aaa (sf) rating, even for sponsors with the highest CR assessments, because sponsors are under no contractual obligation to support their trusts.

Because a sponsor with a high CR assessment is unlikely to wind down its portfolio, the enhancement covers the risk that performance deteriorates to the point that excess spread does not cover the charge-offs. This depends on the transaction's structure, particularly on the support that the excess spread provides to cover defaults, which will affect the likelihood of triggering an early amortization. We also account for this in the Aaa LGSD through the benefit we give to excess spread. An economic downturn could lead to such a scenario, causing the sponsor to withdraw support rather than taking measures to offset performance deterioration.

Although the transaction documentation does not stipulate a contractual support obligation, sponsors have an incentive to avoid early amortization by providing additional support. However, doing so could require the sponsor to close accounts if it does not have alternative funding sources. In practice, sponsors have

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[8]   For more information, see Appendix 1.

provided some support, e.g., by adding CE or using a principal discounting mechanism to their transactions. A sponsor's reaction toward performance deterioration depends on, among other things, the following:

» sponsor's financial health

» sponsor's concern about its reputation in the capital markets

» importance of the credit card business and credit card securitization as a financing source to the sponsor and any history of support

» accounting and tax treatment of any potential support

» extent to which the regulatory environment allows sponsors to provide support to transactions

These factors could affect the likelihood that a solvent sponsor will support a poorly performing portfolio, and therefore affect the shape and determine the lowest levels of the dependency curve in Exhibit 6. Notwithstanding the sponsor CR assessment, we will likely adjust the standard dependency curve upward if we expect that a sponsor is less likely to provide any type of support. There are significant differences by jurisdiction with respect to a sponsor's positioning toward a securitization structure. When relevant, we reflect these differences in our assumptions. [9]

We may also adjust the dependency ratio within the standard curve if there is a probability of account closures outside of a sponsor's financial distress. More specifically, we may adjust this assumption in specific circumstances, such as when the card operations are a non-core business of a sponsor, or when a sponsor has publicly indicated that it intends to exit its card business by selling or winding down its portfolio.

Sponsor CR Assessment

The sponsor's CR assessment determines the dependency ratio that we use to lower the Aaa LGSD and derive the Aaa CE level for a transaction. The Aaa CE level changes as the sponsor's CR assessment changes. Exhibit 7 shows how the Aaa (sf) level of CE on the senior-ranking securities in a credit card trust changes as the sponsor's CR assessment changes, and as we apply the dependency ratios from Exhibit 6 to a Aaa LGSD of 30%.

EXHIBIT 7
Indicative Relationship Between Aaa CE and Sponsor CR Assessment for a Transaction with 30% Aaa LGSD
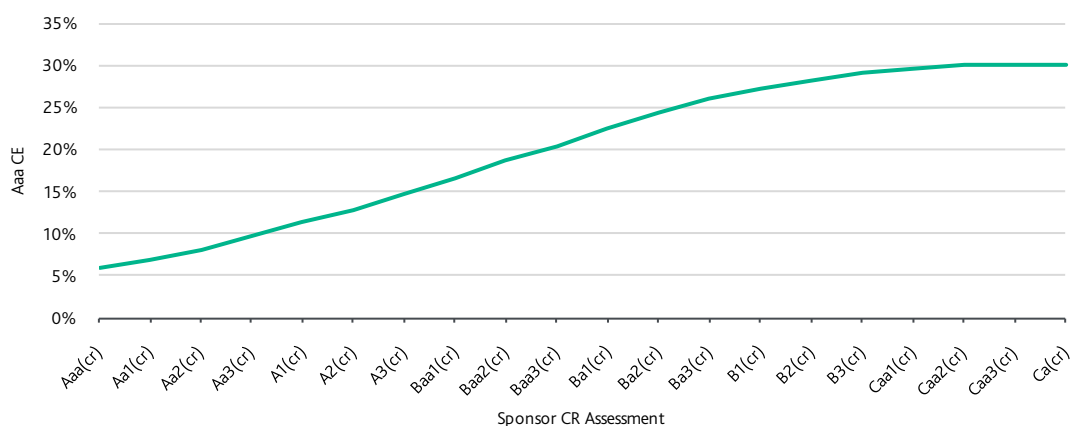
Source: Moody's Investors Service

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[9]   For more information, see Appendix 2.

We generally use the sponsor's CR assessment as a proxy for the likelihood of the closure of its credit card business and thus the wind-down of the portfolio because account closures are more likely if the sponsor is insolvent or near insolvency and because we expect that a successfully resolved bank continues its core activities, such as the origination of credit card receivables. If the credit card business is not considered a sponsor's core activity, or if we have other concerns about the viability of the credit card business upon a sponsor's default, we may apply a lower reference point to assess the wind-down of the portfolio.

If the sponsor is not eligible for a CR assessment [10] or one is not available, we will use the best alternative proxy, which we may, for example, derive from its issuer rating (or equivalent) or, in some cases, its deposit rating (or equivalent). In limited circumstances, a sponsor may qualify for a low-volatility credit estimate in the absence of CR assessment and a rating. [11]

If no CR assessment, rating or credit estimate is available, we assume that the Aaa CE equals the Aaa LGSD. Therefore, if senior-ranking securities have CE equal to or greater than our Aaa LGSD, we may assign a Aaa (sf) rating without a sponsor's CR assessment, provided that the transaction structure mitigates operational, legal and counterparty risks.

Step 3: Senior and Subordinate-ranking Securities Analysis

Step 3A: Senior Securities with Less or Greater Enhancement Than the Aaa (sf) Level

We compare the ratio of available CE to the Aaa CE to the range of such ratios corresponding to a given indicative rating. Exhibit 8 shows the approximate relationship between the ratio of available CE to the Aaa CE, expressed as a percentage, and the rating range for the senior security that would apply before we make any quantitative or qualitative adjustments.

Using Exhibits 6 and 8, we determine how a change in the sponsor's CR assessment impacts the rating of senior-ranking securities. For example, the Aaa LGSD for a transaction is 30% and the sponsor's CR assessment is A2(cr). Exhibit 6 shows that the dependency ratio for a sponsor with an A2(cr) CR assessment is 43% and the resulting Aaa CE is 12.9% (0.43 x 30%).

If we downgrade the sponsor's CR assessment to Baa1(cr), the dependency ratio will increase to 55%, resulting in an increased Aaa CE of 16.5% (0.55 x 30%). Because the senior security has a CE of only 12.9%, it has 78% of the new Aaa CE (12.9%/16.5%). As a result, we would likely downgrade the rating on the senior security to Aa1 (sf) based solely on this ratio, as Exhibit 8 indicates. Further adjustments might be necessary to account for trust-specific characteristics.

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[10]   For example, the entity is not a bank, or a bank-like entity.

