

Moody's

INVESTORS SERVICE

RATING METHODOLOGY

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Analyst Contacts:

NEW YORK +1.212.553.1653

Luisa De Gaetano Polverosi +1.212.553.3847
Associate Managing Director
marialuisa.degaetanopolverosi@moodys.com

Sang Shin +1.212.553.7776
Vice President - Senior Credit Officer/Manager
sang.shin@moodys.com

Karandeep Bains +1.212.553.1441
Vice President - Senior Credit Officer/Manager
karandeep.bains@moodys.com

William Black +1.212.553.4563
Managing Director - Structured Finance
william.black@moodys.com

» contacts continued on the last page

CLIENT SERVICES:

New York: +1.212.553.1653
Tokyo: +81.3.5408.4100
London: +44.20.7772.5454
Hong Kong: +852.3551.3077
Sydney: +612.9270.8100
Singapore: +65.6398.8308

Single-Family Rental Securitizations Methodology

This rating methodology replaces *Moody's Approach to Rating Single-Family Rental Securitizations* published in November 2019. The methodology's title and table of contents have been revised. We have also made limited editorial updates to improve readability, and we have added a footnote for further transparency on our approach to monitoring transactions. The updates do not change the substantive approach of the methodology.

Scope

In this methodology, we explain our approach to assessing credit risks for single-family rental (SFR) securitizations, including quantitative and qualitative factors that are likely to affect rating outcomes in this sector. The underlying loans for these transactions are made to one or more entities that own and lease a portfolio of single-family residential properties. SFR transactions are either single-borrower securitizations, which are backed by one loan to a single borrower, or multi-borrower SFR transactions, which are backed by multiple loans, each to one or more borrowers.

We discuss the asset and liability analysis, including associated modeling, as well as other considerations. We also describe our monitoring approach.

This methodology is no longer in effect. For information on rating methodologies currently in use by Moody's Investors Service, visit www.moodys.com/methodologies

Rating Approach

While this rating methodology is similar for both single and multi-borrower SFR, our approaches for them differ in a few key areas, particularly in assessing the probability of loan default and in assessing the term risk, which is the likelihood that the rental income from the properties will be sufficient to meet the debt service over the loan's term.

In all SFR transactions, we analyze the collateral to assign a probability of default and an eventual recovery value for each loan. In our recovery analysis for all transactions, we model the proceeds we expect to get from a sale of the properties in various stressed house price depreciation scenarios and from the rental income prior to sale. For single-borrower, our stressed probability of default will typically simulate a scenario in which the borrower cannot refinance its loan at maturity and the securitization must sell the properties. For multi-borrower SFRs, we take into account that, even in a distress scenario, not all loans in the pool will default. For a very diversified multi-borrower SFR pool, we conduct loan-level or stratified pool-level analysis to estimate both the probability of default and loss given default.

We also evaluate the quality of property management, the servicers and other third parties, along with the transaction's structural and legal framework. As with all rating methodologies, in applying this methodology, where appropriate, we consider all factors that we deem relevant to our analysis. If actual performance or performance trends are not in line with the assumptions described in this methodology, we may consider or reflect that in our analysis. In addition to these quantitative assessments, our rating committees also consider various qualitative factors in their analysis. As such, the assigned rating may differ from the model output.

Asset-level Analysis and Related Modeling

Collateral Analysis

There are two primary components to our collateral analysis: (1) We assign a cumulative probability of default for the life of each loan (loan default analysis), and (2) we evaluate the expected recovery from the sale of the properties backing each loan in a conditional scenario that the loan defaults.¹

For single-borrower SFR transactions, we typically assess the initial probability of default of the loan at or near 100% for our highest ratings. We use such a conservative stress mainly because, at this time, most SFR operators generally do not have very strong credit profiles, and, despite a wealth of data on liquidation proceeds of distressed sales of single-family houses, the market has not yet experienced an actual refinancing of an SFR loan during a period of economic stress. We may reduce the probability of default for large loans in single-borrower transactions as the market matures, or as SFR operators prove themselves over a transaction seasons.

Furthermore, for single-borrower transactions the loan must pass our term risk analysis under our base case assumptions. This means that the sustainable income generated from the properties must be sufficient to meet the non-balloon payments due during the loan term. In the absence of a large loan passing term risk analysis, we may apply additional qualitative stresses to the transaction.

