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## Global Methodology And Assumptions For Assessing The Credit Quality Of Securitized Consumer Receivables

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## Table Of Contents

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### SCOPE OF THE CRITERIA

## **Table Of Contents (cont.)**

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IMPACT ON OUTSTANDING RATINGS

EFFECTIVE DATE AND TRANSITION

SUMMARY OF THE CRITERIA

METHODOLOGY AND ASSUMPTIONS

Asset Quality Analysis And Establishing The Base Case

Rating-Specific Stress Scenarios And Credit Enhancement

Additional Considerations For Revolving Structures, Prefunding Structures,  
And Revolving Lines of Credit

RELATED CRITERIA AND RESEARCH

# Global Methodology And Assumptions For Assessing The Credit Quality Of Securitized Consumer Receivables

*(Editor's Note: This article fully supersedes "Rating Methodology And Assumptions For Auto Loan-Backed ABS Transactions In Japan," published Jan. 10, 2008, and "Methodology And Assumptions For Rating Japanese Shopping Loan Securitizations," Nov. 7, 2013. It partly supersedes "Securitization In Latin America: Existing Assets: Asset-Specific Rating Criteria," Sept. 1, 2004.)*

1. Standard & Poor's Ratings Services is publishing its global methodology and assumptions for assessing the credit quality of securitized non-real estate related consumer receivables, including, but not limited to, auto, credit card, student, and unsecured personal loan asset-backed securities (ABS). We are publishing this article to help market participants better understand our approach to rating securities backed by consumer receivables. With this article, we intend to provide increased transparency regarding the global framework we use for assessing the credit quality of these securitized consumer assets.
2. This article is related to the credit quality of the securitized assets outlined in our criteria article, "Principles Of Credit Ratings," published Feb. 16, 2011.

## SCOPE OF THE CRITERIA

3. These criteria apply to all non-real estate-related consumer loan ABS. We will also apply these criteria in our obligor default risk analysis when rating ABS backed by pools of consumer leases.
4. These criteria do not apply where Standard & Poor's Ratings Services has published jurisdiction- or asset-specific criteria that address the credit quality of securitized consumer receivables. In such cases, the relevant jurisdiction- or asset-specific criteria article shall be applicable.

## IMPACT ON OUTSTANDING RATINGS

5. We do not expect the publication of our rating methodology and assumptions outlined herein to affect any outstanding ratings.

## EFFECTIVE DATE AND TRANSITION

6. These criteria are effective immediately, except in markets that require prior notification to, and/or registration by, the local regulator. In these markets, the criteria will become effective when so notified by Standard & Poor's and/or registered by the regulator.

## **SUMMARY OF THE CRITERIA**

7. This criteria report outlines Standard & Poor's global methodology and assumptions for assessing the credit quality of securitized non-real estate related consumer receivables. We apply these criteria in the development of forward-looking base-case and rating-specific stress scenario cash flow assumptions for key asset performance variables.
8. The analytical framework for structured finance securitization ratings includes five key areas:
  - The credit quality of the securitized assets;
  - Cash flow mechanics and payment structure;
  - Operational and administrative risk;
  - Counterparty risk; and
  - Legal and regulatory risk.
9. This article focuses specifically on the credit quality of securitized assets. (See the "Related Criteria And Research" section at the end of this article for general criteria articles addressing the other four areas of analysis.)
10. Standard & Poor's methodology for assessing the credit quality of consumer receivable pools is based primarily on our review of:
  - The originator and servicer of the receivables;
  - The obligor and collateral characteristics;
  - Historical performance of similar pools;
  - Macroeconomic factors and business conditions; and
  - Country risk factors.
11. Through this review, we develop a set of assumptions to model cash flows based on the transaction's payment structure so that we can assess the structure's ability to pay timely interest and principal by final maturity under rating-specific stress scenarios.
12. Our base-case assumptions incorporate our forward-looking view of the expected performance of the securitized pool of non-real estate consumer receivables. In the development of rating-specific stressed cash flow assumptions for each pool, we estimate the impact of various economic scenarios on pool performance. Hypothetical macroeconomic stress scenarios are used as benchmarks for calibrating the criteria and maintaining consistency and comparability of ratings across different sectors and over time. Each economic scenario corresponds broadly to one of the rating categories 'B' through 'AAA' and describes the magnitude of deterioration in economic conditions that obligations rated in that category are intended to be able to withstand without defaulting (although they might be downgraded significantly as economic stresses increase). Each successively higher rating category is associated with successively more stressful scenarios that we believe are less likely to occur. The scenarios presume a starting point of "benign" conditions and fairly rapid deterioration in economic conditions. Starting conditions that are less favorable would require proportionally more adverse macroeconomic scenarios. (For more details on the economic stress scenarios, see "Understanding Standard & Poor's Rating Definitions," Appendix IV, published June 3, 2009.)

## METHODOLOGY AND ASSUMPTIONS

### Asset Quality Analysis And Establishing The Base Case

#### Performance history and data sufficiency

13. The originator's and servicer's history and background are the starting points in our analysis. We also review management's experience, the company's goals, and target market, which could range from high-quality prime obligors to credit-impaired individuals. By understanding these factors, we gain a better perspective of the historical loss performance and how it may change in the future. Historical performance data is the foundation for developing our base-case expected gross, recovery, and net loss rates, which are further refined by forward-looking considerations. An issuer's ability to provide detailed performance data will affect our base-case and stress-scenario performance assumptions for the securitized pool and our ability to assign a rating. For example, not having at least three years of performance history may preclude us from issuing a rating, or it may cause us to cap the maximum rating we will assign to a transaction (see paragraph 33 for additional information).

#### Developing base-case expected default, recovery, and net loss rates

14. In situations where we are analyzing a pool of amortizing receivables or revolving receivables where the securitized transaction amortizes immediately, we generally establish a base-case default and recovery rate and then apply a rating-specific stress scenario to determine the appropriate rating scenario net loss rates. For revolving lines of credit where the securitized transaction has a revolving period followed by an amortization period and early amortization triggers, we generally assume that the loss rate-related triggers are breached and monthly loss rates increase over a 12-24 month period to a rating stress-specific peak loss rate (see paragraphs 85-89). We establish base-case default, recovery, and net loss rates primarily by considering and analyzing the following factors, where applicable:
- Static pool data (originator-specific vintage pool data or securitized pool data);
  - Pool composition;
  - Dynamic portfolio performance data;
  - Peer/benchmark comparisons;
  - Data granularity;
  - Operating and administrative risks;
  - Recoveries on defaulted loans;
  - Charge-off policies;
  - Seasoning;
  - Macroeconomic factors and business conditions;
  - Country risk factors, such as outlook, market conditions, and economic cycles affecting the country; and
  - Transaction-specific considerations, such as prefunding and revolving structures (see "Additional Considerations For Revolving Structures, Prefunding Structures, And Revolving Lines Of Credit" section, paragraphs 56-94).