[11]   For more information, see our cross-sector methodology on the use of credit estimates. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

EXHIBIT 8
**Available CE to Aaa CE Ratio Mapped into Output for Senior-ranking Securities**
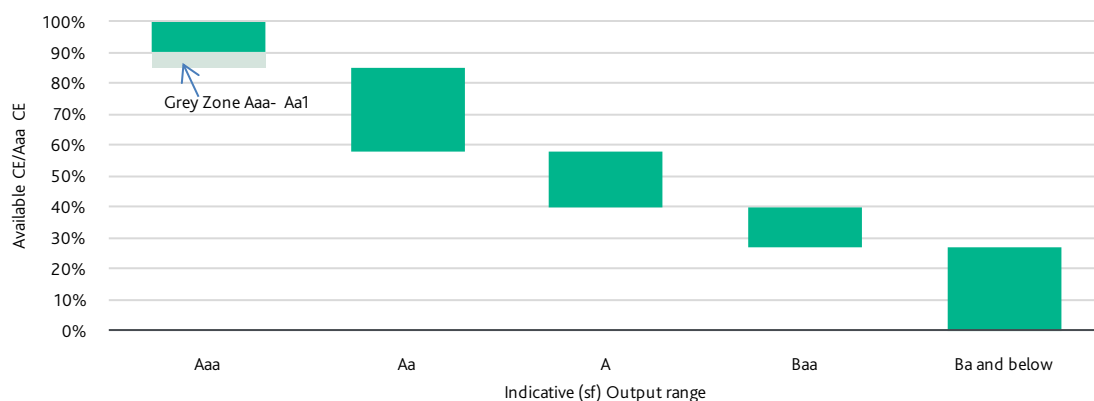
Source: Moody's Investors Service

Exhibit 9 provides an example of rating changes of senior securities that would result from downgrades to two sponsors, whose initial CR assessments were Aa2(cr) and A2(cr), to a final CR assessment of Ca(cr), assuming that the CE remains unchanged and excluding any legal or operational risk, or other quantitative or qualitative adjustments. The solid lines show the migration for a structure where the available CE equals the Aaa CE for the sponsor's initial CR assessment, whereas the dashed lines show the migration for a structure where the CE is 130% of the Aaa CE for the sponsor's initial CR assessment.

We provided the 130% examples to illustrate the strength of the senior security ratings as the sponsor CR assessment declines. For the 130% case with the Aa2(cr) sponsor, the senior securities retain the Aaa (sf) rating as long as the sponsor maintains a CR assessment of A1(cr) or above. For the 130% case with a sponsor with an A2(cr) CR assessment, the senior securities retain the Aaa (sf) rating as long as the sponsor maintains a CR assessment of Baa2(cr) or above.

EXHIBIT 9

Example of Senior Security Rating Migration from Aaa (sf) as a Result of Downgrade to Sponsor's CR Assessment
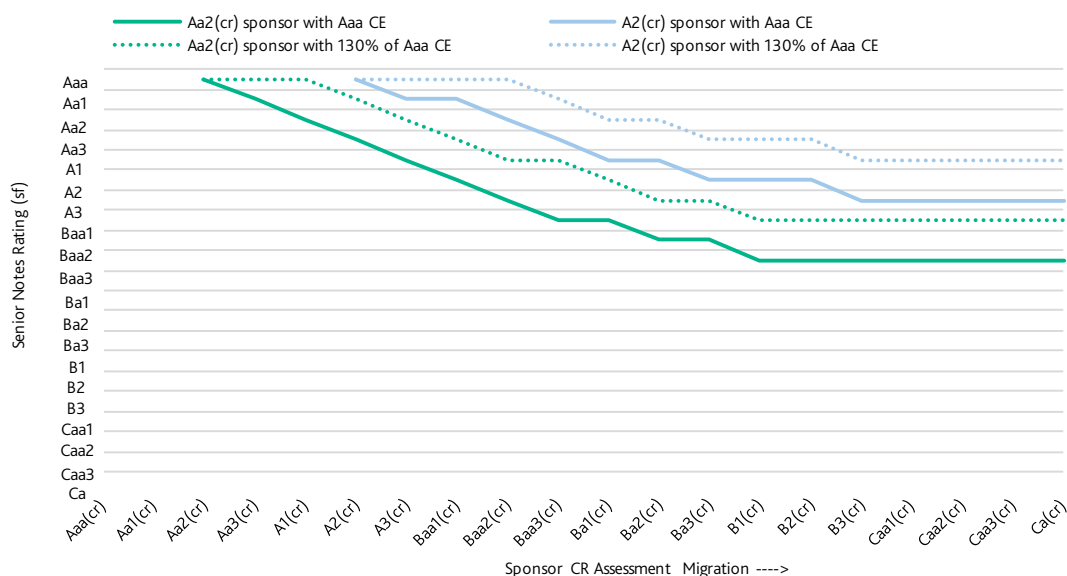
Note: This example assumes (1) a Aaa LGSD of 30%, (2) two sponsors, one with a CR assessment of Aa2(cr), the other, A2(cr), whose CR assessments we subsequently downgraded to Ca(cr), and (3) that the sponsors do not add any CE to their transactions.

In the example for the solid lines, the initial Aaa CE is the product of the Aaa LGSD and the indicative dependency ratio in Exhibit 6 based on the initial sponsor CR assessment. Upon a sponsor CR assessment downgrade, the new Aaa CE is the product of the Aaa LGSD and the dependency ratio adjusted for the sponsor's new CR assessment. We then calculate the ratio of the initial Aaa CE to the new Aaa CE and map this ratio to an indicative model output using Exhibit 8.

For the dashed lines, the amount of Aaa CE is 130% of the amount of initial Aaa CE in the solid line scenarios.

Source: Moody's Investors Service

Step 3B: Subordinated Securities Analysis

Subordinate Securities Ratings More Sensitive to the Sponsor's Credit Quality

Given the smaller size and limited CE of a transaction's junior securities, their performance typically correlates more with the sponsor's financial health than does the performance of the senior securities. If a sponsor is in financial distress and closes its accounts, the junior securities will likely incur a loss, unless they have sufficient CE to absorb the shortfalls that arise as the pool performance deteriorates.

Even if the sponsor is not in financial distress, the rating on the subordinate securities would still be sensitive to the sponsor's credit quality, as we generally assume that the sponsor would support its trust for as long as possible. Typically, we will not rate a subordinated security with an expected severity of around 50% more than two notches lower than the sponsor CR assessment, given our assumption that a sponsor is likely to support its trust as long as it is not in financial distress.

However, since the sponsor has no contractual obligation to support the transaction, we typically cap the benefit we give to sponsor support. As a result, we generally will not rate a subordinate security higher than Baa1 (sf) if it has limited or no hard CE (i.e., subordination or over-collateralization) to support it.

Assessing Loss Severity

Severity is a key consideration because the smaller size of subordinate securities leads to a higher loss severity for each dollar of shortfall that exceeds the subordinate securities' CE. For example, a loss of $2 on

a senior security of $100 leads to a loss severity of 2%, whereas the same loss of $2 on a junior security of $5 leads to a severity of 40%.

To measure the loss severity on the subordinate securities, we determine a scenario that is less stressful than the one we use to derive the Aaa LGSD level. In this scenario, we assume account closures that result in a pool expected loss, and then we calculate the conditional severity using the expected loss given sponsor default (ELGSD), the CE supporting the subordinate securities, and the relative size of the subordinate securities in the capital structure.

The ELGSD scenario is a key input we use to derive subordinated securities' ratings. For each transaction where we assess the Aaa LGSD, we also determine the ELGSD. The implied multiple between the ELGSD and Aaa LGSD ranges from 3 to 10, with a higher multiple corresponding to a lower ELGSD. Exhibit 10 provides the ELGSD levels that correspond to Aaa LGSD levels.

EXHIBIT 10
Indicative ELGSD Values that Correspond to Aaa LGSD Levels

Aaa LGSD	ELGSD
15.0%	1.5%
16.0%	1.6%
17.0%	1.8%
18.0%	2.0%
19.0%	2.2%
20.0%	2.5%
21.0%	3.0%
22.0%	3.5%
23.0%	4.0%
24.0%	4.5%
25.0%	5.0%
26.0%	5.5%
27.0%	6.0%
28.0%	6.5%
29.0%	7.0%
30.0%	7.5%
31.0%	8.0%
32.0%	8.5%
33.0%	9.0%
34.0%	9.5%
35.0%	10.0%
36.0%	10.5%
37.0%	11.0%
38.0%	11.5%
39.0%	12.0%
40.0%	12.5%
41.0%	13.0%
42.0%	13.5%
43.0%	14.0%
44.0%	14.5%
45.0%	15.0%

Source: Moody's Investor Service

Available CE/Aaa CE Ratio and Loss Severity Adjustment

To evaluate subordinate securities' ratings, we first consider the ratio of available CE to Aaa CE, as in Exhibit 8. We then adjust down the indicated rating from Exhibit 8 by a baseline two-notch adjustment that corresponds to an expected severity upon sponsor default on the subordinated securities of around 50%.

