MOODY'S INVESTORS SERVICE

CROSS-SECTOR RATING METHODOLOGY

Global Structured Finance Data Quality Evaluation Approach

This rating methodology replaces *Global Structured Finance Data Quality Evaluation Approach* published in March 2021. In Appendices 2 and 3, we clarified our approach to evaluating third-party reports and representations and warranties, respectively, for US residential mortgage-backed securities (RMBS) transactions. We also transposed the former Appendix 4, which describes our approach to originator assessments in EMEA and Asia-Pacific RMBS transactions, into our sector methodology, *Moody's Approach to Rating RMBS Using the MILAN Framework*. Additionally, we made limited editorial updates. These updates do not change our methodological approach.

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This cross-sector methodology explains our global approach in considering data quality in structured finance transactions. A key element of our initial rating analysis of a structured security is an evaluation of the characteristics of the underlying assets.[1] In assessing those characteristics, we typically use data provided by the originator of the transaction or other relevant transaction parties.[2] Consequently, our assessment depends on the extent to which the data and the process used to gather the data provide an accurate representation of the asset characteristics. Therefore, our rating analysis relies, in part, on the "quality" of the data[3] provided.

Even though we expect that data provided to us for analyzing a transaction is accurate, complete and up to date, we may take additional steps to consider data quality. In these instances, four characteristics of the transaction are generally considered:

1. The originator's alignment of interest with investors, i.e., incentives to provide high-quality data.
2. The originator's policies and procedures.
3. The extent to which other disinterested third parties have reviewed the data.
4. The presence and/or rigor of any representations and warranties (R&W) in supporting data quality.

1 To assess the characteristics of the assets, we receive two main types of data: (i) portfolio or loan-level data and (ii) historical performance data. The collateral data requirements to rate structured transactions vary by sector and are usually described in our rating methodologies for specific asset types. If we need to further consider data quality during our surveillance process, we generally consider the same four elements mentioned in this methodology.

2 For example, trustee or collateral manager.

3 Note that this methodology is focused on the quality of the data regarding the loans, not the quality of the loans themselves, i.e., their creditworthiness. Loan quality is obviously crucial to the performance of a transaction and is an essential part of our analysis. We describe our approaches to evaluating loan quality in our rating methodologies for specific asset types. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

We will rate a transaction only if we have sufficient information from reliable sources and the information meets a minimum threshold of reliability by reference to the four characteristics described above. This minimum threshold may vary depending on the type of data we use in our analysis. Typically, the minimum threshold can be achieved only if data quality is adequately supported across the four dimensions described above, although strength in one element can offset weakness in another. For example, when we use audited financial statements, the need for us to consider further indicators of data quality may be more limited.

Even in cases in which this minimum level is reached, data quality concerns may limit the rating we assign to a security or may result in our assessment that, to be consistent with a particular rating, a higher level of credit enhancement is needed than would otherwise be the case.

The need to consider data quality and the weight that we place on each of the four elements for a particular transaction depends on a number of factors including the asset type, the type of data provided,[4] the proposed structure, the creditworthiness of the transaction participants, laws and regulations of the governing jurisdiction, regulatory requirements and regional market practices. Due to the numerous factors listed above, the impact of a weakness in one element does not always result in the same conclusion. For example, the need for strong representations and warranties may be more limited in a transaction for which all the data has been reviewed by a reputable third party. In cases where the originator is regulated in an effective way, analyzing the business model may be of less importance. If concerns about data quality arise, we will discuss them during our rating committee process to determine if we can rate the transaction or what the impact on the ratings may be.[5]

The body of this methodology describes our general approach to considering data quality in the credit analysis. For certain asset classes and regions, more details describing what we analyze when reviewing third-party reports and representations and warranties may be available either in the appendices or in separate reports accessible through the related publications section at the end of this report.

Alignment of Interest Assists Data Quality

An originator is more likely to provide high-quality data if it has incentives to do so and significant risks of providing low-quality data. Consequently, we may consider factors that can affect the motivation of the originator, which include (i) the originator's business model, (ii) the economics of the transaction and (iii) the representations and warranties in place in the transaction documentation.

The business strategy of the originator impacts its motivation to produce good quality data. We may consider the importance of securitization within the originator's overall business strategy and financial resources. Transactions with high-quality data are generally less likely to experience negative "surprises" regarding the performance of the assets. A transaction that experiences issues relating to data quality may negatively affect the originator's ability to issue subsequent transactions.

We may also consider the originator's business model to understand the on-going risk exposure that the originator may have on these or similar assets (originate and hold vs. originate and distribute model), as on-going risk exposure and random selection of the securitization portfolio would further incentivize the originator to produce accurate data for internal and external purposes, including regulatory or central bank reporting.

Alignment of interest throughout the full life cycle of the transaction incentivizes originators. If the originator retains an economic interest throughout the life of the transaction, such as that required by risk retention rules,[6] the originator has a stronger incentive at the outset to ensure high-quality data regarding the assets. If the originator makes most of its profits from the transaction immediately upon securitization or early in the life of a transaction, the originator has less incentive to devote resources to prevent data

4 For example, if the data provided consists of audited financial statements, corporate ratings or third-party valuation reports, the need to further consider data quality may be more limited.

5 The data quality analysis approach described in this methodology helps our evaluation of a structured finance transaction. However, it does not eliminate the possibility that factually incorrect data is provided to us or fraud may be committed by the originator or a third party.

6 For example, Article 122a of the Capital Requirements Directive.

inaccuracies as those inaccuracies may reveal themselves later in the life of the transaction when the originator may have little financial stake remaining.

Tight representations and warranties incentivize originators to produce more reliable loan-level or portfolio data. Representations and warranties provide an incentive for an originator to be diligent with their data, since the originator is generally required to remedy breaches that occur on the portfolio later in its life. We therefore incorporate our analysis of the representations and warranties (as described in more detail later in the methodology) into our consideration of the motivation of the originator and its alignment of interest with investors.

The Originator's Abilities and Infrastructure Drive the Quality of Data

In considering data quality in relation to a particular transaction, we generally incorporate an analysis of the originator's practices and procedures. Our analysis focuses on (i) origination procedures and policies and (ii) the originator's financial and technological stability.

We consider the originator's standards of underwriting and record keeping procedures. High standards of underwriting[7] and well documented procedures provide evidence that the information obtained at the time of loan origination is of high quality and therefore the data provided for securitization purposes is of high standard. We may analyze the originator's abilities and practices with respect to record keeping and file management to consider the extent to which the assets included in the asset pool are likely to meet the eligibility criteria of the transaction. The credit risk management abilities and practices influence the extent to which the originator is likely to quickly detect inconsistent performance behavior and adjust underwriting guidelines accordingly.

For transactions with multiple sellers, we may analyze the extent to which controls and processes are in place to ensure that the applicable underwriting standards are adhered to.

The originator's financial stability and technological capabilities drive the quality of data produced. An originator with strong financial resources will be better positioned to allocate resources to ensure appropriate and sufficient data management and to invest in technology that will allow robust origination and risk management systems. It will also have the creditworthiness to repurchase any loans in breach of representations and warranties.

As part of our consideration of an originator's technological capabilities, we may inquire about the systems used to control and enhance processes. For transactions that allow for new assets to be added after the closing of the transaction, for example, potential technical instabilities could lead to the addition of new assets with different characteristics than those of the assets in the original pool.

When considering data quality, we also analyze whether the reported historical performance for this specific type of assets is consistent with our expectations for that sector, as that may provide an indication of the level of data quality. Inconsistencies could indicate either errors in reported asset characteristics or other originator-specific factors, such as weaknesses in the origination or quality control process not reflected in the asset characteristics. We also may consider if there have been changes in the originator's business model or underwriting policies and therefore future portfolio performance may be different than that indicated by historical data.

Competent and Independent Third-Party Reviews Assess the Quality of Data

The sponsor of a transaction may hire a third party to assess various aspects of the data. In many markets, third-party reviews focus on pre-securitization loan level reviews which aim to assess the accuracy of data used in the credit analysis. In some markets, third-party post-securitization reviews may take place to increase accountability and transparency in the enforcement of breaches of representations and warranties.

7 For example, the amount and type of information that the originator requires to process a loan request.

In addition, in some regions the regulatory framework imposes specific requirements on data reporting, which may enhance the quality of data provided for securitization transactions.

When reviewing third-party reports, we usually focus on: (i) the degree of independence of the third party, (ii) the financial strength and the experience of the third party to carry out its tasks and (iii) the scope and depth of the third-party review.

The degree of independence of the third party is a key factor. We consider the degree of independence of the party performing the data review from other transaction parties, as well as the consequences, financial or reputational, if the review is not performed to the agreed standard.

We may consider the experience of the third party to carry out its tasks and its financial strength. The ability of the third party is suggested by its past performance and experience of its staff. The financial strength, if available, is an indicator of the resources that the third party will have available to dedicate to this task but also represents the financial or reputational risk that the third party may incur if it does not perform its obligations to a high standard.

The scope and depth of the review determines the quality of the output. The scope and depth of the review determines the extent to which the third-party reviews (i) the accuracy of the data provided or, for certain countries/regions, that the assets meet the originator's underwriting guidelines, (ii) that exceptions identified are limited and reasonable and (iii) that the originator documents exceptions. We also consider the share of assets reviewed and the confidence level that this review can provide.

For asset types in which market property valuation is an important variable, such as residential mortgages, the extent to which the third party assesses the quality of the appraisals and the documentation of the appraisals in the loan files are most important. We also note the importance of the extent to which the third party assesses whether the loans are in compliance with all applicable laws and are enforceable against the borrowers.

Rigorous Representations and Warranties Support Data Quality

Our consideration of data quality may include an analysis of the rigor of the representations and warranties. We may analyze (i) the scope, (ii) the mechanisms to identify breaches of the representations and warranties, (iii) the procedures to enforce remedies in the event of breaches and (iv) the financial strength of the representations and warranties provider. In addition, we take into account any country specific regulatory requirements in terms of representations and warranties that parties need to provide in the context of a securitization.