#### Static pool analysis and pool composition

15. Static pool analysis involves tracking the performance of a discrete pool or vintage of receivables as the assets amortize. The vintage refers to the period in which the receivables were originated, usually a month or quarter. When

the data is available, we generally analyze monthly or quarterly static pool performance based on company-provided origination data and the performance of past securitizations, to the extent the company has securitized consumer assets. We use the information to develop base-case assumptions for the amount and timing of gross losses, recoveries, and net losses. For example, we would measure net losses of past securitizations as the aggregate amount of losses experienced during the pool's life, which can provide the cumulative net loss (CNL) percentage when divided by the original pool balance.

16. While the performance of past static pools should be a strong indicator of a new pool's performance, adjustments to the base-case gross loss, recovery, and net loss rate may be needed to the extent pool characteristics or economic conditions have changed.
17. We analyze the static pool results of various vintages, taking note of how performance may have changed due to economic conditions as well as due to changes in the collateral pool mix. To better understand the effects of changes in the pool composition, we generally also analyze pools on a segmented basis--by specific collateral characteristics, such as term of contract, or on a cross-sectional basis. That is, we typically request historical issuer-specific static pool performance data on pools that are stratified based on key credit quality indicators. Examples of the collateral characteristics on which we may examine performance due to changes in the collateral pool mix include the following:
  - Credit score or credit grade;
  - Receivables (contract) type;
  - Key customer demographics;
  - Term of receivable;
  - Subvened/nonsubvened;
  - Direct/indirect loans;
  - Presence of refinancing risk (e.g., balloon loans);
  - Obligor concentration; and
  - Geographic concentration.
18. For consumer receivables secured by collateral (e.g., auto, boat, or motorcycle), examples of collateral characteristics on which we would examine performance may also include, where applicable:
  - Collateral type;
  - Loan-to-value (LTV);
  - New/used; and
  - Age/mileage.
19. The characteristics above include some examples of characteristics that we generally view as key indicators of consumer credit risk. They include some of the same credit quality indicators that many consumer loan originators use when underwriting and pricing loans, as they find them to be predictive of credit risk. Our own analysis confirms that credit score, LTV, or term of loan, for example, are generally highly correlated with consumer loan default frequency and/or recovery rates (see "Loan Level Data, Although Still Limited, Provides Insight Into The Credit Behavior of U.S. Auto Loans," Aug. 7, 2006).
20. We will also consider other loan-type specific credit quality indicators. For example, U.S. private student loan

originators have provided segmented portfolio performance data based on the following attributes:

- Program of study (such as undergraduate, medical, vocational, and so on);
- The presence of a co-signer with a more established credit history;
- School quality, which can be measured based on for-profit or not-for-profit status, school cohort default rates, school graduation rates, etc.; and
- Repayment options while students are still in school (principal and interest deferment, principal-only deferment, and no deferment).

21. A cross-sectional static pool analysis would drill down and examine performance on a multilevel basis—for example, analyzing how 120%-plus LTVs on long-term auto loan contracts to obligors with low credit scores perform. An example of cross-sectional static pool analysis for an auto loan pool where the pool is stratified by new/used, term (60- and 72-month loans), and credit grade is in the static pool analysis section of "General Methodology And Assumptions For Rating U.S. Auto Loan Securitizations," Jan. 11, 2011.
22. An example of how pool composition may affect our analysis of credit quality is when the pool includes loans with balloon payments. The typical fully amortizing receivable, such as an auto loan, is repaid over its life with constant installments. Balloon loans are different in that they typically have constant, but relatively small, regular installments during the life of the loan plus one final, relatively large, installment at the end. We view balloon loans to be riskier because the loan amortization is slower and this may adversely affect recoveries on defaulted loans. In addition, it may be more difficult for obligors to make a relatively large balloon payment in periods of economic stress. There may also be a component of market value risk. For example, a balloon loan may be used to finance a car, and the lender may set the final balloon payment to match the forecasted vehicle value at the maturity of the loan. If the obligor is relying on the sale of a financed vehicle to make the final balloon payment, the proceeds from the sale may be insufficient because the current market value is below the forecasted price at time of loan origination. Where balloon loans are securitized, we typically adjust the rating-specific loss rates and the timing of when losses occur (loss timing curves) to address the additional risk that may not be reflected in the historical loss data. For example, historical price movements in the car markets are typically not an area where one would expect to see a significant impact. Still, in more stressful scenarios, we would expect that risk to materialize.

### **Dynamic managed portfolio performance data**

23. While we generally derive our base-case default and recovery or net loss expectations primarily from static pool data when such data is available, we also analyze dynamic managed portfolio data statistics. Dynamic portfolio performance data can be used as a stand-alone method of establishing base-case expectations or as a supplemental method when static pool data is available. Managed portfolio performance data can be used to measure annual default, annual repossession, annual net losses, and delinquencies relative to the average or year-end portfolio balances. Unlike static pool net loss rates, which are generally the cumulative lifetime net losses as a percentage of the initial principal balance for a fixed pool of assets, the managed portfolio net loss rates are generally the annual net losses as a percentage of the average or year-end balance for a dynamic portfolio of assets.
24. There are certain limitations associated with portfolio performance data, especially as it relates to a rapidly growing portfolio or a significant change in the underlying collateral being originated. However, growth-adjusting portfolio losses by dividing the current period's losses over the outstanding portfolio of one year earlier, for example, helps to

normalize the losses. During periods of modest growth, multiplying the growth-adjusted loss level by the expected average life of the pool in question can yield a loss level that is generally close to the proxy established using the static pool method.

25. The analysis of managed portfolio data is also useful in providing a better understanding of the trends in a company's performance, particularly with respect to delinquencies. Delinquencies are a leading indicator of future performance. Therefore, if they are rising, net losses are likely to increase soon as well. Rising delinquencies could signal a worsening economy, a liberalization of underwriting standards, or simply that the company has grown faster than its infrastructure. In any event, rising delinquencies are a cause for concern and would typically be a negative factor in our analysis. By the same token, declining delinquencies could be a positive factor. Because delinquencies are seasonal, we typically compare this metric on a year-over-year basis. Managed portfolio data can also provide Standard & Poor's with default, net loss, and recovery rate trends for the aggregate portfolio.