We make an additional downward adjustment (by one notch) for subordinate securities where we expect the severity to be very high, i.e., typically higher than 70% based on our Idealized Expected Loss table over a three-year horizon.[12] Conversely, we make an upward adjustment (by one notch) for subordinate securities where we expect the severity to be low, i.e., typically lower than 30%, based on our Idealized Expected Loss table over a three-year horizon.

We calculate the expected loss severity of the subordinate security using the transaction's ELGSD, the CE supporting the subordinate security and the thickness of the subordinate security. For example, if we have a 7% subordinated Class B security with an 8% Class C security underneath and a 10% ELGSD, we would expect the Class B to have a severity of 29% (10% expected losses - 8% Class C = 2% losses applicable to the 7% Class B).

To summarize, the rating of the subordinate securities will be the higher of:

1) the rating derived from the available CE to the Aaa CE ratio (reduced by one to three notches for severity)

2) the lower of Baa1 (which we may reduce or increase by one notch for severity) and the sponsor CR assessment (reduced by one to three notches for severity)

Exhibit 11 shows an example of a security rating and the rating migration of one senior and two subordinate securities as the sponsor's CR assessment changes from a A2(cr) while the CE stays unchanged (assuming no legal or operational risks). To each sponsor CR assessment level, we associate a Aaa CE that serves as the denominator of the ratio of available CE to Aaa CE. We apply the framework in Exhibit 8 and make severity adjustments for subordinate securities to determine a rating for each security and each sponsor CR assessment level. We may cap further the securities' ratings when we also apply to these results our approach for securities in default.

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[12] For more information, see *Rating Symbols and Definitions*. A link can be found in the "Moody's Related Publications" section.

EXHIBIT 11

Example of ABS Rating Migration for a A2(cr) Sponsor Assuming No Adjustment to CE When the Sponsor CR Assessment Changes
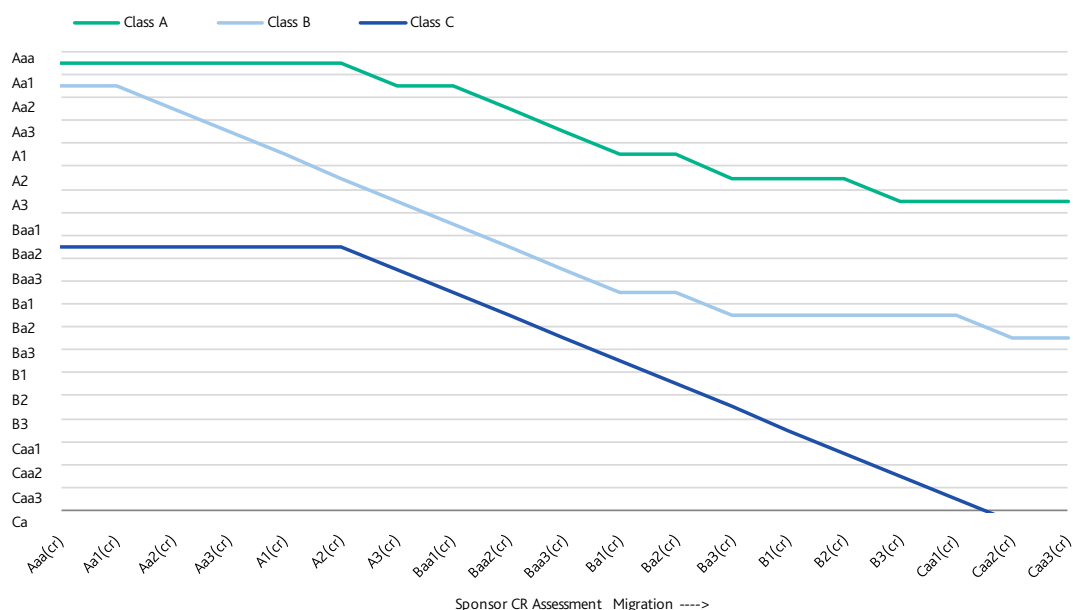
Source: Moody's Investors Service

Assumptions for Exhibit 11

Aaa CE Calculation

Aaa LGSD	35%
Sponsor CR Assessment	A2(cr)
Dependency Ratio	43%
Aaa CE	15%
Expected Loss Given Sponsor Default	10%

Capital Structure	Class A	Class B	Class C
Security Size (as % of Invested Amount)	85%	7%	8%
Security CE (as % of Invested Amount)	15%	8%	0%
Available CE/Aaa CE	100%	53%	0%
Expected Severity Given Sponsor Default	0%	29%	100%
Initial Security Rating	Aaa(sf)	A2(sf)	Baa2(sf)

Source: Moody's Investors Service

Excess Spread Capture Mechanisms in the Securities' Available CE

Available CE, for either senior or subordinate securities, typically includes subordination, reserve accounts and other forms of hard enhancement, as well as the benefit we give to potential excess spread-trapping triggers. In our rating approach, we determine the benefit we give to these triggers based on how much excess spread a trust would capture if its performance deteriorated at a pace consistent with prior early amortizations. We further stress this amount based on the securities' ratings that benefit from the triggers, so that the higher the securities' ratings, the lower the benefit given to the triggers.

Trapping mechanisms have generally been of little value to investors in past early amortizations because these mechanisms only captured a small amount of excess spread before the trust entered early

amortization. We adjust the benefit we give to excess spread-trapping triggers based on, among other things, the tightness of the triggers (i.e., how early or late the issuers must start trapping excess spread relative to the beginning of the early amortization) and the metrics the transaction stipulates to determine whether excess spread must be trapped.

Other Considerations (Step 4)

Along with our asset, structural and liability analysis, *we consider other quantitative and qualitative factors in our credit analysis such as transaction counterparties, legal risks, reliability and completeness of historical and portfolio data, country ceilings, and environmental, social and governance (ESG) considerations.*

We adjust the Aaa CE derived from the dependency curve to incorporate the transaction's specific risks discussed below. If such risks are material, and appropriate structuring or additional CE or liquidity does not mitigate them adequately, we might cap the transaction's ratings.

Counterparty Risks

We consider various counterparty-related risks at different stages throughout our credit analysis. More specifically, the risks we consider include operational risks, commingling risk, and account banks risk.[13] Based on our review, we may adjust our assumptions, inputs or model results. If information is limited, we may also adjust the rating level.

Hedge Counterparties

We analyze the rating impact of exposures to hedge counterparties including assessing the probability of a transaction becoming unhedged and deriving additional potential losses. As part of our analysis, we may conclude that we adjust the ratings to reflect the linkage and additional loss.

Our approach to assessing the rating impact of linkage to swap counterparties in structured finance cash flow transactions depends on various factors, including (1) the counterparty's credit quality; (2) the trigger provisions in the swap documents; (3) the type and tenor of the swap; (4) the amount of CE supporting the securities; (5) the size of the relevant tranche; and (6) the rating on the securities before accounting for the effect of the linkage.

Operational Risk[14]

Operational risks can arise from various potential sources, including disruption to cash flows caused by the financial distress of a service provider to the credit card receivables transaction. As part of our analysis, we consider the financial disruption risk and the roles of servicers, cash managers, calculations agents, trustees and similar parties.

Operational risk for credit card receivables transactions relates to the effect of servicer insolvency on servicing and cash management, as well as any structural mitigants, such as servicer replacement triggers. It arises from (1) a transaction party that is deficient in performing important tasks; and (2) nonperformance of a transaction party's duties following termination or disruption of operations after bankruptcy or

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[13] For more information, see our methodology for assessing counterparty risks in structured finance transactions. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

[14] For more information, see our cross-sector methodology for assessing counterparty risks in structured finance, including operational risks. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

receivership. In a transaction structure that does not adequately address the operational risks, we might cap the securities' ratings at lower levels.