The scope of the representations and warranties sets out the level of coverage. We may consider (i) the extent to which key characteristics of the assets are covered by the representations and warranties, taking into account regulatory requirements, and (ii) how tight the definition of a breach is in the transaction documents.

We examine the mechanisms to identify breaches of the representations and warranties. We may consider the extent to which the transaction includes specific procedures to identify breaches. In cases in which a third party is included to conduct post-securitization "forensic" reviews, we consider its independence from the party providing representations and warranties and the clarity and effectiveness of the conditions under which the third party is obligated to examine assets for potential breaches.

We also consider the procedures to enforce remedies in the event of breaches. We may examine the extent to which the guidelines and time frames for breach resolution in the transaction documents are clear and unambiguous and provide for timely remedies. For transactions that rely heavily on representations and warranties, financial remedies that can be implemented without the active participation of the originator would be a positive factor.[8]

The analysis of the financial strength of the provider indicates the ability of the provider. The financial strength of the representations and warranties provider is an indication of the ability of the provider to remedy breaches.

Incorporating Data Quality Into Our Rating Analysis

We will rate a transaction only if we have sufficient information from reliable sources. However even in cases in which this minimum level is reached, data quality concerns may limit the rating we assign to a security or may result in our assessment that, to be consistent with a particular rating, a higher level of credit enhancement would be needed than would otherwise be the case.

When concerns are isolated to certain characteristics of the underlying assets, we may make prudent qualitative assumptions on the proportion of the portfolio with these characteristics. Alternatively, if the concerns are more general, we may apply a qualitative adjustment to our overall assessment of the asset pool.

Monitoring

This methodology focuses on data quality and elements we may consider when we analyze a structured finance transaction at origination. Data quality is important throughout the life of the transaction as accurate performance information is essential for our surveillance process. It is our expectation that, in addition to the parties providing us data at origination, other relevant third parties associated with the transaction, such as servicers, collateral managers, trustees and cash managers provide accurate and complete information over the life of the transaction. If we need to further consider data quality during our surveillance process, we generally consider the relevant elements in the list mentioned above and if concerns arise, we discuss those in surveillance rating committees. Such concerns may result in an increase in the level of credit enhancement consistent with a particular rating, a reduction in the rating assigned or lead to a withdrawal of the assigned rating if we have insufficient information to maintain the rating.

The weight and importance that we place on each element varies, depending on the type of transaction, asset class, type of data provided and regulatory requirements.

8 For example, reserve funds set up for this purpose or trapping of excess spread if no benefit has been provided to the deal.

Appendix 1: Evaluating TPRs for Structured Finance and Covered Bond Transactions in EMEA and Mexico

Originators and arrangers regularly provide us with reports that examine the integrity of data used as part of the rating process for securitization and covered bond transactions in Europe, the Middle East and Africa (EMEA) and Mexico. Third parties usually conduct these data reviews on a sample of the underlying asset pool.

This appendix details our key considerations when reviewing third-party review (TPR) reports, which help assess the integrity of the transaction-related loan-level data provided to us by originators.

In addition, we detail our key considerations for TPR reports across different asset classes in EMEA including EMEA residential mortgage-backed securities (RMBS), consumer asset-backed securities (ABS), small and medium-sized enterprises (SME) ABS, SME collateralized loan obligations (CLO) and commercial mortgage-backed securities (CMBS) transactions. As many aspects of TPR reports are shared between asset classes, we (i) initially describe our key considerations for RMBS; and then (ii) provide a summary of key differences for other asset classes.

We apply similar considerations for TPR reports across relevant asset classes in Mexico.

Residential Mortgage-Backed Securities

The TPR typically includes loan, borrower and property characteristics that are the basis for our quantitative residential mortgage loan analysis. We review the scope of the checks specified in the TPR report to determine that the extent of the review being undertaken is sufficient for the purposes of our rating process.

In particular, we consider whether the data check: (i) compares the information contained in the paper loan files and the originator's source system; and (ii) aims to maximise confidence in the accuracy of the data relevant to our analysis. It is often the case that the review does not cover every item that we consider in our analysis. If data material to the rating is not included in the TPR report, the weight placed on the TPR in arriving at the rating will be limited. In such cases, we may take additional steps to consider data quality.

TPR reports that give rise to concerns over data quality and accuracy may lead to negative adjustments being applied in our credit analysis. We may also apply negative adjustments to the input parameters on a portfolio basis for characteristics that have not been reviewed or for which the results of the review are poor. We may not assign high ratings or decide not to rate securities, without a TPR report absent any mitigants. If a TPR report does not contain information on key parameters, or raises concerns over data quality and accuracy, we may also limit the ratings or not assign ratings.

The loan-level information provided by the issuer or its agents is usually extracted from the originator's IT systems and provided in a standardized template. The TPR reports are usually based on a sample and would normally include checks on the conversion of the raw data into the standard data format in order to also capture any errors in the process. We will consider whether: (i) the TPR assesses whether the data provided to us matches the data in the original paper loan files; and (ii) the resulting report provides detailed information on all errors that were found.

The scope of the TPR is particularly relevant for the interpretation of the results. It cannot be implied that the third party considered the procedures to be sufficient to detect errors. Therefore, the description of how the review was conducted is of particular importance when considering the results.

The data points we typically look at in our analysis of RMBS transactions in EMEA are listed below.

1. Borrower employment type
2. Current loan balance
3. Original loan amount

4. Ranking of mortgage
5. Amount of prior ranking mortgages
6. Amount of pari-passu ranking mortgages
7. Amount of arrears
8. Number of months without arrears (“months current”)
9. Loan origination date
10. Loan maturity date
11. Loan amortization type
12. Loan purpose
13. Interest rate type
14. Interest reset date
15. Principal payment frequency
16. Interest payment frequency
17. Interest rate/margin
18. Property type
19. Property value
20. Valuation date
21. Property occupancy type
22. Property location (postal code)
23. Security documentation
24. Proper loan agreement execution

The third party would normally check for items not contained in the paper files (such as items 2, 7 and 8) in the system that generates them. Ideally, a third party would normally separately review the integrity and functioning of the system, as this is not usually part of the review of the pool data. In the context of providing loan-level data, it is particularly important that all calculations are done properly and that the individual loan's payment history can be tracked in the system.

Additional fields that could be covered depend on the mortgage products included in the pool and whether the data is provided at all. The following list provides some examples relevant only in some markets.

1. Borrower's adverse credit characteristics (examples would be county court judgments or individual voluntary arrangements in the UK or certain Bureau Krediet Registratie (BKR) codes in the Netherlands)
2. Flexible loan amount
3. Further advance amount
4. Additional collateral provider
5. Additional collateral value
6. Mortgage insurance type
7. Mortgage insurance provider
8. Property valuation type
9. Borrower income

10. Borrower income certification

In the TPR, minor deviations in certain data fields may be tolerated such that small discrepancies are not reported as differences in the TPR report. Examples include a couple of days deviation regarding the property valuation date or a minor difference in the property valuation.

Sample Size

We understand that the determination of the necessary sample size required to reach a certain confidence level is at the discretion of the independent third party that conducts the data check, as the sample size depends on a number of assumptions about the distribution of the errors in the pool. The sample size is normally agreed between the issuer (or its agents) and the third party that conducts the TPR.

According to current market standards, the size of the sample that needs to be checked depends on: (i) the assumed kind of distribution of errors in the pool; (ii) the size of the pool; (iii) the target confidence level; (iv) the assumed error rate; and (v) the precision limit (i.e., the acceptable variation of the actual error rate compared to assumed error).

The most common distribution assumption for errors in the pool is the hyper-geometric distribution. The assumed error rate, the precision limit and the targeted confidence level are determined before the data check. The most frequently used assumptions of the error rate vary between 0% and 1%.

For RMBS transactions in EMEA, we generally receive TPR reports that use a confidence level of 99% and a precision limit of 1% to determine the sample size. These are two important parameters for determining the sample size of the data check.

Exhibit 1 provides the typical sample sizes that we have observed in the agreed-upon procedures reports provided to us for different combinations of confidence level and sample sizes.

EXHIBIT 1

Typical Sample Sizes for Pools of 5,000 or More Assets

Confidence Level/Precision Limit	Sample Size RMBS
95/5	50 to 70
95/1	290 to 310
99/1	430 to 470

Source: Moody's Investors Service

Poor results can lead to qualitative adjustments of our assumptions for the asset pool. These adjustments take into account the limitations of the data by increasing the assumed credit risk. For example, we apply negative adjustments to pool characteristics, such as the loan purpose, where the TPR indicates divergences from the parameters shown above.

For other types of data, such as employment type, we may assume a higher portion of self-employed borrowers in the pool, leading to higher levels of credit enhancement to reach a given rating.

In instances where the TPR indicates that the data provided for material pieces of information may not be accurate, we may not be able to either: (i) assign high ratings; or (ii) rate the transaction at all in the absence of appropriate mitigants. For example, a poor TPR result related to property valuations may lower the rating that could be assigned because the loan-to-value (LTV) ratio is the key element of our EMEA RMBS analysis. An example of mitigants to the poor data quality provided in the past may be a commitment by the originator to verify the valuations for all properties in the pool through an independent third party and to repurchase those loans for which the property valuations provided were higher than those contained in the loan files.

Revolving Transactions

For revolving transactions where principal collections from the underlying pool of loans are not used to repay the notes but to purchase new receivables, the receivables purchased will not be covered by the initial TPR. If the initial TPR indicated high data quality and the procedures to identify the obligations of the originator to repurchase ineligible loans are sufficiently robust, regular additional data checks may not be necessary after closing from a rating perspective. In other cases, TPR reports for additional loans sold to the issuer during the term of the transaction may be necessary to maintain the assigned ratings. This same principle applies to frequent repeat transactions, such as master trust type structures with very frequent issuances.