### **Benchmarking and peer comparisons**

26. To help maintain ratings comparability across issuers, asset types, and the consumer ABS sector, we typically compare actual pools with "benchmark pools" when they are available. An applicable benchmark pool may include one or more individual pools that were originated by other lenders that are considered to be in the issuer's peer group or an index of aggregated consumer ABS pools of comparable loans. The primary benefit of benchmarking is to enhance the comparability of our ratings across an ABS market segment based on the relative credit quality of securitized pools and the level of credit enhancement.
27. Our comparison generally covers aspects like collateral characteristics, managed portfolio data, or our original expected and updated projected loss ranges for pools securitized by other originators with similar lending profiles or an aggregated index. While we generally place more emphasis on issuer-specific static pool performance for determining the base-case loss assumptions for the pool being analyzed, the peer comparisons allow us to benchmark the pool and base-case loss ranges against those of other pools we've analyzed. It also is effective in making comparisons across issuers and can be useful in identifying trends and market developments that may be less apparent when looking exclusively at a single portfolio or originator.
28. We typically measure actual pools against applicable benchmark pools in terms of expected loss rate, credit support provided, and the particular risk characteristics of each transaction. Deviations in historical and expected performance or current loan and obligor characteristics relative to the applicable benchmark could lead to variations in pool-specific base-case and stress-case performance assumptions. For example, if the pool mix shifts away from historical benchmark norms to include a greater percentage of longer-term loans with lower credit grades, our analysis takes a forward-looking view and would likely project higher losses on these loans.
29. In situations where the issuer-specific performance is significantly better than that of its peers, we will examine the reasons for the difference in performance. To the extent that we view the superior historical performance as unsustainable or believe the conditions contributing to the superior performance would not exist in a stressed environment, we would adjust the base-case default and/or recovery rates accordingly.
30. An example of an area where benchmarking is an important element of our credit analysis is U.S. credit card ABS. For U.S. credit card ABS, we use our U.S. Credit Card Quality Index (CCQI) as an industry benchmark against which we



compare and measure outstanding pools, based on collateral performance. The CCQI is a monthly performance index that aggregates performance information across Standard & Poor's rated bankcard transactions in several key risk areas. We also emphasize the use of peer group comparisons in refining our evaluation of a specific pool relative to other similar portfolios based on collateral characteristics. The 'AAA' peak charge-off rate for the U.S. credit card benchmark pool is 33%. This benchmark rate reflects our opinion of expected average U.S. credit card performance under conditions of extreme economic stress. We consider the 'AAA' peak charge-off rate of 33% associated with the U.S. credit card benchmark pool as a fixed anchor point. However, pool-specific variations in actual and projected base-case performance relative to the benchmark pool, as well as loan or obligor characteristics relative to an issuer's peer group, may cause the 'AAA' stressed charge-off levels for actual pools to vary (higher or lower) from the benchmark pool's 33% peak charge-off level.

31. If a pool's expected charge-offs are higher than what we would expect for the benchmark pool in the base-case scenario, then the pool-specific 'AAA' stressed peak charge-off will likely be above 33%. 'AAA' stressed peak charge-off rates that are lower than 33% could also be applied in our cash flow analysis to the extent there are pools with higher credit quality assessments relative to the benchmark pool.
32. Another example of where benchmarking is an important element of our credit analysis is when loan renewals are present in a securitization. Renewals represent new loans to existing amortizing loan customers. The renewed loan may be used to make a payment on the securitized loan, and the balance of the securitized loan may be fully or partially reduced. If the lender is unwilling or unable to renew loans in the future, pool default rates could increase because the borrowers would be denied a source of funding. As such, we would likely increase the base-case default rate relative to historical performance and benchmark losses to peer issuers that do not offer a renewal product.

### **Data granularity**

33. Since our approach for estimating base-case losses for proposed consumer loan securitizations is data driven, our confidence in estimating base-case lifetime losses on a pool of consumer loans generally increases as the amount of data we have increases. When the performance track record is, for example, short or erratic, or if the level of segmentation data is limited, our expected loss levels will account for this and generally be higher than otherwise.

### **Operating and administrative risks**

34. Standard & Poor's also typically considers qualitative factors in the rating process and in the refinement of our base-case loss levels. The following factors, for example, affect pool performance and reporting of losses, which could have an impact on our loss expectations:
  - Origination and underwriting standards and credit/risk scoring tools;
  - Servicing and collection policies;
  - Collateral repossession policies, if applicable;
  - Complexity of operations, including degree of decentralization;
  - Reliance on third-party servicers;
  - Accounting policies; and
  - Indirect lender relationships and monitoring tools.
35. Changes to an issuer's origination, underwriting, and collections policies and procedures may limit our ability to use historical performance to gauge future performance and may lead to more conservative estimates of base-case losses

for the pool to be securitized.

36. Our analysis of operational risk may result in a cap on the maximum rating we will assign to a transaction. (For more information on our analysis of operating risks, see "Global Framework For Assessing Operational Risk In Structured Finance Transactions," Oct. 9, 2014.

### **Recovery rates on defaulted loans**

37. We analyze historical recovery rates for the issuer and the market. In determining our rating-specific stress scenario cumulative net loss rates, we consider the stability of historical recovery rates and factors that may affect the timing, amount, and availability of future recovery rates for the securitized pool. If in our view, the recovery rates are volatile or the availability of recoveries is subject to significant credit, operational or legal risks, historical recovery rates may be discounted in developing stress scenario cumulative net losses. The discount applied to recoveries also depends on our assessment of issuers' collection and recovery strategies. For example, in cases where recoveries are volatile or driven by temporary factors, such as a one-time sale of defaulted receivables, we may assume lower or no recoveries. The level of legal risk and degree of discount to historical recovery rates is generally country specific.

### **Charge-off policies**

38. We may adjust our base-case default rates based on an analysis of historical delinquencies and the issuer's charge-off policies. If, in our view, historical loss rates potentially understate the credit risk profile of the pool based on an analysis of delinquency trends or the issuer's charge-off policies, base-case default assumptions may be adjusted. For example, if the issuer's charge-off policies are out of line with industry norms and loans are being charged off at a later stage of delinquency, base-case default rates may be increased to adjust for the more liberal charge-off policy. In some cases, a late-stage delinquency rate may be used as a proxy for default rates.