Commingling Risk

In credit card receivables transactions, funds owed to investors may be "commingled" with funds of another transaction party prior to the funds' transfer to the issuer's account. If that other party becomes bankrupt, it may be difficult to determine the source and ownership of the commingled funds, resulting in an additional loss for investors. Our analysis captures whether commingling risk exists in a transaction, determines the credit quality of the party and the exposure, and incorporates the additional loss.[15]

We also assess the risk that cash collections of the transaction will not be remitted by the servicer to the issuer. In some transactions and subject to certain other conditions being met, commingling risk may be fully mitigated. For example, under English law, a collection account that is held with a third-party account bank and that is subject to a valid declaration of trust which excludes it from the bankruptcy estate of the servicer, could fully mitigate the risk. As another example, the FDIC in the US has adopted a safe harbor rule to the effect that it will remit, as the insolvency official for US banks, collections to the issuer in accordance with the transaction documents when a bank sponsoring a credit card program defaults. To be considered as a full mitigant, a bank sponsor may be required to meet certain other conditions as stated in the relevant regulation.

Where the risk is not fully mitigated, we evaluate the probability that a servicer will become bankrupt at a time when it is still receiving collections, and the resulting loss to the transaction.

The probability of such commingling mainly depends on the credit quality of the servicer and the effectiveness of any redirection triggers. The extent to which commingling risk will cause a loss to a transaction depends on various factors, including the frequency of cash sweeps from the servicer to the issuer, the expected monthly payment rate before a servicer bankruptcy, the time needed to redirect collections, and the applicable laws and regulations in the relevant jurisdiction.

We assess these factors in accordance with our approach to commingling risk. To measure the loss exposure in the Aaa LGSD scenario, we typically assume a loss rate equal to the expected monthly principal payment rate during the first period following sponsor default,[16] adjusted for a recovery rate of 45%. Other positive or negative adjustments may be considered in our analysis by rating committees on a case-by-case basis resulting in an adjusted exposure at risk. Adjustments may, for instance, result from mitigating factors such as reserve funds, additional subordination, effective borrower redirection triggers or other structural mitigants.

Once we determine a commingling loss, we will add the loss percentage to the Aaa LGSD and then perform our analysis as described above (see Steps 1 to 3).

Legal Risks

We assess legal risks that may affect the expected losses posed to investors. In particular, we consider the potential legal consequences of whether the issuer is bankruptcy remote. We review legal opinions at closing to inform our views on the key legal risks identified in a transaction.

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[15] For more information, see our cross-sector methodology for assessing counterparty risks in structured finance, including commingling risk. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

[16] See the "Principal Payment Rate" section.

We assess the transaction's legal structure, including idiosyncratic structural features that we have not modeled explicitly. Our analysis of the legal aspects of the transaction ensures that its documentation reflects our assumptions regarding asset quality and transaction structure. As part of the legal analysis, we also review legal opinions to ensure that they adequately address any concerns regarding the assignment of the assets to the trust, bankruptcy remoteness of the trust, or other jurisdiction-specific issues.

Bankruptcy Remoteness of the Issuer

We analyze whether the issuer is bankruptcy remote such that the likelihood of (1) a bankruptcy filing by or against it; or (2) substantive consolidation – that is, the pooling of the issuer's assets and liabilities with those of a bankrupt affiliate – is so low that it has no rating impact. If we determine that the issuer is not bankruptcy remote, we assess the potential rating impact on a case-by-case basis according to the likelihood of bankruptcy and the possible negative consequences for investors.[17]

Local and Foreign Currency Country Ceilings

The country in which the transaction's assets, originator or issuer is located could introduce systemic economic, legal or political risks to the transaction that could affect its ability to pay investors as promised. We usually incorporate such risks into the analysis by applying the local currency country ceilings (LCC) in accordance with our country ceiling methodology.[18]

We typically consider the CE consistent with the maximum achievable rating in a given country to be the same as the Aaa CE determined in application of Step 2 of this approach.

As a consequence, we typically lower the rating output from Step 3 by a number of notches equal to the difference between Aaa and the LCC (subject to the rating floor for subordinated securities mentioned in Step 3B). For example, if the LCC is Aa2, we lower the rating by two notches. In instances, where the LCC is at or lower than A3, we may adjust our analysis of mezzanine and junior securities by taking into account additional qualitative factors.

Environmental, Social and Governance Considerations

Environmental, social and governance (ESG) considerations may affect the ratings of securities backed by a portfolio of credit card receivables. We evaluate the risk following our cross-sector methodology that describes our general principles for assessing these ESG issues[19] and may incorporate it in our analysis.

Monitoring

In this section, we describe our approach when monitoring transactions.

Transaction Performance

We generally apply the key components of the approach described in this report when monitoring transactions, except for those elements of the methodology that become less relevant over time, such as

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17   For more information, see our methodology on bankruptcy remoteness criteria in structured finance transactions. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

18   For more information, see our approach to assigning local and foreign currency country ceilings. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

19   For more information, see our methodology that describes our general principles for assessing ESG issues. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

the review of a legal structure that has not changed. We also typically receive extensive data on transaction-specific performance that we use to monitor transactions.

When monitoring the performance of outstanding credit card transactions, we track the following:

- » general regulatory and macroeconomic environment

- » performance of the underlying collateral

- » developments regarding the originator, servicer and other transaction participants

- » amount and form of CE

- » factors that affect the integrity of the legal structure

Typically, our starting point is monitoring the sponsor's credit strength and the collateral performance relative to our expectations, as well as the CE available in the transaction. When appropriate, we run a model similar to when we assign the initial ratings.[20]

Pool Size

In assessing pool diversity for credit card receivables-backed transactions, we look beyond the nominal number of borrowers in a pool to take into account the actual size of the borrowers' loans. We express this pool diversity measurement, referred to as the effective number, in terms of equal-sized exposures, using the formula in Exhibit 12.

We typically use loan-level information to calculate an effective number of borrowers or loans.

EXHIBIT 12

$$Effective\ Number\ of\ n\ Borrowers\ (or\ Loans) = {1}/{\sum_{i=1}^{n}(W_i)^2}$$

Where:

   W_i is the weight of a borrower (or loan) i in the total pool.

Source: Moody's Investors Service

We do not assign nor maintain ratings on securities from credit card receivables-backed transactions with the following characteristics:

- » Transactions without support mechanisms, such as a credit enhancement floor or reserve fund floor, when the underlying pool has decreased to an effective number of borrowers or loans of 75 or below. If we cannot obtain the effective number, we will use a threshold of 130 instead.

- » Transactions with a reserve fund or credit enhancement floor, which partially compensates for the increased exposure to single borrowers, when the underlying pool has decreased to an effective number of borrowers or loans of 50 or below. If we cannot obtain the effective number, we will use a threshold of 90 instead.

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[20] For example, in methodologies where models are used, modeling is not relevant when it is determined that (1) a transaction is still revolving and performance has not changed from expectations, or (2) all tranches are at the highest achievable ratings and performance is at or better than expected performance, or (3) key model inputs are viewed as not having materially changed to the extent it would change outputs since the previous time a model was run, or (4) no new relevant information is available such that a model cannot be run in order to inform the rating, or (5) our analysis is limited to asset coverage ratios for transactions with undercollateralized tranches, or (6) a transaction has few remaining performing assets.

However, we make exceptions for securities with ratings that do not rely on our assessment of individual obligor creditworthiness, such as those that benefit from a full and unconditional third-party guarantee, whether at pool or security level,[21] or for securities that benefit from full cash collateralization.