Asset-Backed Securities Backed by SME Loans

The key data points that we consider relevant to our analysis of SME ABS and SME CLO transactions in EMEA are listed below. We consider these relevant for the review except where irrelevant to a country and/or transaction.

1. Loan identifier
2. Borrower identifier
3. Borrower group identifier
4. Borrower location
5. Borrower turnover (or equivalent)
6. Identification of industry sector (e.g., NACE Code[9])
7. Current loan balance[10]
8. Origination date
9. Maturity date
10. Loan weighted average life
11. Loan in arrears (number of days)
12. Loan margin
13. Loan interest rate base rate/type
14. Principal payment frequency
15. Interest payment frequency
16. Grace period (and type of grace period)
17. Loan amortization type
18. Loan collateral value[11]
19. Collateral type/subtype
20. Ranking of mortgage
21. Collateral location
22. Borrower internal rating[12]
23. Senior secured/senior unsecured loan[13]

For items not contained in the paper files (such as items 7, 10 and 11), the independent third party normally checks this data in the system that generates it.

[9] Different originators may use different codes to identify industry sectors. Although we prefer NACE, others may be sufficient.
[10] Depending on the loan product type, the flexible loan amount or further advance amount may also be relevant.
[11] Not relevant for CLOs.
[12] Not relevant for SME ABS.
[13] Not relevant for SME ABS.

Exhibit 2 provides an overview of the sample sizes we would typically expect for SME ABS (including leases to SME) pools that contain around 1,000 to 10,000 loans and for SME CLO pools that contain around 300 to 500 loans.

EXHIBIT 2

Typical Sample Sizes for Pools of SME Assets

Confidence Level/Precision Limit	Sample Size SME ABS	Sample Size SME CLO
95/5	55 to 60	55 to 56
95/1	260 to 295	190 to 225
99/1	370 to 470	235 to 300

Source: Moody's Investors Service

In cases where the result of the TPR does not meet our expectations, we may make conservative assumptions relating to certain characteristics that drive the mean default probability determined through our refined approach,[14] or we may increase the volatility of the default distribution to take into account the increased uncertainty.

Asset-Backed Securities Backed by Consumer Assets

As part of the rating process for other asset-backed securities comprising mainly granular consumer type portfolios such as credit cards, auto loan/leases and consumer/personal loans (ABS consumer transactions), we primarily use a combination of: (i) pool-specific information (e.g., historical performance data, portfolio stratification tables, bank-internal scoring/rating systems, etc.); (ii) and more generic sources of information (e.g., performance benchmarking against previous deals, macroeconomic data, etc.) to determine the default or loss assumptions for the securitized portfolios. Hence, we do not typically rely upon detailed loan-level information in the analysis, given the very high granularity and base historical data analysis. Nonetheless, stratification tables are a key variable in ABS consumer transaction analysis. We analyze some specific pool risks and model inputs mainly based on the information in the stratification tables and not on historical data or other sources of information. Hence, the accuracy of the portfolio stratification tables (and underlying data) is also material for the overall analysis. For example, material errors in the underlying interest rate could place into question the available excess spread in the transaction and resulting modelling inputs. Another example is that of material errors in loan origination date leading to errors in the seasoning and resulting default timing curves.

The key data points in our analysis of granular consumer and auto finance portfolios in EMEA are listed below. We consider these to be relevant for the data check except where irrelevant to a country and/or transaction.[15]

1. Loan identifier
2. Borrower identifier[16]
3. Borrower location
4. Borrower employment status[17]
5. Original loan amount
6. Current loan balance[18]
7. Loan interest rate base rate/type

[14] For more information on our approach to rating SME balance sheet securitizations, a link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

[15] All points below are considered material for our analysis in the context of this methodology. The loan identifier and borrower identifier are included in order to assess whether the loans sold are indeed included in the data set (stratification tables) we use to analyze the portfolio.

[16] For portfolio with SME or corporate obligors, a further group obligor would also be requested.

[17] Minimum information includes private individual borrower or SME/corporate obligor.

[18] Depending on the loan product type, the flexible loan amount or further advance amount may also be relevant.

8. Loan interest rate/margin
9. Loan origination date
10. Loan maturity date
11. Principal and interest payment frequency
12. Grace period (and type of grace period)
13. Loan amortization type (where applicable, balloon/bullet instalment amount and date)
14. Loan in arrears (number of days)
15. Loan purpose/subtype[19]
16. Proper loan agreement execution (i.e., signed credit application)

For items not contained in the paper files (such as items 6 and 14), the independent third party normally checks this data in the system that generates it. Ideally the integrity and functioning of the system would have been checked separately as usually this is not part of the TPR.

Additional fields that could be covered depend on: (i) the security or mortgage available; and (ii) asset specifics. For example, in most markets auto ABS would typically include:

17. An available car registration document
18. Manufacturer
19. Contract residual value (where applicable)

Other data points can be important for the analysis and could be included in the TPR report, depending on the portfolio eligibility criteria and transaction specific portfolio characteristics that drive the risk analysis. In cases where the TPR does not cover all relevant characteristics or the results do not confirm the expected data quality, we may apply additional stresses when determining the mean default or expected loss assumption.

With regards to our considerations for the sample size and revolving transactions, see the "residential mortgage-backed securities" section.

Asset-Backed Securities Backed by Esoteric/Other Assets

There are a number of other asset classes within EMEA in which we use pool-specific information to varying degrees (e.g., loan-level data, historical performance data, portfolio stratification tables, bank-internal scoring/rating systems, etc.) as part of the analysis. Typically, the accuracy of the loan-level data used to prepare the portfolio stratification tables describing the loan and borrower characteristics of the underlying pool is also important, as it forms the basis of key data integrity check required as part of the analysis. EMEA ABS involving trade receivables, diversified payment rights, unsecured non-performing loans, dealer floor plans, tax liens and future receivables fall into this category.

Commercial Mortgage-Backed Securities

Given the broad range of transaction types covered by our EMEA CMBS methodology, the information subject to third-party checks varies. Most notably the degree of granularity at the borrower, loan, property and tenancy level determines the level of these checks.

As part of our analysis we may review TPR reports on the provided data template or on the calculations used to derive key data points. Alternatively, we may directly compare the key data points provided against other documentation that can help support the integrity of this information. This documentation includes recent third-party reports such as appraisal reports, environmental reports, property condition assessments,

19 Loan product type refers to the name of the sub product. For example, consumer loans may be divided into two types: (i) personal loan products (no specific purpose); and (ii) purpose loans (point of sale to finance the purchase of a specific item). Another example is that auto loans may be differentiated between financing used and new cars.

or other third-party reviews done on either the property or the loan and borrower as well as the loan documentation including loan agreements, security and hedge documents.

The key data points in our analysis of CMBS transactions in EMEA are listed below.

Borrower Level

1. Borrower type
2. Borrower country

Loan Level

3. Loan identifier
4. Borrower identifier
5. Current loan balance
6. Loan currency
7. A/B note split
8. Origination date
9. Maturity date
10. Loan interest rate and margin
11. Amortization profile and maturity balance
12. Hedging details
13. Escrow accounts and reserves
14. Additional borrowings of the borrower
15. Waterfall on borrower level (including split of interest and principal payments between A-Loan and B-Note)
16. Syndication information (including share of the originator in the whole syndicated loan)

Property Level

17. Property type
18. Property location
19. Ownership type
20. Property size
21. Property age and date of recent renovation
22. Energy performance information
23. Property valuation details (including appraised value, valuation date)
24. Cross-collateralization details

For Multifamily, Hotel, Healthcare and Student Housing Properties

25. Number of units/rooms/beds
26. Current and historical revenue details
27. Current and historical operating expense details
28. Historical and expected capex spending
29. Current and historical occupancy Information
30. Property condition details including energy performance information

31. Lease details (if applicable)

Tenant Level

32. Tenant name
33. Area occupied
34. Rent guarantee details
35. Lease start date
36. Lease end date
37. Lease break dates
38. Lease type details
39. Gross rent
40. Turnover rent
41. Expense details
42. Rent net of operating expenses

For concentrated loan pools with only one loan or a small number of loans, we assess most of the mentioned data points by comparing the provided information against the loan documentation and third-party reports. In addition, we usually review a TPR report for the rental income information provided at the tenant level. Lease agreements and borrower statements, showing annual total property income and expenses, would usually be checked by a third party at closing. The sample size depends on the granularity of the rental income and the number of individual leases.

For more granular loan pools for which not all the underlying loan documentation and property information is provided, we usually review a pool TPR report that also covers loan and property level information. Regarding the sample size, the same considerations as described above in the section on RMBS apply.

Covered Bonds

We do not routinely receive TPR reports when rating covered bond transactions. We may consider TPR reports in the analysis in certain cases, for example if the covered bond issuer is lowly rated and/or unregulated and the covered bond rating is very high. In covered bond transactions, the loans that secure the covered bonds are normally originated by the issuer group and remain on the issuer's balance sheet. The expectation is that issuers, as typically regulated and supervised financial institutions, will maintain high standards of quality control over all their loan operations, regardless of whether the loans are in the cover pool or not. For those issuers suffering a decline in creditworthiness, our rating methodology operates to restrict the ratings of the covered bonds to a limited number of notches above the issuer's rating.[20] Furthermore, the amount of losses we model for covered bond transactions are only partly derived from the collateral analysis. The remainder are due to market risks that arise due to refinancing risk and interest rate and currency mismatches. As a result of the above factors, we would not expect a TPR report to have a material impact on our analysis for the majority of covered bond transactions.

Asset-Backed Commercial Paper

The three common types of asset-backed commercial paper (ABCP) conduits present a slightly different model of securitization compared with term asset-backed securities (ABS).

[20] For more information, see our methodology that describes our approach to rating covered bonds. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

First, single-seller ABCP programs, which are most similar to term ABS, finance receivables generated by one sponsor. For these programs we follow the same procedures as the rating team responsible for that asset class, including, where appropriate, operational reviews, servicer assessments and TPR.