### **Seasoning**

39. We may consider the initial months of seasoning a pool has when assessing credit quality. We define seasoning as the number of payments made on the contracts, calculated as the difference between the weighted average original and remaining maturities. Historical data shows that there is a relationship between the frequency of default on a consumer loan pool and the degree to which loans in the pool are seasoned. Meaningful seasoning will reduce the remaining losses as a percentage of the current pool balance to the extent the percentage of losses already incurred (e.g., 30% of total losses taken by month 12) exceeds the percentage decline in the pool balance (e.g., the pool balance has declined by 20%). The level of seasoning may also affect the shape of the loss timing curve assumed in our rating-specific stress scenarios.

### **Macroeconomic factors and business conditions**

40. In addition to the static pool performance and the other quantitative data previously mentioned, we also consider additional forward-looking factors, such as the economic outlook, when estimating base-case net losses. The economic cycle influences pool performance, as unemployment, inflation, and household income all affect an obligor's ability to make loan payments. When analyzing historical static pool performance, we will not only look for a cohort pool with similar characteristics, but also a cohort that was originated during an economic environment similar to the one that we expect the current pool to be subject to during its life.

## Country risk

41. When establishing our base-case default rates for a pool of consumer receivables, we will also consider country risk factors that could affect asset performance over time. Such risks generally include: economic risk, institutional and governance effectiveness risk (including political risk), financial system risk, and payment culture and rule-of-law risk. (These risks are further described in "Country Risk Assessment Methodology And Assumptions," Nov. 19, 2013 and "Weighing Country Risk In Our Criteria For Asset-Backed Securities," April 11, 2006.) Economic risk, including heightened macroeconomic volatility, may increase the volatility of the performance of the underlying assets, which may affect repayment of the debt obligations. Relatively low per capita income in a given jurisdiction may also constrain consumer debt repayment. Financial system risk is important since we tend to observe weak points in business and consumer credit cycles correlated with banking crises. Weak institutional and governance effectiveness risk, including political risk, can cause a more severe impact for the business environment and consumer loan delinquencies. Our assessment of payment culture and rule-of-law risk covers key country-specific aspects that can affect pool performance, including: respect for rule of law, property rights, contract rights and enforceability, corruption, and related event risk. Finally, in addition to these country-risk aspects, ratings on an individual security may be constrained as per our criteria with respect to ratings above the sovereign (see "Nonsovereign Ratings That Exceed EMU Sovereign Ratings: Methodology And Assumptions," June 14, 2011, "Criteria For Determining Transfer And Convertibility Assessments," May 18, 2009, and "Methodology And Assumptions For Ratings Above The Sovereign--Single-Jurisdiction Structured Finance," Sept. 19, 2014).

## Rating-Specific Stress Scenarios And Credit Enhancement

### Stress scenarios

42. Stress scenarios are meant to capture varying levels of deterioration in both economic and business conditions. An "extreme" deterioration in economic and business conditions is usually associated with a 'AAA' stress scenario. Securities rated 'AAA' should be able to withstand an extreme economic stress without defaulting. The Great Depression in the U.S. is a historical example of such a scenario, during which unemployment peaked at 24.9% in 1933. We consider 'AAA' rated securities to have an extremely strong capacity to meet their financial obligations at inception. A "severe" deterioration in economic and business conditions is usually associated with an 'AA' scenario. Securities rated 'AA' have a very strong capacity to meet their financial obligations at inception, and their credit profiles differ from those of 'AAA' securities by only a small degree. Such a scenario might include unemployment levels of up to 20%. For a more detailed explanation of what ratings mean and the various economic conditions we expect rated securities to be able to withstand without defaulting, please see "Understanding Standard & Poor's Rating Definitions," June 3, 2009. Rating-specific stress scenarios also consider country-specific risks (see "Methodology And Assumptions For Ratings Above The Sovereign--Single-Jurisdiction Structured Finance," Sept. 19, 2014).
43. We generally consider the expected-case default and recovery rates we derive to be consistent with a global scale 'B' stress scenario. We consider the loss expectation to be based on the assumption that economic and business conditions won't deteriorate beyond current expectations. We then associate each successively higher rating category with successively more stressful scenarios that we believe are less likely to occur. For example, if our base-case level of losses is 2% for a new pool, our 'AAA' scenario may envision loss rates that are significantly higher (e.g., 10%)

because the portfolio would be subject to an economic environment that exhibits extreme conditions similar to the Great Depression.

44. There is generally a relationship between base-case and 'AAA' stress scenarios for different portfolios. Portfolios with higher base-case losses should also have higher stress-case losses. However, the relationship is not linear. The rating-scenario default rate as a multiple of the base-case default rate is generally higher when the base case is relatively low. Although the magnitude of the differential between the base-case default rate and the rating-scenario-specific default rate generally increases as the base-case default rate increases, the multiple may be lower when the base-case loss rate is higher. For example, a prime portfolio of auto loans with base-case net losses of 2% in a relatively benign economic environment may have a 'AAA' stress case of 10% net losses (i.e., 5x the base case), while a subprime portfolio with expected net losses of 20% may have 'AAA' stress-case net losses of 50% (2.5x the base case). It wouldn't be appropriate to apply stress losses that are the same multiple of the base case. For example, a stress equal to 5x base-case net losses of 20% for a subprime pool would imply 100% net losses and 150%-200% gross losses, if the assumed recovery rate was 33%-50%.
45. Table 1 shows the typical range of rating-specific stressed losses as a multiple of base-case performance. The stress multiples in table 1 illustrate the relationship between the default rates we would expect in a mild economic environment and the level of defaults we would expect in the stress scenario consistent with the rating categories outlined in the left column of the table. For example, in a 'AAA' scenario, where we assume an extreme deterioration in economic and business conditions, we believe defaults could reach levels that are approximately 2.5x-7.0x the defaults observed in mild economic conditions for a comparable pool from the same issuer. If the economy deteriorates, some level of volatility around the expected case can occur without affecting the ratings assigned to securities rated above 'B'. In other words, there is typically some level of cushion, or tolerance, for higher default rates before a rating action would be necessary. This implies a tolerance for somewhat higher defaults due to a deteriorating economic environment. The level of tolerance for pool performance deviation away from the expected case tends to be higher as ratings move up the scale from 'B' to 'AAA'.
46. Base-case default rates are expected to increase if there is a significant economic deterioration and increase in unemployment rates. The rating-scenario default rate for a 'B' rating will generally change as the base-case changes. However, the rating-specific default rate is less likely to change for higher rating scenarios. In a normal economic cycle, as the rating-scenario moves up the rating scale, the level of sensitivity to a change in the economic environment is generally expected to decline. For example, a hypothetical pool could have base-case default rates that range from 3% to 5%, depending on economic conditions during a normal economic cycle. However, the 'AAA' stress-scenario default rates for that hypothetical pool could be a constant 15% throughout a normal economic cycle.