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[21] For more information, see our rating methodology for assessing transactions based on a credit substitution approach. A link to a list of our sector and cross-sector methodologies can be found in "Moody's Related Publication" section.

Appendix 1: Expected Loss and Probability of Default Calculations Backing the Dependency Curve

We derive our dependency ratios from calculations of a transaction's expected loss and probability of default in two scenarios: one in which a sponsor closes accounts and one in which it does not. To calculate the security's overall expected loss and probability of default, we calculate a weighted average of each of the scenario's results. The weights in the calculation are (1) the probability of sponsor default or financial distress; and (2) the probability that the sponsor is not in financial distress. We will also consider an additional probability of account closure outside a sponsor default or financial distress in certain circumstances, such as a poorly performing non-core business or a sponsor's history of not supporting transactions.

In both cases, we use our assessments of the pool's expected shortfalls and their variability to derive a lognormal probability distribution. We plot this distribution using a measure of the central tendency and the dispersion (e.g., the standard deviation or a percentile). We derive the central tendency from the pool's expected shortfalls depending on whether the sponsor closes the accounts or leaves them open. We infer the standard deviation from the level of CE consistent with a Aaa (sf) rating in that scenario, meaning that with the Aaa level of CE, a security with a simple structure would have a default probability and an expected loss consistent with a Aaa (sf) rating. We adjust the standard deviation of the distribution until the calculated expected loss is consistent with a Aaa expected loss.

Once we determine the shortfall distribution, we use that distribution to determine the probability that the shortfalls exceed the security's CE level. Similarly, to determine a security's expected loss, we use the shortfall distribution to calculate the investor loss in each scenario in which the shortfall exceeds the CE. The expected loss is the weighted average of those losses. The weight is the probability of that loss scenario.

Scenario I: Sponsor Closes Accounts

In this scenario, our assumption about the CE level consistent with a Aaa (sf) rating is the Aaa LGSD, which we describe in Step 1 of this methodology. We base our expected shortfall (or the pool's expected loss upon sponsor default) on the portfolio's characteristics and the historical shortfalls in transactions in which an early amortization occurred and the sponsor closed the accounts. In our approach, we differentiate trust performance in the event of a sponsor default based on, among other things, the portfolio's characteristics and performance, as well as on the economics (e.g., excess spread) and structural features (e.g., legal maturity) of the trust. As a result, we have a wider range of expected loss assumptions (ELGSD) than those historically observed in early amortizations.

Scenario II: Sponsor Does Not Close Accounts

In this scenario, we base our assumption about the CE level consistent with a Aaa (sf) rating on the shortfalls in the stress event that is not as severe as in Scenario I. In such a scenario, we usually assume that the expected shortfalls are close to zero, given the typical credit quality of the obligors, the sponsor's motivation to provide voluntary support (and general history of sponsor support), the ongoing charges on, and utility of, the accounts, and other structural protections. We may modify our assumption depending on transaction- or jurisdiction-specific factors.

Dependency Ratios: CE Changes That Offset Changes in Sponsor Credit Quality

The Aaa LGSD is the minimum CE consistent with a Aaa (sf) rating for a particular security if the weight in Scenario I equals one, the weight in Scenario II is zero, meaning the sponsor defaults.

For a transaction where a sponsor is upgraded and, therefore, after the upgrade has a lower default probability, the default probability and expected loss of the securities will be lower because we will assign a lower weight to Scenario I and a higher weight to Scenario II. Therefore, the CE prior to a sponsor's upgrade will be higher than the new amount necessary to be consistent with a Aaa (sf) rating. In that case, the CE could be lowered to the new minimum CE consistent with a Aaa (sf) rating (i.e., the new Aaa CE) for the security with the transaction sponsor with a higher credit quality.

A change in the sponsor's credit quality has different effects on the security's Aaa CE based on the characteristics of the transaction. The effect may also differ depending on whether we are using the security's expected loss or probability of default as the basis of our calculations. For simplicity, we have calculated a set of average effects, as Exhibit 13 shows, based on both expected loss and probability of default across transactions with varying characteristics.

EXHIBIT 13
Dependency Ratios as a Function of Sponsor Credit Quality
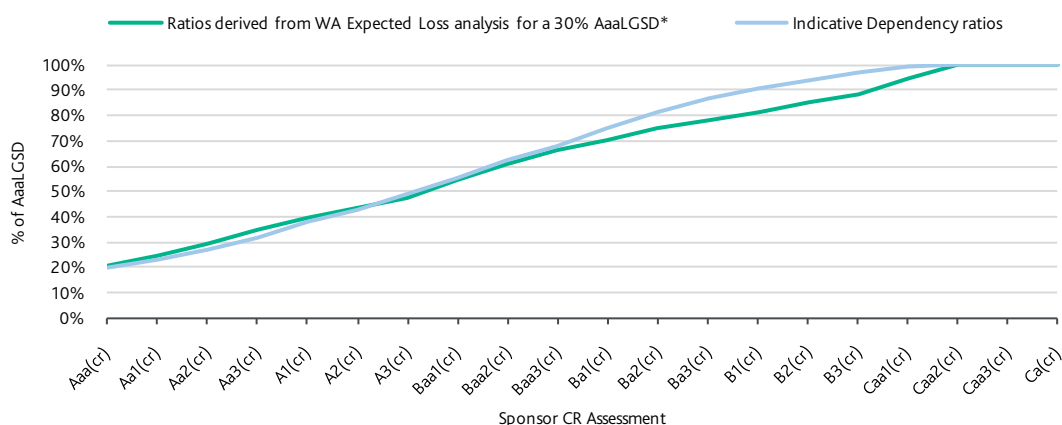
* In this example, we derive the default probability corresponding to the sponsor credit quality (using its CR assessment) from Moody's Idealized Cumulative Expected Default table to weight the securities' expected loss in each of the two scenarios.

Source: Moody's Investors Service

Subordinate Securities: Impact of Limited CE

If a security benefits from limited CE besides that provided by excess spread, its expected loss in both scenarios becomes the expected shortfall in each scenario divided by the size of the security. This is not the case when the security benefits from CE: the security's expected loss does not equal the pool's shortfall in all instances. Rather, it is a function of the probability attached to each shortfall scenario in which the CE is smaller than the shortfall. We then calculate a weighted average of the two scenarios using the sponsor's default or financial distress for Scenario I and using the probability of sponsor not defaulting for Scenario II. We typically adjust the sponsor's default probability in Scenario I by two notches to account for the probability of financial distress ahead of sponsor default.

Because the expected shortfall in Scenario II is usually close to zero, the security's expected loss correlates closely with the product of (1) the sponsor's default probability or financial distress, multiplied by (2) the pool's expected loss upon sponsor default, divided by the amount of the security's size. For this reason, the rating on a subordinate security with little or no hard CE depends largely on the sponsor's credit quality.

We adjust ratings downward in the following scenarios:

» The pool expected loss (net of spread) in a non-sponsor default scenario is higher than zero.

» We expect that the probability of sponsor support is weaker than usual.

» We expect that the sponsor may close the accounts for reasons other than financial distress.

Appendix 2: Adjustments for Japanese and Korean Credit Card Transactions

Japan

How Japanese Credit Card Securitizations Differ from Those in the US, UK, Canada and Korea

There are several key structural and practical differences between Japanese credit card securitizations and those typically seen in the US, the UK, Canada and Korea, which lead to methodological differences.

In Japanese transactions:

» The sponsors are generally low-investment-grade (or unrated) finance companies offering a wide range of consumer or corporate finance products; the credit card business is often just one of several of the sponsor's businesses. As a result, the probability of the sponsor providing support to its programs in the event of a non-sponsor default will be weaker than in other markets.