Second, for ABCP conduits that primarily fund rated securities, our rating on each security encompasses concerns about the quality of the data and its relation to evaluating asset performance. The ABCP rating process focuses on issues of portfolio management, credit support and liquidity to determine the conduit rating.

Third, the majority of ABCP conduits are bank-sponsored multi-seller programs that fund assets originated by bank customers. The bank sponsor structures each transaction for the conduit and presents the transaction to us in its defined role as administrator.[21] The role of administrator typically includes a number of responsibilities: (i) to properly structure the transaction; (ii) to review and approve the transaction for funding by the ABCP conduit; and (iii) to monitor and report on the performance of the transaction. For fully supported transactions our review focuses on structural and operational considerations, since, from a short-term rating standpoint, commercial paper (CP) investors do not typically bear asset-related risks due to the presence of an appropriately rated support provider. Potential losses in fully-supported transactions caused by poor data accuracy are born by the liquidity facility provider. Such liquidity facility will pay the interest and principal of all ABCP outstanding at maturity. In such cases, data integrity does not give rise to material rating concerns.

In relation to partially supported conduits where the liquidity facility provides funding in accordance with a borrowing base adjusted for defaulted assets, there are several factors that we will consider when analyzing the information/data provided by the sponsors. We typically rely on the sponsor bank's presentation of asset performance data and other transaction information. However, we may seek further data analysis, such as a review of a TPR commissioned by the originator or sponsoring bank, when limited mitigating features are available at either the program or transaction level (including the sizing of transaction or program-wide credit enhancement).

In most cases, true sale, adherence to eligibility criteria, dilution and commingling risks are covered by liquidity facilities. Consequently, our review of broad scope TPR reports typically focuses on pinpointing evidence that details how the outstanding balance, delinquent and defaulted receivables are calculated and accounted for as these are the key elements in assessing the risk passed to CP holders.

We view TPR reports as useful sources of information. We may also take other factors into account, such as: (i) the scope and results of the sponsoring bank's own due diligence; and (ii) the analysis of the originators audited accounts or regulatory filings. We give weight to the sponsor's ongoing responsibilities and interests, as well as its continued operational, financial and reputational involvement.

Synthetic Transactions

TPR reports are not normally produced in EMEA for synthetic securitizations. Losses on defaulted and worked-out loans [22] are verified by an independent third party before they can be allocated to the transaction.

As part of the loss verification process, a third party usually checks whether the loan that incurred the loss met the eligibility criteria when it was included in the pool. In some transactions, some key loan characteristics are not only checked against the eligibility criteria, but also against the data provided in respect of the loan as of closing. The loss can only be allocated to the transaction if its eligibility is verified.

This has both positive and negative aspects compared to a pool-level TPR in a true sale transaction. It can be negative as the eligibility criteria of a transaction may allow certain flexibility in loan, borrower or

[21] We use "administrator" to identify a role that may be described variously as "manager," "referral agent" or something else depending on the whims of the party drafting the conduit's legal documents.

[22] Loans for which the securing property has been sold and a loss has been realized.

property characteristics. The eligibility criteria check, which is part of the loss allocation process, does not verify that the data provided to us during the initial rating analysis is an accurate reflection of the data in the loan file. On the positive side, all loans that lead to losses are checked, rather than just a sample of the initial portfolio.

A loss verification process that compares, on a loan-level basis, the actual data to the data extracted from the IT system and provided to us at closing would contribute positively to the rating analysis of synthetic EMEA RMBS and SME ABS transactions in terms of improving data reliability.

Third-Party Reviews on Originator's Underwriting Standards

We have confidence in the quality of the loan origination standards and procedures in all major markets in the EMEA region when the respective local financial services authorities regulate entities that originate loans and leases.

However, we may need to review more detailed third-party analysis in relation to the underwriting process in the situations listed below, among others:

i) The origination process is not regulated

ii) The securitization of loan portfolios has been transferred to another party from the originator after origination

iii) Concerns in relation to some of the segments examined in our approach to originator assessments

Appendix 2: Evaluating TPRs for US RMBS

The efficacy of a TPR depends on (a) the independence and competence of the TPR firm and its staff; (b) the sample size and sampling methodology; and (c) the scope of the review.

Independence and Competence of TPR Firm

We evaluate the strength of a TPR firm based on its independence and competence. To establish independence, TPR firms generally provide an attestation that there was no coercion by any party to the transaction that limited the scope of its review or its ability to conduct an independent and thorough review. The results of the TPR are more likely to be unbiased if the TPR firm and its staff are independent of, and have no direct affiliation with, the loan originator, security underwriter, representations and warranties provider, or sponsor.

We evaluate a firm's competence based on its staff's experience and the quality of its work product. We consider whether the TPR firm has minimum criteria with respect to the experience of underwriters and appraisers that it employs to perform the review. For example, the type, depth and years of an underwriter's experience should correlate to the complexity of the loan product being reviewed. For a very low-risk product, we expect underwriters to have at least one year's underwriting experience in the primary market or two years' loan review experience in the secondary market. For a higher risk, more complex product, we expect underwriters to have more directly relevant underwriting experience in the primary or secondary market. We also consider whether the firm provides strong, clear conclusions that are well-supported and provides alternative values when it disagrees with the originator's values. We also consider whether the TPR firm has satisfactory regulatory compliance check software that is up to date with applicable federal, state and local laws.

Sample Size and Sampling Methodology

If the TPR does not cover all of the loans in the transaction, the size of the review sample and the methodology the firm used to select it determine the effectiveness of the review. We would generally, for example, consider a randomly selected sample computed using at least a 95% confidence level (based on a two-tailed t-statistic), a 2% precision level and a 5% assumed error rate that also includes a representative number of loans from each originator, as a credit neutral sample. The credit neutral sample size could also be impacted by other factors, such as the granularity of the pool, the number of and experience of the originators, and the complexity of the product types or underwriting guidelines.

Review Scope

The TPR scope refers to the breadth and depth of the review that the TPR firm performs. Generally, a comprehensive typical review would include at least the following:

» *Credit review* – The TPR firm assesses if the loans meet the originator's underwriting guidelines or, if not, the originator made a reasonable and documented exception or waiver. It also independently verifies, using third parties, key loan elements such as FICO, DTI, loan amount, valuation, occupancy, income, assets and employment. The TPR firm also uses has a robust fraud detection software or has a robust fraud detection process.

» *Property Value review* – The TPR firm considers the qualifications of the appraiser and the quality of the appraisal. It determines whether appraised values are reasonably supported by the information in the appraisal report as well as any other property value information, such as desk reviews, automated valuation models (AVMs) or broker price opinions (BPOs). If the reviewer believes the true value of a property is 10% lower than the reported value, the TPR firm will obtain an independent value based on additional appropriate property valuation methods.

» *Regulatory Compliance review* – The TPR firm tests for regulatory compliance with applicable federal, state and local regulations, including TILA (the Truth in Lending Act) and the Ability to Repay (ATR) rules.

Based on its findings, we expect the TPR firm to assign an event grade of A to D to each of the three component reviews above. The overall grade will be the lowest component grade. We use the event grades as an indication of the overall quality of the underwriting, valuation and compliance (see below). The details of why a loan obtained a particular grade play a role in determining any additional credit risk.

TPR Reporting

The TPR reporting package for a transaction generally includes a number of reports:

» A narrative summary of the review that describes:

1. the party who chose the sample and the sample selection process
2. the loans reviewed, sorted by the overall loan event grade (see below)
3. the loans reviewed, sorted by the event grade for each component (see below)
4. any anti-fraud or other software tools that the firm used as part of any independent verification of income, occupancy and property value
5. any work (e.g., property valuations) that the firm outsourced to another firm
6. the experience of the underwriting and appraisal reviewers that conducted the reviews
7. a description of the compliance software the TPR firm used, in addition to any compliance software verification process including outside audits

» The contractual scope between the TPR firm and the sponsor, along with any special instructions from the sponsor, as well as the identification of any omissions from the contractual scope compared to the full scope that the TPR firm typically offers

» The loan-level findings/conditions report that includes:

1. the initial (prior to any discussion with the sponsor) overall loan event grade and the component (credit, property value, and regulatory compliance) event grades (see below)
2. the final (after reconciliation with the sponsor/originator) overall loan and component event grades, accompanied by detailed explanations of the changes since the initial report
3. a clear and concise finding or explanation for any component grade that is less than an “A” which should not include any personally identifying information of any borrowers
4. Loan-level documentation type and length of income documentation used to qualify the loan

» A loan-level data-integrity/comparison report that checks the accuracy of certain fields of the data tape the issuer provided to us and includes all the fields that the originator provided to the TPR firm and any alternative values to the data we received that the TPR staff identifies as inaccurate based on (a) information found in the file or (b) the TPR staff's opinion based on external verification or other factors. Typically, the data-integrity report would cover at least the following fields: Amortization Type, Lien Position, Loan Purpose, Origination Date, Original Interest Rate, Original Amortization Term, Original Term to Maturity, Index Type, Gross Margin, Credit Score, Postal Code, Property Type, Occupancy, Original LTV, and Original CLTV.

» A no conflict attestation addressed to the issuer that includes:

1. the TPR firm’s declaration of independence from the RMBS sponsor and originator
2. an affirmation of no coercion by any party to the transaction that might have limited the scope of the review or limited the TPR firm's ability to conduct an independent and thorough review
3. the date and signature of the TPR firm’s corporate officer and issuer’s/sponsor’s corporate officer

TPR Analytical Impact

The TPR firm’s findings indicate risks in the quality of data provided to us or in the origination practices underlying the portfolio. If we assume that our models did not take into account these risks, we might for example:

» adjust our assessment of the originator or aggregator, which could include adjusting MILAN CE and/or EL generally by up to 10%

» conduct sensitivity analyses of collateral attributes for collateral modeling; for example, if the TPR firm finds the "owner-occupied" status to be incorrectly reported on a sample of the loans, we might quantify uncertainty with alternative model runs by changing a part of portfolio from "owner-occupied" to "investor-occupied"

» adjust the probability of default or loss given default on particular loans or portfolio to take the findings into account; for example, if the TPR indicates multiple exceptions to the underwriting guidelines without significant compensating factors, we might increase the portfolio's modeled probability of default

» finally, we might increase the credit enhancement levels necessary for the transaction to achieve a particular rating, cap the ratings, or decline to rate the transaction

The analytical impact of our TPR assessment will depend in part on our assessment of the transaction's Representations and Warranties (R&W) framework. A strong R&W framework could in some cases mitigate weak TPR elements that would otherwise necessitate more credit protection for the transaction to achieve a particular rating level. A strong TPR scope and findings could also offset some weaker elements in an R&W framework. A weak R&W framework combined with weak TPR scope or results, in some cases, could make the transaction unlikely to achieve our highest ratings, or might lead us to decline to rate the transaction.