**Table 1**

Typical Stress Scenario-Specific Default Rates As A Multiple Of The Base Case Across Asset Types	
Rating scenario*	Stressed default rate range (x)
AAA	2.50-7.00
AA	2.00-5.00
A	1.70-3.75
BBB	1.35-2.50

**Table 1**

Typical Stress Scenario-Specific Default Rates As A Multiple Of The Base Case Across Asset Types (cont.)	
BB	1.25-2.00
B	1.00-1.50

\*Subject to adjustments based on country-specific risk factors and the sovereign rating on the country where the obligors reside (see "Methodology And Assumptions For Ratings Above The Sovereign--Single-Jurisdiction Structured Finance," Sept. 19, 2014, for additional information).

47. In some unusual cases where base-case default rates are very high or very low, the range of stressed default rates as a multiple of the base case in table 1 would not apply. For example, a higher multiple may result where a credit enhancement floor applies for pools with a very low expected loss rate (see paragraph 53), or a lower multiple may result where the 'AAA' scenario stressed loss rate is approaching 100%.
48. In our surveillance reviews of outstanding securities, we adjust our base-case and stressed-case losses on outstanding securities based on actual performance and our outlook for the economy in general. Reflecting the availability of actual pool performance and shorter time to maturity, our stressed-case net losses as a multiple of our revised base-case loss level may be in a lower range of multiples in surveillance than the range of multiples that generally apply at the time of issuance. We believe that our ability to project losses on outstanding pools improves as the loans season, given that we're taking actual performance and the current economic environment into account. In fact, our analysis of actual and projected base-case losses indicates that, generally, the percentage difference between projected net losses and actual cumulative losses when the deal pays off narrows as the transaction ages. In our opinion, the projections generally start to become more reliable than original base-case loss levels after approximately 12-18 months of performance.
49. Cumulative net loss rates are a function of the default and recovery rates assumed. As noted in paragraph 37, if, in our view, the historical recovery rates are volatile or the availability of recoveries is subject to significant credit, operational, or legal risks, historical recovery rates may be discounted in developing stress-scenario cumulative net losses. Therefore, relative to assumed default rates, assumed cumulative net loss rates may be a higher multiple of the applicable net loss base case in a rating-specific stress scenario.
50. The range of rating-specific scenario default rates as a multiple of the base case in table 1 is an across-asset-type range. The asset-specific ranges for cumulative default rates for amortizing assets across regions are generally narrower, reflecting the typical credit quality of the asset type and a narrower range of typical base-case default rates. For example, on a global basis, the 'AAA' specific assumed default rate as a multiple of the base case for prime auto loan ABS has typically been in the range of 3.5x to 5.0x. In asset- or region-specific criteria, the typical range of 'AAA' assumed default rates as a multiple of the base case may be higher or lower. For example, the published range in the criteria applicable for U.S. private student loan ABS is 3x to 4x for typical pools with expected default rates of 8% to 27%. (Stresses applied to a typical credit card ABS pool are summarized in table 8.)
51. The most commonly securitized consumer ABS asset type is auto loans. Table 2 shows the typical range of rating-specific stressed losses as a multiple of base-case expected performance for pools with expected cumulative default rates and cumulative net loss rates of less than or equal to 20% and 10%, respectively. For subprime pools with higher loss rates, the lower half of the range in table 1 may apply.

**Table 2**

Typical Stress Scenario-Specific Default Rates As A Multiple Of The Base Case For Pools Of Auto Loans	
Rating scenario*	Stressed default rate range (x)
AAA	3.50-5.00
AA	3.00-4.00
A	2.00-3.00
BBB	1.50-2.00
BB	1.25-1.75
B	1.00-1.50

\*Subject to adjustments based on country-specific risk factors and the sovereign rating on the country where the obligors reside (see "Methodology And Assumptions For Ratings Above The Sovereign--Single-Jurisdiction Structured Finance," Sept. 19, 2014).

### Credit enhancement

52. We perform a cash flow analysis to determine if a transaction has sufficient credit and liquidity enhancement to pay its obligations under rating stress scenarios consistent with our ratings definitions. In addition, we may use the cash flow analysis to test a transaction's credit stability during a moderate economic stress period in accordance with our credit stability criteria.
53. Our rating-specific minimum credit enhancement is 4% for 'AAA' ratings and 0.80% for 'B' ratings. These floors are based on our view that there are limits on the predictability of consumer loan performance. The 4% minimum credit enhancement for 'AAA' rated consumer loan ABS corresponds to 25x leverage. We believe that leverage above that level creates vulnerabilities that are inconsistent with the degree of creditworthiness associated with an 'AAA' rating. Moreover, the minimum 'AAA' credit enhancement levels can't be funded solely through "soft" credit enhancement (commonly called "excess spread"), and the minimum amount of "hard" credit enhancement supporting an 'AAA' rated consumer loan ABS transaction is 2.5%. Rating-specific floors and minimum hard credit enhancement levels are summarized in table 3. Hard credit enhancement generally includes such sources as subordination, overcollateralization, letters of credit, reserve funds, and, in some cases, yield supplement overcollateralization. (Credit enhancement floors for various rating categories are summarized in table 3.)

**Table 3**

Minimum Credit Enhancement		
Rating level	Credit enhancement floor (%)	Minimum hard credit enhancement (%)
AAA	4.0	2.5
AA	3.2	2.0
A	2.4	1.5
BBB	1.6	N/A
BB	1.2	N/A
B	0.8	N/A

N/A--Not applicable.

### Country- and region-specific calibration of our stress loss assumptions

54. The rationale supporting the calibration of our stress loss assumptions is country- and region-specific, and draws from recent observed market data, as well as available data on consumer loans during periods of economic stress. For

example, several studies conducted by the National Bureau of Economic Research and others provide insight into the defaults that auto loan portfolios held by finance companies experienced during the Great Depression. (See "Investigating U.S. Auto Loan Credit Performance During Economic Downturns, 1925-2010," Jan. 5, 2011, for more information on published studies and academic papers on the historical performance of auto loans. Additional information on how our stress scenarios are calibrated for specific asset types in specific countries is published in the articles listed in the "Related Criteria And Research" section at the end of this article.)