» Receivables pools can consist of specifically designated receivables generated by the accounts, rather than all of the receivables originated in the accounts. The sponsor can stop generating newly designated receivables while continuing to generate non-designated receivables. As a result, the trust balance could amortize even if the sponsor does not close the accounts.

» The trust usually allocates principal collections among series pro rata, even if a controlled amortization is in progress.[22] As a result, the structure of credit card receivables transactions in Japan is more like that of a standard consumer loan transaction; securities can incur losses if the sponsor is not in default, if the CE does not cover such losses.

» Generally, collateral pools do not contain convenience user accounts; if they do, their balance is usually funded by the seller's share, and we usually give no benefit to the related cash flow because they would be subject to commingling risk. Nor do we include interchange and fees in the yield.

» Japanese credit cards allow for a number of different payment options for each purchase, including single payment, two payments, installment payments and revolving payments. We determine the contractual minimum payment amounts according to each originator's minimum payment schedule, usually based on the original balance or the outstanding balance at the end of the previous month. Exhibit 14 provides an example. The result is a payment rate that rises sharply toward the end of the product's life.

EXHIBIT 14

Japanese Contractual Minimum Payments as a Function of Original Balance, in JPY

Cash Advances Credit Line	Payment Amount
0 - 200,000	10,000
300,000	20,000
400,000 - 500,000	30,000
800,000	40,000
1,000,000	50,000

Source: Moody's Investors Service

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[22] Principal collections from the credit card receivables are allocated to the investors' portion and seller's portion pro-rata. Principal collections for the investors' portion are allocated among each series according to the outstanding balance (rather than notional balance) of each series pro-rata under a normal amortizing situation.

Implications for the Dependency Curve

We typically adjust the dependency curve for Japanese financial companies to incorporate the lower likelihood that a Japanese sponsor will support its credit card transactions if pool performance deteriorates. This results in a flatter curve than in other credit card markets, with higher implied Aaa CE for sponsors with a rating of Baa or higher.[23] Exhibit 15 shows the potential dependency curve based on a lower support assumption from the sponsor, and therefore a higher loss assumption for investors in scenarios in which the sponsor has not defaulted.

EXHIBIT 15
Dependency Curve Assuming a Lower Likelihood of Support from Sponsor
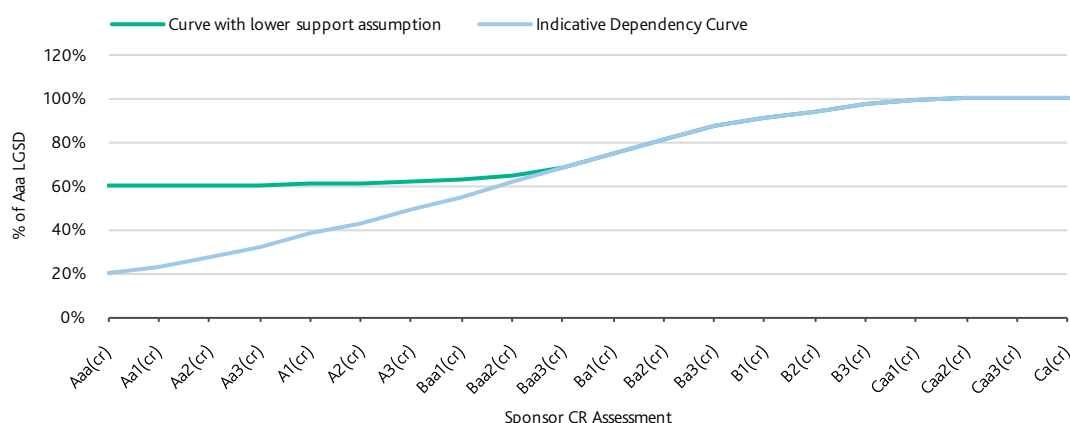
Source: Moody's Investors Service

Yield and Principal Payment Assumptions

YIELD

Because the securitization yield does not include interchange or fees, the difference between our yield assumption pre- and post-sponsor default in our Aaa LGSD scenario in Japan is smaller. The main residual difference is the haircut for delinquent receivables.

PRINCIPAL PAYMENTS

In Japan, we use the minimum contractual payment to model the principal payment rate. Exhibit 16 shows an example of assumed principal payment rate in our Aaa LGSD assumptions for a Japanese trust.

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23   In those cases where the Japanese originator is a bank or bank-like entity, we generally use its CR assessment.

EXHIBIT 16
Example of Principal Payment Rate Profile in Japanese Credit Cards
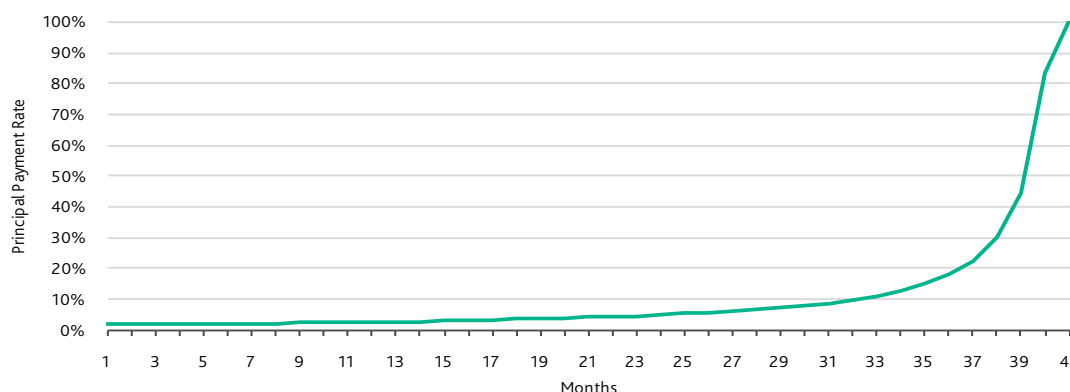
Source: Moody's Investors Service

Overpaid Interest Risk

Some consumer loans originated prior to 2010, including cash advances from credit cards, are subject to claims by borrowers for "overpaid interest" on the loans. If a court grants a claim for overpaid interest, or the originator voluntarily agrees to it, then the originator must calculate the cumulative overpaid interest amount and apply it as a principal payment, thus lowering the remaining principal. If the cumulative overpaid interest exceeds the current principal balance, the originators can refund the remaining overpaid interest amount. Furthermore, if the originator enters bankruptcy, the receiver can recalculate all loans with overpaid interest in the bankruptcy proceedings.

For securitized loans, if the principal balance has been recalculated because of overpaid interest, the originator typically must repurchase the loan from the securitization at full value (i.e., undiluted for overpaid interest reductions of principal). However, if the originator does not repurchase the loan (e.g., if the originator becomes bankrupt), this will dilute the securitization's principal, and the originator will have to pay the remaining claim. Consequently, when transactions include loans subject such overpaid interest, we consider the risk case-by-case in our analysis, taking into account the originator's credit quality and the likelihood of a recalculation of the principal balance.

Korea

How Korean Credit Card Securitizations Differ from Those in Japan, the US, UK and Canada

Korean credit card securitizations also differ from US, UK, Japanese and Canadian credit card securitizations in several key structural and practical ways.

Specifically, in Korean transactions:

» Pools consist of receivables generated by a mix of traditional purchases and cash advances. Purchase repayments can be lump sum, installment or revolving, while cash advance repayments are lump sum or revolving. Moreover, it is common for cardholders with revolving credit limits to repay the full outstanding balance by the monthly payment date. Thus, payment rates are typically high.

» In Korea, cash advance borrowers typically have weaker credit profiles, and thus cash advance receivables are riskier than other credit card products.

» Charge-off rates are typically lower in Korea than in the US, though they can rise quite sharply in an economic downturn, as seen during the Korean credit card crisis of 2003-04.

» Korean credit card operators also offer cash points to credit cardholders for the amount the cardholders spend with their cards, which they can use to settle their outstanding balance. These cash point programs pose additional dilution risk.