Seasoned Loans

A comprehensive credit review of seasoned loans differs from that of newly originated loans because loan performance since origination provides more insight into the credit quality of the loans than factors such as borrower income, assets, employment and debt at the time of origination. Consequently, it would typically include independent verification of updated FICO scores, current occupancy information from available sources that include the servicer, loan modification information, borrower pay history and the number of months since origination. Generally, we expect a seasoned-loan TPR to apply when substantially all of the loans in the portfolio are at least 18 months old.

TPR Event Grade Categorization

A loan's overall grade equals its lowest component event grade.

Event Grade Guidelines

Event Grade	Credit Component
A	All of the following: » The loan falls within the applicable underwriting guidelines without exception or waiver. » The borrower has shown the ability and willingness to repay. » Occupancy status, employment, income and assets are reasonable and supported.
B	All of the following: » The loan does not meet every applicable guideline for the program, but – most of the loan characteristics fall within the guidelines; and – there are documented and significant compensating factors for the exceptions to the guidelines » The borrower has shown the ability and willingness to repay the loan. » Occupancy status, employment, income and assets are reasonable and supported.
C	Any of the following: » The loan does not meet every applicable guideline for the program, and – most of the loan characteristics fall outside the guidelines; or – significant layered risk exists; or – there are weak or no compensating factors for exceptions to the guidelines » The borrower's ability and willingness to repay are questionable. » Occupancy status, employment, income or assets are unreasonable or not supported. » The TPR firm believes there is a material likelihood of fraud.

Event Grade Guidelines

D	» The reviewer did not receive the loan file, or the loan file is incomplete and the information in it is insufficient to perform the basic review.

Event Grade	Property Value Component
A	All of the following: » The value is supported within 10% of the original appraisal amount. » The edifice is completely constructed, and the appraisal is on an "as-is" basis. » The property's condition is at least "average." » The appraisal was conducted using forms approved by Fannie Mae or Freddie Mac (GSEs). » The appraiser was appropriately licensed. » Loans with appraisal waivers cannot be graded A
B	» The same conditions as Event Grade A, except that – the property requires cosmetic or minor repairs that do not affect value or habitability; or – some of the funds were escrowed based on a written agreement to complete improvements to the property – GSE-eligible loans with appraisal waivers, where value is supported within 10% of the stated value
C	Any of the following: » The value cannot be supported within 10% of original appraisal amount. » The edifice is not completely constructed, or the appraisal is not on an "as-is" basis. » The property's condition is less than "average." » The appraiser did not conduct the appraisal using GSE-approved forms. » The appraiser was not appropriately licensed. » There is evidence that the appraiser was not an independent party.
D	» The reviewer did not receive the loan file, or the appraisal or other valuation method is missing from the file; the TPR could not conduct the review.

Event Grade	Regulatory Compliance Component
A	All of the following: » The loan complies with all applicable laws and regulations. » When legally required, a benefit to the borrower exists and is documented. » The note, mortgage and other legal documents accurately reflect the agreed-upon loan terms and have been executed by all of the mortgage loan applicants. » All funds have been disbursed in full. » The originator has verified and clearly documented borrower's ability to repay. »
B	» The loan complies with all applicable TILA regulations; and » When legally required, a benefit to the borrower exists and is documented; and either » A violation of law or regulation exists, but does not and will not have any adverse impact on the loan or its holders; or » The loan is missing a required disclosure, but this does not and will not have any adverse impact on the loan or its holders.
C	Any of the following: » The loan terms violate one or more applicable laws and regulations, which could adversely impact the loan or its holders. » The loan is missing required disclosures, which could adversely impact the loan or its holders. » A benefit to the borrower cannot be discerned. » The note, mortgage, and other legal documents do not accurately reflect the agreed-upon loan terms. » Not all of the applicants have signed the note although the loan was approved based on the income and assets of all the applicants. » Legal documents have been signed in the name of a corporation without a personal guarantee. » Funds have not been disbursed, and the file does not include a written explanation that is consistent with prudent origination practices. » The mortgage insurance certificate is missing. » Compliance with ATR rules is not established or documented in a manner that is consistent with prudent origination practices.

Event Grade Guidelines	
D	» The loan file or legal documents were not delivered to the reviewer for basic review.

Source: Moody's Investors Service

Guidelines for Assessing the TPR Firm

The independence, competency and quality of the TPR firm will determine the level to which we can rely on the TPR results as a part of its credit analysis.

General Guidelines for Assessing an Independent Third-Party Review Provider

1. The TPR firm can attest that it has no affiliation with or conflict of interest with regard to the parties to the securitization.
2. Individual loan-level reviewers have an appropriate level of experience based on the complexity of the product being reviewed. Underwriters reviewing low-risk products should have a minimum of one year's underwriting experience in the primary residential mortgage market or at least two years' loan review experience in the secondary market.
3. Project/deal managers have three or more years' underwriting experience in primary residential mortgage market or loan review experience in the secondary market.
4. Experienced and reputable legal counsel is on staff or retained for interpretation of local, state and federal regulatory compliance statutes.
5. The TPR has obtained periodic audits from outside counsel that confirm the sufficiency of the TPR firm's compliance software.
6. The TPR firm has an Errors & Omissions policy in an amount of no less than $500k for each occurrence.
7. The TPR firm retains a Directors & Officers policy in an amount of no less than $1 million for each occurrence.
8. The TPR firm has written policies and procedures for staff training.
9. The TPR tests its staff -- both contractors and full-time employees -- every six months to assess and assure high proficiency in TPRs.
10. The TPR firm has a quality control department that ensures consistent loan grading.
11. The TPR firm has sufficient system capacity and processes to ensure accurate loan-level data capture.
12. The TPR firm's policies, procedures and system capacity ensure the security of sensitive data.
13. The TPR firm's systems can generate the electronic reports that we request.
14. The TPR firm has robust, standard written procedures for the review and re-verification of income, employment, occupancy, assets and liabilities.
15. The TPR firm has internal expertise or contracts with qualified external parties to review and re-verify property value.
16. The TPR firm has the expertise to evaluate secondary valuation providers and use property valuation products appropriately.
17. The TPR firm uses commercially accepted anti-fraud software to assist in identifying fraud or has robust procedures to check for fraud.

Appendix 3: Evaluating R&Ws for US RMBS

An effective Representations and Warranties (R&W) framework protects a transaction against the risk of loss from fraudulent or defective loans and provides transparency by giving investors access to robust and reliable data. We assess R&W frameworks both on their individual merits and in the context of the particular transaction. We assess R&W frameworks based on three factors: (a) the strength of the R&Ws; (b) the effectiveness of the enforcement mechanisms; and (c) the creditworthiness of the R&W provider.

Strength of R&Ws

The strength of different transactions' R&Ws will vary depending on three main factors:

» *Scope of the R&Ws* – We would view as credit-neutral an R&W set that substantially conforms to the baseline set that we present below. We would view as credit-negative R&Ws that lack key elements of the baseline set, unless mitigated by a third-party pre-securitization review or through other mechanisms. We analyze the impact of substantial deviations of issuer-proposed R&Ws from our baseline R&Ws case by case. We recognize that a transaction doesn't always include every element of the baseline R&Ws and this may not necessarily be credit negative. For example, the omission may be minor in terms of risk exposure in relation to the level of credit enhancement or may be mitigated through other features, such as the TPR review, the originator assessment or credit enhancement.

» *Knowledge qualifiers* – The presence of knowledge qualifiers such as "To the best of the R&W provider's knowledge…" in any R&Ws materially diminishes the credit protection that they provide, unless, for purposes of determining a breach of such R&W, the transaction documents specify that the knowledge qualifier is disregarded.

» *Sunsets* – We evaluate the extent to which the R&Ws expire, or "sunset," during the life of the transaction. The impact of the sunset provisions depends on which R&W provisions expire, the length of time before they expire, any performance criteria that, if met, would lengthen the time to expiration, and the extent to which a pre-securitization TPR, custodial review or other transaction features have already checked the substance of the R&Ws that will expire.

Enforcement Mechanisms

The effectiveness of the enforcement of the R&Ws depends on the particular mechanism the transaction uses to discover and report R&W breaches (such as post-closing forensic TPRs on severely delinquent loans), the likelihood that it will discover R&W breaches early enough, the clarity and comprehensiveness of the review scope, the independence of the breach reviewer, the cost of the review process, the materiality standard for requiring repurchases, the availability of and access to documents needed to check for breaches, and an effective conflict resolution mechanism, and the reporting of breaches and their resolutions. We review, case by case, the overall effectiveness of a transaction's enforcement mechanism in the context of the specific transaction.

Creditworthiness of R&W Provider

The creditworthiness of the R&W provider determines the probability that the R&W provider will be available and have the financial strength to repurchase defective loans upon identifying a breach. An investment-grade-rated R&W provider lends substantial strength to its R&Ws. For entities whose creditworthiness is in the Ba or B range, we look for other offsetting factors, such as a strong alignment of interest and enforcement mechanisms, to derive the same level of protection. We analyze the impact of less creditworthy R&W providers case by case, in conjunction with other aspects of the transaction.