### **Cash flow timing**

55. Both the amount and timing of cash flows are important considerations in the rating analysis. The amount and timing of losses (or delinquencies, defaults, recoveries, or liquidations) and prepayments may positively or negatively affect the issuer's ability to meet its payment obligations in a timely manner. Pool characteristics (e.g., credit quality, loan term, and payment status) and the historical performance of similar pools are generally considered when determining the loss timing and prepayment rates to be applied in the cash flow analysis for a rating scenario. We typically customize our cash flow assumptions (e.g., by applying prepayment assumptions that are faster or slower than historically observed) to test the robustness of the transaction structure and determine if there is sufficient enhancement to absorb losses from credit stresses and prevent interest shortfalls from liquidity stresses to the degree consistent with our ratings definitions. In addition, where relevant, we may apply cash flow stresses to account for legal, operational, and counterparty risks that are not mitigated by the transaction structure. (For more information on the criteria applied in the cash flow analysis, see "Global Framework For Cash Flow Analysis Of Structured Finance Securities," Oct. 9, 2014.)

## **Additional Considerations For Revolving Structures, Prefunding Structures, And Revolving Lines of Credit**

### **Revolving and prefunding structures**

56. The analysis for amortizing consumer loans with revolving or prefunding structures and the analysis of revolving lines of credit may differ in several ways from that undertaken for an amortizing loan transaction that does not allow for asset purchases after closing.
57. Consumer loan ABS transactions that have revolving structures allow for the reinvestment of principal collections for a specified period of time, followed by an amortization period where the investor's share of principal collections is passed through to pay down securities. Prefunding structures generally use a portion of the proceeds from the sale of securities to purchase assets within a specified period of time. Such transactions typically include eligibility criteria and portfolio parameter conditions for the purchase of new assets after the securities are sold. For example, the eligibility criteria may include the minimum credit score, interest rate, and maximum tenure of the assets. The purchase of new receivables may also be subject to portfolio parameter conditions related to portfolio performance (e.g., yield, delinquency, or annualized net loss rates) or concentration limits. These structures also typically have asset performance, seller insolvency, and servicer default related amortization events that, if triggered, will cause the amortization period to begin early. We consider any transaction-specific eligibility criteria, portfolio parameter conditions, payment allocation provisions, and amortization events, as well as historical asset performance and the term of the revolving period, in establishing rating-specific cash flow assumptions for each performance variable.

### Revolving lines of credit

58. For securitizations backed by lines of credit with revolving structures, we establish base-case and rating-specific stress-case assumptions for portfolio yield, loss rate, payment rate, and purchase rate. In addition, we also develop rating-specific dilution rate assumptions for credit card ABS transactions.

### Purchase rate assumptions for revolving lines of credit

59. The purchase rate is the rate at which consumers borrow on their revolving lines of credit.
60. For credit card pools, the purchase rate is the rate at which new receivables are created as cardholders use their credit cards to make purchases or cash advances. The transfer of new receivables affects the level of principal receivables in the trust and the monthly collections available to repay the ABS. Generally, a higher purchase rate translates into an increased receivables balance or a gradually declining receivables balance. A higher receivables balance should result in increased future principal payment collections that can be applied to pay down the ABS faster in a deteriorating credit environment.
61. In analyzing credit card ABS, the loan originator's ability to continue generating and transferring receivables to the trust will have an impact on cash flows. The loan originator's insolvency could result in its inability to originate new loans and/or transfer new loan balances to the trust. Upon an originator's insolvency, some or all of the accounts could be closed or sold to a new credit card loan originator. To reflect the risk of the originator's failure to sell the accounts in the event of its insolvency, the purchase rate modeling parameters used in our analysis are linked to the originator's unsecured credit rating.
62. For ABS rated 'A' or higher that are backed by bankcard receivables originated by bank credit card lenders rated at least as high as the ABS, the purchase rate modeling parameters used typically range from 3% to 6%, which translates to a shrinking receivables pool during the payout period. For ABS rated 'BBB' or lower that have an originator rated at least as high as the ABS, after rating-specific stresses to payment and purchase rates are applied, the pool balance will generally remain flat. In these "flat" stress scenarios, new receivables transferred to the trust will offset principal reductions due to payments received and charge-offs.
63. Table 4 summarizes the rating-specific stress scenario purchase rate modeling parameters applied to bankcard pools based on the originator's unsecured credit rating. The percentages in the table indicate a maximum purchase rate based on the originator's credit rating; the minimum parameter is 0%.

**Table 4**

Maximum Purchase Rates (%)							
Originator rating	Bond rating						
	AAA (sf)	AA (sf)	A (sf)	BBB (sf)	BB (sf)	B (sf)	CCC (sf)
AAA	4.0	5.0	6.0	Flat	Flat	Flat	Flat
AA	3.5	4.5	5.5	Flat	Flat	Flat	Flat
A	3.0	3.5	5.0	Flat	Flat	Flat	Flat
BBB	2.0	2.5	4.0	Flat	Flat	Flat	Flat
BB	0.5	1.0	1.5	4.0	Flat	Flat	Flat
B	0.0	0.0	0.0	1.0	4.0	Flat	Flat
CCC	0.0	0.0	0.0	0.0	1.0	4.0	Flat



64. Actual stresses could be lower than the applicable rates listed in table 4 based on a jurisdiction-, issuer-, and collateral-specific analysis. For example, compared to bankcard receivables, lower purchase rate modeling parameters are generally applied to retail card or co-branded credit card receivables for two reasons. One, the utility of the credit card depends on the strength and survival of the retailer or co-brand relationship. So, if the merchants that issue these cards cease to exist, the utility of the cards will decrease considerably and, therefore, the amount of receivables would likely dwindle, possibly to zero. Two, many of the seller/servicers of private-label cards are either unrated or rated as non-investment grade (i.e., 'BB+' or lower), in which case we would assume they would not be able to originate new receivables under stress scenarios exceeding 'BB'.
65. A purchase rate modeling parameter as high as those listed in table 4 may also be applied in situations where the private-label portfolio is highly diversified and includes several merchants and product types with rated third-party loan originators and servicers.
66. For transactions with unrated credit card loan originators, the purchase rate (and payment rate) modeling parameters may be based on a credit assessment of the originator.

#### Payment rate for revolving lines of credit

67. The payment rate is the rate at which obligors pay down their balances each month. It is calculated as the total monthly collections (obligor principal and finance charge payments) divided by the total receivables outstanding at the beginning of the month. The payment rate affects the length of time during which ABS investors may be exposed to the credit risk of a deteriorating asset pool. The higher the payment rate, the more quickly investors can be paid out in adverse scenarios.
68. For each issuer, Standard & Poor's establishes a base-case payment rate based on an analysis of the portfolio's historical average payment rate, the volatility of the historical data, seasonal trends, the minimum payment rate and whether it has changed over time, and the servicing quality.
69. Table 5 summarizes the range of minimum payment rate stresses that we generally apply to the base case when establishing rating-specific stress scenario modeling parameters.