» The securitization yield in Korean transactions does not usually include interchange.

» A backup servicer is normally in place at transaction closing.

» Commingling risk tends to be limited because cardholders generally make their payments to the transaction trust account through automatic direct debit.

» Transactions may incorporate cross-currency swaps to mitigate currency mismatches between the credit card receivables and the issued securities.

Charge-off, Yield and Principal Payment Assumptions

Some of the differences between Korean credit card securitizations and those in the US, the UK, Canada and Japan have resulted in modifications to our modeling assumptions.

CHARGE-OFFS

In choosing our Aaa LGSD scenario, we stress charge-off rates at a higher multiple in Korea than in securitizations in those other countries, to reflect the potentially higher volatility of Korean transactions. As a result, we assume that the peak charge-off rate will amount to five times (compared with four times in other markets) the long-run steady-state expected charge-off rate following account closures. Higher payment rate assumptions that reflect the specific product mix in Korea's credit card market mitigate the higher stress on charge-off rates.

YIELD

Yield depends on the mix of lump sum, installment, cash advance and revolving payment products.[24] The average yield tends to be lower than in other markets because (1) portfolios have a higher payment rate; and (2) the yield does not include interchange. When modeling the yield of Korean credit card transactions, we consider the portfolio mix and the interest rate on the respective products.

PRINCIPAL PAYMENT RATE

Like yield, the principal payment rate depends on the mix of payment types. In our Aaa LGSD scenario, we assume a stressed portfolio mix with a high concentration of installment, revolving and cash advance receivables.[25] We assume that the revolving and cash advance payment rates fall to a very low level, reflecting competitive pressures and deteriorating receivables performance might force institutions to lower the minimum payment rates. For installment receivables, we model the repayment based on the actual monthly schedule.

SWAP RISK

Although the balance-guaranteed cross-currency swaps would pose both counterparty and termination risk if the sponsor were to default, we assume that the following standard structural protections adequately address these risks:[26]

» A backup servicer, typically a Korean bank with an investment-grade rating, is in place at closing. The backup servicer has a commitment to take on servicing within 60 days of sponsor default.

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[24] Yields tend to be highest for cash advances, to compensate for the higher credit risk.

[25] These payment types have lower principal payment rates than lump sum products.

[26] For more information, see our cross-sector methodology for assessing counterparty risks in structured finance, including swap counterparty exposures. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

» An independent calculation agent/transaction administrator or trustee will provide instructions to pay the swap counterparty during the two-month servicing transfer transition.

» A reserve fund covers two months of swap payments at the securities' issuer level in the event of a cash flow interruption at the trust level.

» The trustee or transaction administrator controls the transaction accounts.

» The principal amounts exchanged under the swap upon early amortization are based on the amount of cash available in the issuer account. As a result, the only obligation from the issuer to the swap counterparty in the event of sponsor default is to pass the minimum of (1) what is due to the swap counterparty and (2) whatever cash is available at the issuer of the securities.

Appendix 3: Modeling Cash Flows – An Early Amortization Scenario

The following exhibits show a specific stress scenario for a credit card transaction that uses a trust structure common in the US. Below, we list the key assumptions during the amortization period, assuming a full wind-down of the credit card portfolio after the sponsor closes the accounts.

Trust Characteristics Assumptions

» Sponsor CR assessment is A2(cr).

» Historical principal payment rate (PPR) range is 17%-19%.

» Historical peak charge-off rate is 12%.

» Yield range is 19%-21%, including 20% interchange and fees.

» Annual servicing fee is 2%.

» Weighted average note coupon is 1%.

» Floating-rate assets are indexed to one reference rate and floating-rate liabilities are indexed to another, resulting in basis risk.

» Number of months from expected maturity to legal final maturity is 30; we add a buffer of six months to account for the accumulation period and the possible timing of early amortization ahead of the expected maturity date.

» Investors' share of the pool at the beginning of early amortization is 96%. The trust's documentation indicates that during early amortization, the principal allocation is based on the initial security balance divided by the trust balance (fixed numerator).[27] The finance charge allocation is pro rata.

» We assume no dilution or set-off risk.

» Documentation contains a mandatory sale provision at legal final maturity, resulting in a residual value haircut of approximately 60%.

Maximum Stress Scenario Assumptions

In Exhibit 18, we show the different assumptions for key variables during early amortization that we described in Step 1 of this methodology:

» **Principal payment rate (PPR):** The PPR vector is similar to the assumed principal prepayment rate pattern shown in Exhibit 5. The initial PPR is based on the trust's historical payment rates, which we adjust downward for the assumed increase in charge-offs at the start of early amortization. We start with an initial assumption of 12%, corresponding to a 33% discount to the average historical range of 18%, followed by a sharp decline to 3%.

» **Yield:** We assume an average yield of 20%. After removing interchange and fees and assuming a portion of delinquent users, we stress the yield down to 12.2%.

» **Charge-off rate:** We calculate the charge-off rate at the beginning of the wind-down by assuming a breakeven level of excess spread, using the following formula:

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[27] This principal allocation feature is more beneficial for the repayment of investor interest than the fixed percentage principal allocation when the trust balance is declining, as the monthly principal allocation percentage with the fixed numerator increases progressively to 100%.

EXHIBIT 17

$$Breakeven\ excess\ spread = yield - servicing\ fee - coupon - chargeoff\ rate$$

Source: Moody's Investors Service

We assume a long-run steady-state charge-off rate of 12%, equal to the historical peak charge-off rate. As Exhibit 18 shows, the annualized charge-off rate increases rapidly from 17% to a peak of 48% by month eight and then decreases steadily over the following 16 months to 12%, where it remains.

» **Excess spread:** We assume that excess spread after charge-offs is zero just before amortization starts. The starting coupon rate of 1% is the current coupon. We add a buffer of 3.5% (2.5% for basis risk and 1% for the change in weighted average spread as the senior securities amortize), to account for the mismatch in interest rates between assets and liabilities, leading to a coupon rate of 4.5%. We set the servicing fee at a stressed level of 2%, which remains constant over the amortization period.

EXHIBIT 18
Assumptions for Key Variables During Early Amortization*

Month	Payment Rate	Charge-off Rate	Yield	Servicing Fee	Coupon	Excess Spread
0	12.00%	17.00%	20.00%	2.00%	1.00%	0.00%
1	9.75%	20.88%	12.16%	2.00%	4.50%	-15.22%
2	7.50%	24.75%	12.16%	2.00%	4.50%	-19.09%
3	5.25%	28.63%	12.16%	2.00%	4.50%	-22.97%
4	3.00%	32.50%	12.16%	2.00%	4.50%	-26.84%
5	3.00%	36.38%	12.16%	2.00%	4.50%	-30.72%
6	3.00%	40.25%	12.16%	2.00%	4.50%	-34.59%
7	3.00%	44.13%	12.16%	2.00%	4.50%	-38.47%
8	3.00%	48.00%	12.16%	2.00%	4.50%	-42.34%
9	3.00%	45.75%	12.16%	2.00%	4.50%	-40.09%
10	3.00%	43.50%	12.16%	2.00%	4.50%	-37.84%
11	3.00%	41.25%	12.16%	2.00%	4.50%	-35.59%
12	3.00%	39.00%	12.16%	2.00%	4.50%	-33.34%
13	3.00%	36.75%	12.16%	2.00%	4.50%	-31.09%
14	3.00%	34.50%	12.16%	2.00%	4.50%	-28.84%
15	3.00%	32.25%	12.16%	2.00%	4.50%	-26.59%
16	3.00%	30.00%	12.16%	2.00%	4.50%	-24.34%
17	3.00%	27.75%	12.16%	2.00%	4.50%	-22.09%
18	3.00%	25.50%	12.16%	2.00%	4.50%	-19.84%
19	3.00%	23.25%	12.16%	2.00%	4.50%	-17.59%
20	3.00%	21.00%	12.16%	2.00%	4.50%	-15.34%
21	3.00%	18.75%	12.16%	2.00%	4.50%	-13.09%
22	3.00%	16.50%	12.16%	2.00%	4.50%	-10.84%
23	3.00%	14.25%	12.16%	2.00%	4.50%	-8.59%
24	3.00%	12.00%	12.16%	2.00%	4.50%	-6.34%

*From month 24 to the end of the amortization period, values are the same as in month 24.