R&W Analytical Impact

If a transaction's R&W framework has weaknesses, we look to factors that would suggest high data quality, such as credit risk retention, a comprehensive independent third-party review, and a strong originator assessment. RMBS transactions whose R&W frameworks have significant and unmitigated weaknesses will likely need more credit enhancement to achieve a particular rating. Without it, we would assign a lower rating or decline to rate the transaction.

To quantify the impact of R&W weaknesses on credit enhancement, we:

- » adjust probability of default or loss given default on particular loans or portfolio; for example, if the transaction is missing a R&W that there are no violations of environmental laws on the properties, we might quantify uncertainty by increasing the loss given default on a portion of the portfolio, or
- » adjust credit enhancement using other data points that proxy losses owing to R&W weaknesses; for example, we might look at the payouts from settlements in R&W litigations that arose out of the crisis as a guide for how much credit enhancement we should add to account for significant R&W weaknesses, or
- » otherwise qualitatively adjust credit enhancement.

We describe the substantive elements of what we consider baseline R&Ws below. The specific form or wording of a particular transaction's R&Ws can vary, however. Furthermore, we recognize that the R&Ws in a particular transaction need not include all elements of the below R&Ws to be credit neutral. The R&Ws mentioned below are relevant for RMBS transactions backed by newly originated residential mortgage loans. For RMBS transactions backed by seasoned, non-performing or re-performing mortgage loans some R&Ws might not be as relevant. For example, for seasoned loans the R&Ws related to borrower's income, employment and assets and underwriting would be less relevant because data related to actual performance history will be a better indication of future performance than the adherence to the original underwriting guidelines.

1. Property Valuation
   - » Each mortgage loan with a written appraisal, as indicated on the mortgage loan schedule, contains a written appraisal prepared by an appraiser licensed or certified by the applicable governmental body in which the mortgaged property is located and in accordance with the requirements of Title XI of the Financial Institutions Reform Recovery and Enforcement Act of 1989 (FIRREA).
   - » The written appraisal, in form and substance, meets (a) customary Fannie Mae or Freddie Mac standards for mortgage loans of the same type as such mortgage loans and (b) USPAP (Uniform Standards of Professional Appraisal Practice) standards, and satisfies applicable legal and regulatory requirements.
   - » The appraisal was made and signed prior to the final approval of the mortgage loan application.
   - » The person performing the property valuation (including an appraiser) received no benefit from, and his or her compensation or flow of business from the loan originator was not affected by, the approval or disapproval of the mortgage loan.
   - » The selection of the person performing the property valuation was made independently of the broker (where applicable) and the originator's loan sales and loan production personnel. The selection of the appraiser met Fannie Mae's and Freddie Mac's criteria for selecting an independent appraiser.
2. Income/Employment/Assets
   - » The originator verified the borrower's income, employment and any assets in accordance with its written underwriting guidelines.
   - » The originator employed procedures designed to reasonably authenticate the documentation supporting such income, employment and assets.
   - » Where commercially reasonable, the originator used public and/or commercially available information to test the reasonableness of the income.
   - » The originator reviewed other attributes of the borrower, such as assets, disposable income, reserves and credit history, and reasonably determined that these attributes support the income on which approval of the loan was based.
3. Occupancy
   - » The originator has given due consideration to factors such as other real estate the borrower owns, commuting distance to work, appraiser comments and notes, the location of the property and any

difference between the mailing address in the servicing system and the actual property address to evaluate whether the occupancy status of the property as represented by the borrower is reasonable.

4. Early Payment Default Repurchase

   » With respect to any mortgage loan originated no more than 90 days prior to the securitization closing date, the originator shall promptly repurchase such mortgage loan that becomes 30 days or more delinquent within the first three months following the origination date, unless, based on information provided by the servicer, the default was a result of a servicing issue that has been corrected within 90 days of the delinquency.

5. Data

   » The information on the mortgage loan schedule relating to the terms of the mortgage loan and the mortgage note[23] is true and correct in all material respects.

   » The information on the mortgage loan schedule is consistent with the contents of the originator's records and the underlying loan files.

   » Any seller's or builder's concession has been subtracted from the sales price of the mortgaged property for purposes of determining the LTV (loan to value) and CLTV (combined LTV).

   » No FICO score on the mortgage loan schedule was more than four months old when the securitization closed.

   » No appraisal or other property valuation listed on the mortgage loan schedule was more than three months old at loan closing.

   » The mortgage loan schedule correctly indicates whether the loan is a Qualified Mortgage (QM) within the meaning of the Truth in Lending Act, and if so the type of QM.

6. Fraud

   » No fraud, material misrepresentation, material error or omission or negligence has taken place on the part of the originator or any other party in connection with the origination of the mortgage loan, the determination of the value of the mortgaged property, in the application of any insurance in relation to such mortgage loan or in the sale or servicing of the mortgage loan.

7. Underwriting

   » Each mortgage loan was either (a) underwritten substantially conforming to the originator's underwriting guidelines in effect at the time of origination and if underwriting discretion was exercised, it was permitted by the guidelines and was reasonable or (b) if not underwritten in substantial conformance to the originator's underwriting guidelines, has reasonable and documented compensating factors.

8. Mortgage Insurance

   » Any mortgage loan with mortgage insurance has the benefit of a valid, binding and enforceable primary mortgage insurance policy issued by a primary mortgage insurer acceptable to Fannie Mae and Freddie Mac.

   » The form and substance of the mortgage insurance policy conforms substantially to primary mortgage insurance policies acceptable to Fannie Mae and Freddie Mac.

9. Insurance Coverage Not Impaired

   » With respect to any insurance policy (including hazard, title or mortgage insurance) covering a mortgage loan and the mortgaged property, neither (a) the originator nor (b) any prior holder has engaged in any act or omission that would impair the coverage of the policy, the benefits of the

[23] Such information would include the identity of the originator, lien position, loan type, loan amount, interest rate, term to maturity, first payment date, interest rate caps and floors, prepayment penalty terms, property location and other key terms listed in the mortgage or the mortgage note.

endorsement or the validity and binding effect of either, including no unlawful fee, commission, kickback or other unlawful compensation or value of any kind that has been or will be received, retained or realized by any attorney, firm or other person or entity, and no such unlawful items have been received, retained or realized by the originator.

10. Regulatory Compliance

    » At the time of origination and, if subsequently modified, the effective date of the modification, each mortgage loan complied with all then-applicable law including federal, state and local laws, rules and regulations including, without limitation, usury, truth-in-lending, real estate settlement procedures, consumer credit protection, equal credit opportunity, high-cost, ability-to-repay, anti-predatory or abusive lending laws, or such noncompliance was cured subsequent to origination, as permitted by and in compliance with applicable law. The servicing of each mortgage loan prior to the closing date complied with all then-applicable law including federal, state and local laws, rules and regulations.[24]

11. Borrower

    » Each borrower is a natural person.

    » As of origination, each borrower was legally permitted to reside in the United States.

    » No borrower is a debtor in any state or federal bankruptcy or insolvency proceeding.

    » No borrower had a prior bankruptcy in the last seven years.[25]

    » No borrower previously owned a property in the last seven years that was the subject of a foreclosure while the borrower was the owner of record.

12. Source of Loan Payments

    » No loan payment has been escrowed as part of the loan proceeds on behalf of the borrower.

    » No payments due and payable under the terms of the note and mortgage or deed of trust, except for seller's or builder's concessions or temporary buydown funds, have been paid by any person who was involved in, or benefited from, the sale or purchase of the mortgaged property or the origination, refinancing, sale, purchase or servicing of the mortgage loan other than the borrower.

13. Down Payment

    » For each mortgage loan whose proceeds were used to purchase the related mortgaged property, the borrower paid at least the lesser of (a) 100% minus the CLTV of the mortgage loan or (b) 5% of the purchase price, with his or her own funds.

14. No Prior Liens

    » Immediately prior to the transfer and assignment of the mortgage loan to the securitization trust, the seller was the sole owner and holder of the mortgage loan free and clear of any and all liens, pledges, charges or security interests of any nature.

    » The seller has good and marketable title and has the full right and authority to sell and assign the mortgage loan.

15. Enforceability and Priority of Lien

    » The mortgage is a valid, subsisting and enforceable [first/second] lien on the property.

[24] We would view as credit neutral a provision that specifies that a breach of this representation and warranty occurs when a loan fails to comply with any particular federal, state or local law or regulation which could: (a) result in assignee liability for monetary damages or penalties for the purchaser of such mortgage loan, and in turn, in the case of a securitization, the investors who purchased the securities issued by such trust whose cash flow would be negatively impacted by the payment of such monetary damages or penalties; (b) make the debt unenforceable; (c) operate to invalidate the lien securing the mortgage loan; or (d) cause a loss or increase the severity of loss on the mortgage loan.

[25] Some portfolios could contain loans to borrowers who have a history of foreclosure or bankruptcy. However, in general, to be credit neutral, the expectation is that the criteria in the R&W will be met.

- » The mortgaged property is free and clear of all encumbrances and liens having priority over the lien of the mortgage except for (a) liens for real estate taxes and special assessments not yet due and payable; (b) covenants, conditions and restrictions, rights of way, easements and other matters of public record as of the date of recording of such mortgage acceptable to mortgage lending institutions in the area in which the mortgaged property is located or specifically referred to in the appraisal performed in connection with the origination of the related mortgage loan; (c) any security agreement, chattel mortgage or equivalent document related to, and delivered to the custodian; and (d) such other matters to which like properties are commonly subject; provided that none of the items listed in (a) through (b) individually or in aggregate materially interferes with the benefits of the security the mortgage is intended to provide.
- » The mortgage establishes in the seller a valid and subsisting [first/second] lien on the property and the seller has full right to sell and assign the loan to the securitization trust.