**Table 5**

Stresses Applied To Base-Case Payment Rates*		
Rating scenario	Stress to base-case range for a non-investment-grade originator (%)	Stress to base-case range for an investment-grade originator (%)
AAA	45-55	45-65
AA	50-60	50-70
A	55-65	55-75
BBB	65-75	65-80
BB	75-80	75-85

\*Applied in the first month of amortization for modeling purposes.

70. In establishing the payment rate modeling parameters using table 5, the base-case payment rate is multiplied by the applicable stress rate. For example, if the portfolio-specific base-case payment rate is 15%, the 'AAA' stress scenario

modeling parameter would typically be 45% to 65% of the base case and in the range of 6.75% to 9.75%.

71. Other factors that we consider when establishing the payment rate modeling parameters used for cash flow modeling purposes include the current payment rate, the historical volatility in payment rates, the loan type, the existence of any co-branded or reward products, and the originator's unsecured credit rating.
72. Payment rates will likely be adversely affected if the line of credit is closed. For example, if a private-label credit card program is terminated because the merchant is closing, cardholders' incentive to repay their loan would likely diminish. Closed accounts would also affect bankcard payment rates because a high payment rate is generated by "non-revolvers," cardholders who use their card and pay their balances in full to avoid finance charges and would not be able to use their cards to make subsequent purchases. This may leave a portfolio with accounts that generate lower payment rates, including those with cardholders that pay only the minimum required payment.
73. To reflect the risk of account closures associated with an originator's insolvency, the payment rate modeling assumptions used for pools originated by non-investment-grade originators will generally be capped at the midpoint of the range of the applicable potential payment rate modeling parameters for transactions with investment-grade originators.
74. In markets where for certain revolving credit products, obligors generally pay the minimum payment amount with limited prepayments, the stress levels in table 5 would not apply. In such cases, we generally assume that the principal repayment rates are in line with the minimum contractual repayment patterns of each product (or a sub-pool to which the same repayment table is applied), without consideration to any prepayments in stress scenarios (see "Methodology And Assumptions For Rating Japanese Credit Card And Consumer Loan Securitizations," Sept. 29, 2010 for a more detailed information on the criteria applied in Japan).

#### **Portfolio yield assumptions for revolving lines of credit**

75. For revolving consumer assets, portfolio yield is the weighted average total income for the collection period, as a percentage of eligible principal receivables (annualized). We consider it income flowing into the ABS issuer, and it includes a number of sources. For example, a bank card portfolio yield may include cardholder interest payments and fees, interchange, recoveries, and other miscellaneous income. For rating and cash flow modeling purposes, the yield assumption is important because the amount of yield dictates how much income is expected to be available to cover expenses paid in the cash flow waterfall, such as defaults, note interest, servicing fees, and other transaction-related expenses.
76. A rating committee may review multiple stress scenarios to examine the sensitivity to different base-case assumptions and stress factors, as well as to examine the relationship between different variables.
77. For each issuer, Standard & Poor's determines a base-case assumption yield. We then determine cash flow stresses for each rating category by reducing the base-case assumption yield by a percentage haircut. The haircut (the ratings-based adjustment) is largest for the highest rating categories of ABS and smallest for the lowest rating categories.
78. Our base-case and stress assumptions for yield include factors that would affect yield in a stressed scenario. For

example, our assumptions of the percentage of customers who become delinquent in making payments on their credit cards may reduce yield. Similarly, if we assume an increasing percentage of accountholders who pay off the balance in full each month, then our yield base-case assumption would also decrease. Competition with other lenders or from other products, such as debit cards, could also exert pressure on pricing and result in a lower yield assumption.

79. For bank credit cards, interchange income is paid to an issuing bank by credit card networks as part of its overall compensation for assuming credit risk and offering a grace period on finance charge accrual. Interchange may not be available to the trust in the event of the card lender's insolvency due to set-off or reduction of interchange fees, because of the reduction in new receivables after such insolvency and the possibility of a challenge to the ABS issuer's rights to interchange collected after the loan originator's insolvency. Therefore, Standard & Poor's will generally not assign any credit to interchange in yield in the higher rating categories of ABS (from 'AAA' to 'A-'). In the 'BBB' and lower rating categories, we might consider interchange as part of the yield or as a reduction in the servicing fee in structures where highly rated servicers and trustees, as successor servicers, have agreed to be paid a portion of the servicing fee from interchange, with the implication that they would receive a reduced servicing fee if the interchange were to disappear. If interchange credit is given in yield or in servicing expenses, the security ratings will depend on the ratings of the servicer and trustee, and may be affected by a lowering of the rating on either party.
80. When Standard & Poor's determines what yield stresses it will apply, we also consider the impact that legislation or regulatory actions could have on interest rates and fees, and lower yield assumptions may be applied in more stressful rating scenarios.
81. 'BBB' rating category stress cases are less stressful rating scenarios than the stress cases for higher ratings, and they generally assume that an issuer has some ability to manage and re-price its portfolio in a rising loss environment. In cash flow runs for the 'BBB' and lower rating categories, we assume yield will gradually decrease from a base-case level and result in a breach of the spread account trapping trigger.
82. Portfolios that have a high portion of high-quality prime cardholders are usually assumed to have smaller yield haircuts than subprime portfolios because we believe they are likely to experience smaller increases in delinquencies, and they are less likely to be affected by legislative or regulatory action, because fees and interest rates for prime portfolios are significantly lower than those for subprime customers.
83. Table 6 shows an example of the range of stresses we generally apply to yield for transactions that do not have specific amortization events when yield falls below a specific level.

**Table 6**

Stresses Applied To Yield		
Rating	Yield after haircut stress to base-case yield assumption	Stress
AAA	45%-70% of the base case	Yield equals the stressed base-case assumptions for the life of the cash flows*
AA	50%-72.5% of the base case	Yield equals the stressed base-case assumptions for the life of the cash flows*
A	55%-75% of the base case	Yield equals the stressed base-case assumptions for the life of the cash flows*
BBB	65%-80% of the base case	For modeling purposes, yield starts at the base-case assumptions and decreases to the stressed level over 15-20 months
BB	70%-85% of the base case	For modeling purposes, yield starts at the base-case assumptions and decreases to the stressed level over 18-24 months

**Table 6**

**Stresses Applied To Yield (cont.)**

\*The haircut is applied in the first month of amortization for modeling purposes.