Source: Moody's Investors Service

Exhibit 19 shows the results of the allocation of cash flows down to the last months of the amortization period, based on the assumptions in Exhibit 18.

EXHIBIT 19

Cash Flow During Early Amortization

	Trust Receivables Beginning of Period	Security Balance Beginning of Period	Allocations					Distributions					Security
Month			Finance Charge Allocation	Principal Allocation	Principal	Finance Charges	Charge-offs	Servicing	Coupon Repayment	Shortfall	Cumulative Shortfall	Balance End of Period
1	1,041,667	1,000,000	96.0%	96.0%	97,500	10,133	17,396	1,667	3,750	(12,679)	(12,679)	885,104
2	921,984	885,104	96.0%	100.0%	69,149	8,969	18,255	1,475	3,319	(14,081)	(26,760)	797,700
3	833,819	797,700	95.7%	100.0%	43,775	8,083	19,028	1,330	2,991	(15,266)	(42,026)	734,896
33	164,313	145,748	88.7%	100.0%	4,929	1,477	1,457	243	547	(770)	(260,200)	139,361
34	157,741	139,361	88.3%	100.0%	4,732	1,412	1,394	232	523	(736)	(260,937)	133,235
35	151,431	133,235	88.0%	100.0%	4,543	1,350	1,332	222	500	(704)	(261,641)	127,360
36	**145,374**	**127,360**	**87.6%**	**100.0%**	**4,361**	**1,291**	**1,274**	**212**	**478**	**(673)**	**(262,313)**	**121,725**

Source: Moody's Investors Service

The shortfall column measures the deficiency of finance charge allocations to meet the transaction expenses (charge-offs, servicing and investor coupon) for each month. The end-of-month principal tracks the remaining security balance after deducting allocated principal payments and write-downs because of charge-offs.

To determine the second component of the Aaa LGSD, the residual balance loss, we deduct from the remaining security balance at the end of month 36 the present value of the cash flows beyond the legal final maturity over a period of 18 months.[28] This calculation translates into a roughly 60% loss on the security's residual balance of $121,725. In this example, we use a less stressful haircut because we assume that the documentation forces a sale of the collateral before the legal final maturity.

The sum of the cumulative shortfall amount, 26.2%, and the residual balance loss, 7.3% (both expressed as a percentage of the original principal balance of the securities), at the end of the amortization period is the Aaa LGSD. In this case, it is 33.5%.

We calculate the necessary level of Aaa CE using the dependency ratio for the sponsor CR assessment of 43% and the Aaa LGSD of 33.5%. In this case, the Aaa CE is 14.4%.

Sensitivity Analysis

Exhibits 20 through 27 show the relationship between the various model inputs and the output CE. The cells in blue are the assumptions in the base case in Exhibits 18 and 19.

EXHIBIT 20

Impact of Sponsor CR Assessment on Aaa CE

Sponsor CR Assessment	Aa1(cr)	Aa3(cr)	A2(cr)	Baa1(cr)	Baa3(cr)
Aaa CE	7.7%	10.7%	14.4%	18.4%	22.8%

Sources Moody's Investor Services

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[28] We cut the cash flow for the present value calculation at 54 months after the start of amortization; therefore, for a time from expected to legal final maturity of 36 months for this trust, we count 18 months of cash flows.

EXHIBIT 21
Impact of Principal Payment Rate Assumptions on Aaa CE

Principal Payment Rate at the start of Early Amortization	10%	12%	14%	16%	18%
Aaa LGSD	34.6%	33.5%	32.4%	31.4%	30.3%
Aaa CE	14.9%	14.4%	13.9%	13.5%	13.0%

Source: Moody's Investors Service

EXHIBIT 22
Impact of Principal Payment Rate Floor Assumptions on Aaa CE

Principal Payment Rate Floor	2%	3%	4%	5%
Aaa LGSD	41.3%	33.5%	28.1%	24.2%
Aaa CE	17.7%	14.4%	12.1%	10.4%

Source: Moody's Investors Service

EXHIBIT 23
Impact of Charge-off Rate Assumptions on Aaa CE

Long-Run Charge-Off	9%	10%	11%	12%	13%	14%	15%
Aaa LGSD	27.5%	29.6%	31.6%	33.5%	35.3%	37.1%	38.8%
Aaa CE	11.8%	12.7%	13.6%	14.4%	15.2%	15.9%	16.7%

Source: Moody's Investors Service

EXHIBIT 24
Impact of Yield Assumptions on Aaa CE

Gross Yield	15%	17.5%	20%	22.5%	25%
Aaa LGSD	36.5%	35.0%	33.5%	32.1%	30.6%
Aaa CE	15.7%	15.0%	14.4%	13.8%	13.2%

Note: The relationship between yield and CE is linear, holding all other variables constant. In this example, every 2.5 percentage points of change in the yield assumption affects CE by approximately 0.6%.

Source: Moody's Investors Service

EXHIBIT 25
Impact of Weighted Average Note Coupon on Aaa CE

Weighted average note coupon	1%	2%	3%	4%	5%
Aaa LGSD	33.5%	34.5%	35.5%	36.4%	37.4%
Aaa CE	14.4%	14.8%	15.2%	15.7%	16.1%

Source: Moody's Investors Service

EXHIBIT 26
Impact of Legal Final Maturity on Aaa CE

Months from expected to legal final maturity	18	24	30	36	42
Aaa LGSD	36.4%	34.7%	33.5%	32.7%	32.3%
Cumulative Shortfall up to legal final maturity	*25.2%*	*25.8%*	*26.2%*	*26.6%*	*26.8%*
Residual Balance Loss	*11.2%*	*8.9%*	*7.3%*	*6.2%*	*5.5%*
Aaa CE	15.7%	14.9%	14.4%	14.1%	13.9%

Source: Moody's Investors Service

The example in Exhibit 26 assumes a mandatory sale at legal final maturity and no benefit to cash flow after 54 months in the present value calculation. If we take a conservative 80% market value impact of legal final maturity on Aaa CE because of expected difficulties accessing and selling the collateral, the impact is greater the longer the time to legal final maturity; however, it starts to decrease as the time to legal final maturity approaches four years, as Exhibit 27 shows.

EXHIBIT 27
Impact of Legal Final Maturity on Aaa CE for a Higher Market Value Haircut on the Residual Balance

Months from expected to legal final maturity	18	24	30	36	42
Aaa LGSD	41.8%	38.5%	36.0%	34.1%	32.8%
Cumulative Shortfall up to legal final maturity	*25.2%*	*25.8%*	*26.2%*	*26.6%*	*26.8%*
Residual Balance Loss	*16.6%*	*12.7%*	*9.7%*	*7.5%*	*5.7%*
Aaa CE	18.0%	16.6%	15.5%	14.6%	14.1%

Source: Moody's Investors Service

Moody's Related Publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector credit rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. A list of sector and cross-sector rating methodologies can be found here.

More information on credit card trust performance can be found in the following supplement: Historical Impact of Account Closures on Credit Card Trust Performance.

For data summarizing the historical robustness and predictive power of credit ratings, please click link.

For further information, please refer to *Rating Symbols and Definitions*, which includes a discussion of Moody's Idealized Probabilities of Default and Expected Losses, and which is available here.

Report Number: 1336460

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