16. Complete Mortgage Files
    - » All of the required loan documents have been delivered to the custodian in accordance with the governing document.
17. No Modifications
    - » Unless otherwise noted on the mortgage loan schedule, none of the mortgage loans have been modified in any material respect. If a mortgage loan has been modified, the modified terms are reflected on the mortgage loan schedule.
    - » None of the mortgage loans have been satisfied, canceled or subordinated in whole or in part.
    - » The mortgaged property collateralizing the mortgage loan has not been released in whole or in part from the lien of the mortgage.
18. Taxes Paid
    - » All taxes, governmental assessments, insurance premiums, and water, sewer and municipal charges, which had previously become due and owing have been paid, or an escrow of funds has been established, to the extent permitted by law, in an amount sufficient to pay for every such item that remains unpaid.
19. No Damage/Condemnation
    - » The mortgaged property has no damage that adversely affects the value of the mortgaged property as security for the mortgage loan or the use for which the premises were intended.
    - » There is no proceeding pending or, to the originator's knowledge, threatened for the total or partial condemnation of the mortgaged property.
20. No Mechanics Liens
    - » The mortgaged property is free and clear of all mechanics' and materialmen's liens or other similar liens.
21. Fee Simple Estate/No Encroachments/Compliance with Zoning
    - » With respect to each mortgage loan (other than a mortgage loan secured by co-op shares or residential long-term leases), (i) the mortgaged property consists of a fee simple estate in real property, (ii) all of the improvements which are included for the purpose of determining the appraised value of the mortgaged property lie wholly within the boundaries and building restriction lines of such property and no improvements on adjoining properties encroach upon the mortgaged property (unless insured against under the related title insurance policy) and (iii) the mortgaged property and all improvements thereon comply with all requirements of any applicable zoning and subdivision laws and ordinances.
22. Leases
    - » The mortgaged property is either a fee simple estate or a long-term residential lease.

- If the mortgage loan is secured by a long-term residential lease
  - a) the terms of the lease expressly permit the mortgaging of the leasehold estate, the assignment of the lease without the lessor's consent (or the lessor's consent has been obtained and is in the mortgage file) and the acquisition by the holder of the mortgage of the rights of the lessee upon foreclosure or assignment in lieu of foreclosure or provide the holder of the mortgage with substantially similar protection
  - b) the terms of the lease do not
    - i. allow the termination thereof upon the lessee's default without the holder of the mortgage being entitled to receive written notice of, and opportunity to cure, such default or
    - ii. prohibit the holder of the mortgage from being insured under the hazard insurance policy on the mortgaged property
  - c) the original term of such lease is no less than 15 years long
  - d) the term of such lease does not terminate earlier than five years after the maturity date of the mortgage note
  - e) the mortgaged property is in a jurisdiction in which the use of leasehold estates for residential properties is an accepted practice

23. Legally Occupied
    - All inspections, licenses and certificates required with respect to all occupied portions of the mortgaged property and, with respect to the use and occupancy of the same, including, but not limited to, certificates of occupancy and fire underwriting have been made or obtained from the appropriate authorities.
24. Mortgage Loan Legal and Binding
    - The mortgage note, the related mortgage and other related agreements are genuine, and each is the legal, valid and binding obligation of the maker thereof, enforceable in accordance with its terms, unless enforcement is limited by bankruptcy, insolvency, reorganization or other similar laws affecting the enforcement of creditors' rights generally and by general equity principles (regardless of whether such enforcement is considered in a proceeding in equity or at law).
    - All parties had the legal capacity to execute the documents.
    - The documents have been duly and properly executed.
25. Proceeds Disbursed in Full/Recording Fees Paid
    - The proceeds of the mortgage loan have been fully disbursed, there is no requirement for future advances thereunder and any and all requirements as to completion of any on-site or off-site improvements and as to disbursements of any escrow funds therefore have been complied with (except for escrow funds (i) for exterior items which could not be completed due to weather, (ii) for de minimis cosmetic or other repairs that (a) do not affect the safety, soundness or structural integrity of the property or adversely affect the appraised value of the property, (b) could not be completed prior to the mortgage loan closing date, and (c) must be completed within the time frame specified in the applicable underwriting guidelines (it being understood that an indeterminate completion date shall not be acceptable for purposes of this representation and warranty), and (iii) for the completion of swimming pools scheduled to be completed within 12 months following the closing date, in each case in accordance with the originator's underwriting guidelines; and all costs, fees and expenses incurred in making, closing or recording the mortgage loan have been paid, except recording fees with respect to mortgages not recorded as of the closing date.
    - Existence of Title Insurance

- » The mortgage loan is covered by an American Land Title Association mortgagee title insurance policy or other generally acceptable form of policy or insurance acceptable to Fannie Mae or Freddie Mac, issued by a title insurer acceptable to Fannie Mae or Freddie Mac insuring the originator, its successors and assigns, as to the [first] [second] priority lien of the mortgage in the original principal amount of the mortgage loan.
- » The assignment to the securitization trust of such mortgagee title insurance policy does not require the consent of or notification to the insurer that has not been obtained.
- » The mortgagee title insurance policy is in full force and effect.
- » No claims have been made under the mortgagee title insurance policy.
- » No prior holder of the related mortgage has done, by act or omission, anything that could impair the coverage of such mortgagee title insurance policy.

26. Hazard Insurance
    - » The mortgaged property is insured by an insurer acceptable to Fannie Mae or Freddie Mac against loss by fire and those hazards covered by a standard extended coverage endorsement.
    - » The amount of coverage is no less than the lesser of (a) 100% of the insurable value of the mortgaged property or (b) the outstanding principal balance of the mortgage loan, but in no event less than the minimum amount necessary to fully compensate for any damage or loss on a replacement cost basis.
    - » If the mortgaged property is a condominium unit, it is included under the coverage afforded by a blanket policy for the project.
    - » If, upon origination of the mortgage loan, the mortgaged property was in an area that the Federal Emergency Management Agency identified in the Federal Register as being subject to special flood hazards, a flood insurance policy meeting the requirements of the current guidelines of the Federal Insurance Administration is in effect with a generally acceptable insurance carrier.
    - » If applicable, the amount of flood hazard coverage is no less than the least of (a) the outstanding principal balance of the mortgage loan, (b) the full insurable value of the mortgaged property and (c) the maximum amount of insurance that was available under the National Flood Insurance Act of 1968, as amended.
    - » Each mortgage obligates the mortgagor to maintain all such insurance at the mortgagor's cost and expense.
27. No Default
    - » There is no default, breach, violation or event of acceleration existing under the mortgage or the related mortgage note and no event that, with the passage of time or with notice and the expiration of any grace or cure period, would constitute a default, breach, violation or event of acceleration.
    - » No default breach, violation or event of acceleration has been waived.
    - » No foreclosure action is currently threatened or has been commenced with respect to the mortgage loan.
28. No Rescission
    - » No mortgage note or mortgage is subject to any right of rescission, set-off, counterclaim or defense.
    - » None of the terms will render the mortgage note or mortgage unenforceable or subject it to any right of rescission, set-off, counterclaim or defense.
    - » No such right of rescission, set-off, counterclaim or defense has been asserted.
29. Enforceable Right of Foreclosure

- » Each mortgage contains customary and enforceable provisions such as to render the rights and remedies of the holder thereof adequate for the realization against the mortgaged property of the benefits of the security.
- » There is no homestead or other exemption available to the mortgagor that would interfere with the right of foreclosure.

30. Mortgaged Property is 1-4 Family

- » Each mortgaged property is located in the U.S. or a territory of the U.S. and consists of a residential structure. Such structure constitutes a 1-4 unit property which may include, but is not limited to, a single-family or two- to four-family dwelling, townhouse, condominium unit or unit in a planned unit development or, in the case of mortgage loans secured by co-op shares, leases or occupancy agreements, but will not consist of any undeveloped land, multifamily property of five or more family residential dwelling units or commercial property or any other property type not permitted under the originator's underwriting guidelines.

31. Mortgage Loan Qualifies for REMIC

- » For federal tax purposes, each mortgage loan is a "qualified mortgage" within the meaning of Section 860G(a)(3) of the Internal Revenue Code of 1986, as amended.

32. Lost Note Affidavit[26]

- » With respect to each mortgage where a lost note affidavit has been delivered to the custodian in place of the related mortgage note, the related mortgage note is no longer in existence or unable to be found after diligent search. If such mortgage loan is subsequently in default, the enforcement of such mortgage loan will not be adversely affected by the absence of the original mortgage note whether or not found.

33. Doing Business

- » All parties that have had any interest in the mortgage loan, whether as mortgagee, assignee, pledgee or otherwise, are (or, during the period in which they held and disposed of such interest, were) in compliance with all applicable licensing requirements of the laws of the state in which the related mortgaged property is located.

34. Environmental Laws

- » As of the origination of the mortgage loan, the mortgaged property was in material compliance with all applicable environmental laws pertaining to environmental hazards including, without limitation, asbestos.

35. Loans Current/Prior Delinquencies

- » Unless noted on the mortgage loan schedule, all payments required up to the due date immediately preceding the cut-off date for the mortgage loan under the terms of the related mortgage note have been made and no mortgage loan had more than one delinquency in the 12 months preceding the cut-off date.

36. Ability to Repay Rules

- » Each Mortgage Loan satisfies the "ability-to-repay" rules codified at 12 C.F.R. § 1026 under the Truth in Lending Act (Regulation Z), including, without limitation, the provisions of Regulation Z set forth in 12 C.F.R. § 1026.43(c).
- » The mortgage loan schedule accurately identifies the category of the mortgage loan under the ability to repay rules.[27]

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[26] If there are any missing original mortgage notes, lost note affidavits should be delivered, and this R&W should be included. However, we expect that most transactions will close having all of the original notes. In the event that more than a handful of notes are missing, we would likely increase credit enhancement to account for additional risk.

[27] The R&W would include the appropriate statutory references for the various categories.

  - All necessary evidence to demonstrate compliance with 12 C.F.R. Part 1026.43(e), for qualified mortgages, and 12 C.F.R. Part 1026.43(c), as applicable, is included in the mortgage file.