84. The range of rating-specific stressed yield as a percentage of the base case that we apply to the portfolio yield in some markets is higher. For example, in Japan, the assumed percentage is generally 10 to 15 percentage points higher than the assumptions in table 6. As noted in the country-specific criteria article, the lower stress applied to yield in Japan is based on specific industry, regulatory, and transaction structural considerations. Relative to most other markets, credit cards in Japan have limited card fees, lower payment rates, and lower portfolio turnover rates. In addition, credit card ABS structures in Japan generally include specific early amortization triggers based on portfolio yield.

**Loss rate assumptions for revolving lines of credit**

85. As noted in paragraph 14, for revolving lines of credit where the securitized transaction has a revolving period followed by an amortization period and early amortization triggers, we generally assume that, following an early amortization event, the loss-rate related triggers are breached and monthly loss rates increase over a 12- to 24-month period to a rating stress-specific peak loss rate. We generally base our starting point for our rating scenario loss on an analysis of the transaction-specific loss-rate related performance-based early amortization events. Table 7 provides an example of the range of stresses we generally apply to losses in establishing a stress scenario peak loss rate when a typical portfolio's base-case loss rates are in the 5%-20% range. The range applied to a portfolio may be higher or lower based on a portfolio-specific analysis.

86. According to most transaction structures, a performance-based amortization event, most commonly known as a base-rate trigger, will typically occur when three-month average excess spread is less than zero. That is, the three-month average portfolio yield, net of losses, is insufficient to cover the bond coupon, servicing fees, and other transaction-related fees averaged for the same period. For transactions that include a base-rate trigger, the starting level of excess spread (stressed portfolio yield minus the sum of the assumed starting point losses, bond coupon, and servicing fees) modeled in rating-specific stress scenarios are generally negative. Further, the level is generally increasingly more negative for successively higher rating scenarios. For example, In the analysis of U.S. credit card ABS, the starting level of excess spread is generally -3%, -4%, and -5% for 'A', 'AA', and 'AAA' rating scenarios, respectively. The number of months losses are steadily increased before losses peak and then remain at that level for the remainder of the transaction are shown in table 7. For example, in an 'AAA' scenario, we generally assume that excess spread is negative (an amortization event has occurred) and losses increase to their peak level over 12 months and then remain at that level.

**Table 7**

**Typical Stresses Applied To Losses**

Rating category	Stress multiple to base-case loss assumptions (x)	Typical time horizon from base-case assumptions to peak losses (mos.)
AAA	3.00-6.60	12
AA	2.50-5.25	12
A	2.00-3.75	12
BBB	1.50-2.50	18-20
BB	1.25-1.75	18-24

**Table 7**

**Typical Stresses Applied To Losses (cont.)**

\*Subject to adjustments based on country-specific risk factors and the sovereign rating on the country where the obligors reside (see "Methodology And Assumptions For Ratings Above The Sovereign--Single-Jurisdiction Structured Finance," Sept. 19, 2014).

87. Some transactions have both base-rate early amortization event triggers and excess-spread trapping triggers that, if breached, will fund a spread account to a specified level. To the extent a class of securities benefits from excess-spread trapping triggers, we will generally model transaction cash flows assuming that portfolio losses increase from a level that would cause a trigger to be breached to the rating scenario peak loss level over the time period outlined in table 7 for rating scenarios 'BBB' and below.
88. Where a transaction does not have a base-rate trigger and instead has a specific loss-rate amortization event (e.g., the annualized three-month average loss rate exceeds a specified percentage of the pool balance), we generally model loss rates increasing from the base-case level to their peak level over 12 months and then remaining at that level for investment-grade rating scenarios.

**Dilution rate assumptions for credit card ABS**

89. Dilutions are noncash reductions to the receivables balance, including credit given to cardholders by merchants for merchandise returns; reductions in receivables balances offered by the issuing entity for items such as rebates, refunds, and adjustments for servicer errors; reductions due to fraudulent or counterfeit activities; and removals of noncomplying receivables in a trust. Noncomplying receivables are receivables that breach any representations made by the seller when sold to the trust. These receivables are deemed ineligible to serve as collateral and, as such, are usually bought back from the trust by the seller. Typically, dilution is covered by the seller's interest under the transaction documents, although we have seen structures where dilution is covered through the payment waterfall and factored into the credit support.
90. Typically, returned or refused merchandise is the primary reason for dilution in a portfolio. Most services rendered (such as meals at a restaurant), balance transfers, and cash from cash advances are generally not returnable and, therefore, are not subject to dilution risk. Trusts that include a significant portion of cardholders that revolve their balances typically have lower dilution because their purchases were made many months or even years ago, and may not be subject to return. Dilution typically runs higher in portfolios with higher purchase activity compared with portfolios with more revolvers. Trusts that contain private-label retail credit cards typically have higher and more seasonal dilutions because most receivables are generated through the purchase of returnable merchandise. This differs from bankcard portfolios, which may include receivables generated through balance transfers and services and, thus, are not subject to return. Also, dilution data may differ among the retail portfolios depending on the merchandise offered and a particular retailer's return policy.
91. Standard & Poor's generally assumes that receivables dilution will cause the seller's interest to reduce to zero at the beginning of the amortization period. The seller's interest may later become positive in cash flow runs where we assume that new receivables are added to the trust after the start of rapid amortization.
92. We generally look at historical monthly return and fraud data and focus on both the level and timing of current and historical dilution patterns. Monthly dilution data is generally staggered over 30, 60, and 90 days from the purchase

dates, with the majority of returns occurring in the first month following the purchase. For a typical portfolio, we generally assume a base-case cumulative dilution rate that is equal to the base-case monthly dilution multiplied by 100% in the first month, plus 20%-50% in the second month, plus 10%-20% in the third month. If historical data show that a majority of returns occur in later months following the purchase activity, Standard & Poor's will increase the lag assumptions. We will then apply rating-specific stress multiples to the base-case assumptions.

93. Table 8 provides an example of the range of multiples we generally apply to cumulative base-case dilution rates.

**Table 8**

**Multiples To Base-Case Dilution Assumptions\***

Rating category	Multiple range (x)
AAA	3.00-5.00
AA	2.50-4.25
A	2.00-3.50
BBB	1.50-2.25
BB	1.25-1.75

\*Multiples are applied in the first month of amortization for modeling purposes.

## RELATED CRITERIA AND RESEARCH

- Global Framework For Cash Flow Analysis Of Structured Finance Securities," Oct. 9, 2014
- Global Framework For Assessing Operational Risk In Structured Finance Transactions, Oct. 9, 2014
- Methodology And Assumptions For Ratings Above The Sovereign--Single-Jurisdiction Structured Finance, Sept. 19, 2014
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- European Consumer Finance Criteria, March 10, 2000

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