37. No High-Cost Loans

    - Without regard to any exemption due to federal preemption which is available to the originator or its assignees no mortgage loan is a "high-cost" loan, a "covered" loan, a HOEPA loan or any other similarly designated loan as defined under any state, local, or federal law, or subject to any other anti-predatory or abusive lending laws.

Appendix 4: Originator Assessments for Originators of Asset-Backed Securities

Executive Summary

This appendix describes our global approach to assessing the quality of origination in asset-backed securities (ABS), and how we incorporate these assessments in our credit analysis. ABS includes transactions such as those backed by auto loans and leases, consumer loans, loans to SMEs and leases.[28] The originator assessments are qualitative analyses that focus on the potential effects of an originator's policies and practices on the performance of a loan pool, separate from the effects of other factors such as the underlying credit quality of the loans, the macroeconomic environment and the capabilities of the servicer.

While our approach to originator assessment is generally consistent globally, in certain ABS transactions the originator assessment may be formalized into a score, which is used to compare originators of the same type of products across various markets.[29] This is typically the case in EMEA[30] asset-backed transactions backed by auto,[31] consumer loans,[32] SME as well as lease receivables.

An originator assessment may lead to an adjustment in our assumptions regarding the future performance of the assets. It can have a positive, negative or neutral effect on the level of credit enhancement that we deem to be consistent with a particular rating level. Furthermore, we may qualitatively incorporate in our analysis any weakness in one or more components of an originator assessment. As a result, we may arrive at a higher credit enhancement for a given target rating or to a lower assigned rating for a given enhancement level compared with what the quantitative analysis would suggest. Weak assessments or significant concerns in a particular aspect of the originator analysis may also impact the maximum achievable rating on a transaction.

Our originator assessment analysis is articulated in two broad categories:

1. Originator's ability: we assess the ability of the originator. In analyzing an originator's capabilities, we may examine (a) loan performance (b) business strategy and underwriting practices, (c) quality control and auditing and in some markets (d) technology.

2. Originator's stability: we assess the likelihood that the originator's financial strength, governance and controls may affect its underwriting standards, ability to repurchase loans that do not comply with the transaction's representations and warranties, or ability to continue originating receivables of a certain quality in revolving transactions. In analyzing the stability of an originator, we may examine (a) the originator's financial strength (b) management strength, and (c) governance and regulatory oversight.

Certain elements may provide confidence in the integrity of the origination process. These elements include:

- originators that are large financial institutions subject to strong regulatory oversight or corporates subject to strong third-party oversight
- originators with strong corporate governance and large platforms that have significant experience in the business
- originators with a long track record of originating receivables with stable performance

[28] For more information, see also our methodologies. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.
[29] If an originator is active in several product types (e.g., equipment leases and consumer finance), we may derive more than one OA score per originator.
[30] When deriving a score, we typically assess the originator under each of the elements on a five-point scale from strong to weak. The overall OA score is calculated as a weighted average of the score derived for each element. The weights are asset-specific and may also be amended by a rating committee on a case-by-case basis to reflect particular areas of strength or concern.
[31] Auto receivables may include either loan or lease financing mainly extended to individuals.
[32] Consumer loans refers to unsecured lending products.

» a securitized pool that includes seasoned loans with demonstrated performance

On the other hand, in cases in which the originator is new to the business, financially weak, without strong corporate governance or strong regulatory or third-party oversight, our originator assessment will place more focus on certain factors such as the underwriting process and the quality control systems in place.

Given the wide variety of assets that can back an ABS, the broad themes we describe for each factor are general and may not be applicable in the same way in different ABS.

Originator Ability

Loan Performance

We review the extent to which the originator's previously originated loans have underperformed, met or exceeded the performance we would expect based on the loan characteristics and the economic environment under which the performance occurred.

In particular, variations in early-stage delinquencies can indicate volatility in origination policies and practices, which can increase the uncertainty – and risk -- inherent in a newly originated loan pool. We compare data from the originator with data of originators of similar types of loans, when such information is available.

An originator with a long track record of originating loans with consistent performance may provide confidence in the integrity of the origination process. On the other hand, we will focus more closely on the origination ability of a new originator that has no or relatively little demonstrated ability to originate loans of consistent quality.

Business Strategy and Underwriting Practices

We consider the business strategy of the originator and its sales and marketing practices. We also analyze the ability of the originator to accurately assess the credit quality of the borrower through its underwriting process. We may consider factors such as whether there are:

» thorough and unambiguous written underwriting guidelines with limited exceptions

» exceptions to guidelines based only on clear, compensating factors and well-documented approval processes

» product types that are standardized and easy to understand, with limited ability for underwriters to customize the product

» extensive processes for assessing the borrower's willingness and ability to repay the loan

» reliable valuation processes around the assets securing the loans, when relevant

» effective verification and review of the reasonableness of key information stated on the loan application prior to closing

» fraud prevention measures

» underwriting functions separate and independent from the sales group

» underwriter compensation plans based on credit quality and performance, not volume

» controls in place to manage the quality of loan origination from intermediaries, when relevant

Quality Control, Auditing, and Technology

For originators not subject to regulatory oversight, and/or for which we may have specific concerns, we may request additional information to evaluate the completeness and results of both internal quality control systems and internal and external audits. We may review, among other things: (1) the process for reporting internal inspection findings and recommendations, (2) the process for monitoring whether the entity implements recommendations, (3) the frequency of reviews, (4) the team structure and (5) third-party checks that were performed on the securitized portfolio. We may also assess an entity's technological capabilities by reviewing the systems used to control underwriting processes and track its portfolio risk profile.

Originator Stability

Our originator assessment may consider the originator's current stability, and also the likelihood that the originator's stability may change in the future. Originator stability is more critical in transactions in which we rely on the originator's ability to repurchase any loans that were originated in breach of the transaction's representations and warranties. Originator stability is also important for revolving transactions, which continue to add new loans after the start of the transaction, because stability indicates the ability and resources of the originator to continue to originate loans in a consistent manner without the pressure of potential financial or management distress, even if the originator faces new competitive challenges.

In general, a stable originator is less likely to have made recent, drastic changes to its origination practices that are unreported and undetected at the time a transaction is launched, but that could later affect the quality of the originated loans and their performance.

Some of the aspects of originator stability we consider may include financial stability, management strength, and governance and regulatory oversight.

Financial Stability

An originator's stability depends, in part, on whether the originator has the financial resources to compete and adapt to changes in the market, as well as the stability of those resources. Financial stability tends to be a bigger risk factor for smaller companies.

For originators we rate, we primarily rely on the originator's rating as an indicator of the financial strength and stability of the company. For originators we do not rate, we may use credit estimates when available, or assess the financial stability of the entity by reviewing factors that may include the originator's size, funding sources, profitability, and capital adequacy.

For both rated and non-rated originators, we also may consider whether the originator has had any recent financial deterioration, which could result in the originator taking bigger risks in an attempt to reverse the decline. Strong originators generally have stable ratings and finances. As a result, these originators have little incentive to change their business practices abruptly.

Management Strength

For smaller originators with weaker financial stability and weak governance, we may focus on management strength, including management's length of experience in the origination business, tenure at the originator, and whether there is an over-reliance on a key person or persons for the success of the business.

Governance and Regulatory Oversight

An originator's stability depends, in part, on the originator being able to comply continually with all applicable laws and regulations, particularly those governing the origination of loans.

As part of our assessment of originator stability, we evaluate the oversight that any relevant regulatory bodies provide (which depends, typically, on whether the originator is a bank or some other highly regulated financial institution, or as an unregulated entity) and the extent to which the originator's policies and technology systems are structured to ensure compliance with all applicable laws and regulations. Larger originators generally are better able to devote adequate resources to developing and enforcing corporate governance standards than are smaller originators. Originators with strong governance and regulatory oversight typically:

» are public corporations, which typically have more disclosure requirements than private companies or sole proprietorships

» have no significant or unmitigated past or pending litigation, or regulatory actions that would result or have resulted in large settlements

» are regulated entities, such as deposit-taking institutions

Incorporating the Originator Assessment into Our ABS Rating Analysis

The strengths and weaknesses that we identify in our originator assessment may affect the quantitative assumptions on future asset performance (e.g., the expected default and recovery rates and the variability of asset performance) in our ABS analysis. For example when we apply our 'top-down' approach[33] in the analysis of SME/lease transactions, the OA score is typically used in conjunction with available performance data to ultimately translate into an underwriting/origination/performance adjustment (i.e., a notching penalty or uplift, ranging from -1 to +1) applied to the portfolio credit quality. When the asset analysis relies mainly on historical pool performance data covering at least a full economic cycle, such pool performance data may already reflect the impact of the originator quality and therefore we may not need to make any further quantitative adjustments. However, when we assume this is not fully reflected (e.g., change of underwriting process in recent years, historical data provided over a short time period, etc.), we may qualitatively adjust the pool assumptions to incorporate our originator assessment.

Furthermore, we may qualitatively incorporate in our analysis any weakness in one or more components of an originator assessment and may arrive at a higher credit enhancement for a given target rating or to a lower assigned rating for a given enhancement level than what the quantitative analysis would suggest. Weak originator assessment or significant concerns in a particular aspect of the originator assessment may also impact the maximum achievable rating on a transaction.

For transactions in which all of the underlying assets have been originated prior to the time of issuance and the initial rating of the security, subsequent changes in origination will have no effects on the risks of the security.

For transactions that add assets after the original closing date, we usually incorporate in our analysis the eligibility criteria and representations and warranties from the originator that it will originate new loans under similar underwriting practices. However, any material change in the originator's origination and underwriting practices during the revolving period may trigger a review of our originator assessment and may impact our view on the rated security.

[33] For more information, see our methodology that describes our approach to rating SME balance sheet securitizations. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Moody's Related Publications

Cross-sector credit rating methodologies are typically applied in tandem with sector credit rating methodologies, but in certain circumstances may be the basis for assigning credit ratings. A list of sector and cross-sector credit rating methodologies can be found here.

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

For further information, please refer to *Rating Symbols and Definitions*, which is available here.

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