For multi-borrower transactions, our assessment of probability of default for a given loan depends on the results of our term risk analysis and upon certain attributes of the loan, such as its debt service coverage

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

¹ In some cases, we may show the recovery calculation as Loss Given Default (LGD). LGD in simplified terms is the excess of outstanding loan balance as increased by any expenses that the transaction may incur over the proceeds from recovery from sale of the loan, or the portfolio backing the loan, in a given stress scenario.

ratio (DSCR) and loan-to-value (LTV) ratio. We also consider the loan's amortization profile, its interest rate relative to the prevailing market rate and its amortization term. We also assess the quality of underwriting and underwriting guidelines, as well as the strength of the sponsor and its operational and property management abilities.

In our recovery analysis, we focus on two sources of cash – (1) the proceeds from the securitization trust's potential sale of the properties or the loans, and (2) the rental income from the properties prior to the sale. The collateral for the loan(s) typically consists of a combination of mortgages on and assignment of rents of the underlying properties, personal guarantees from the borrowers' owners, and, if applicable, pledges of the parents' equity in the borrowers. If a loan defaults, the collateral enables the securitization trust to sell the underlying properties by taking ownership of the borrower's equity interest or by foreclosing on the mortgages on the underlying properties and will permit the securitization trust to collect the rental income from the properties prior to sale. For multi-borrower SFR transactions, some loans may not have equity pledges. Alternatively, the securitization trust may be able to sell the loan along with its collateral to an institutional buyer.

Loan Probability of Default Analysis

As a starting point, we conduct term risk analysis in which we evaluate whether the debt can be serviced using economic assumptions that we deem reflective of long-term expectations for the single-family market. We conduct a detailed loan-level term risk analysis for single-borrower SFRs and for concentrated multi-borrower SFRs. For more granular multi-borrower transactions, we use underwriting guidelines as a predictor of term risk analysis.

For single-borrower SFRs, as part of assigning investment-grade ratings, we typically analyze the transaction under scenarios in which refinancing fails and proceeds needed to repay the debt are realized from the recovery on the portfolio, as explained above in the "Collateral Analysis" section.

For multi-borrower SFRs, on the other hand, the probability that all loans in the portfolio will default or fail to refinance decreases with an increase in the number of loans in a portfolio. When evaluating more granular multi-borrower SFR portfolios in our default analysis, we take into account a given loan's DSCR, LTV, amortization profile, whether the interest rate is fixed or floating and the loan term. For concentrated multi-borrower SFR portfolios, we may use in our analysis a combination of both the single-borrower and more granular multi-borrower approaches. More specifically, for a loan in a multi-borrower SFR transaction, our baseline probability of default assumption typically corresponds to a B1 rating at the applicable remaining term to maturity of the loan and is adjusted based on the loan's characteristics and several drivers of default risk. DSCR is the biggest driver of default risk for loans that utilize DSCR as an underwriting attribute. Our actual adjustment for DSCR is pool and underwriting guideline specific. For example, a loan with a low LTV and a Moody's DSCR that exceeds 1.4x, will have an estimated five-year probability of default of approximately 16%-17%. If the DSCR were to drop to 1.0x, holding all other attributes constant, the estimated five-year probability of default will be close to 50%. The next-biggest drivers of default risk are LTV and then amortization profile.

If we are analyzing a granular pool of loans with each loan's performance being linked to one underlying property, we may utilize our approach to rating securities backed by US residential mortgage loans (RMBS)² as a starting point for analyzing such a pool.

² For more information, see our methodology that describes our approach to rating US residential mortgage-backed securities. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

We also take into account the governance mechanism at the loan level. For example, we consider loans with full cash management to be less risky than loans without cash management.

Term Risk Analysis

Net Cash Flow Sustainability (Single-Borrower SFR and Concentrated Multi-Borrower SFR)

To determine the borrower's ability to meet ongoing debt service payments, we analyze the properties securing the loan(s) to derive the portfolio's sustainable net cash flow (NCF), defined as net operating income (NOI) less capital expenditures (capex). For single-family homes, capex – such as replacement of roofing, plumbing, HVAC (heating, ventilation and air conditioning), windows, appliances, exterior paint, and driveway maintenance – is relatively higher when measured as a percentage of a property's value or its rental income than is the case for larger commercial properties.

To derive Moody's net cash flow, we examine key revenue and expense items and compare them to historical and current trends. Where historical data are not available for a nascent SFR portfolio, we review in-place cash flow and the loan underwriter's assumptions. Considering overall industry trends and standards and, where applicable, relative benchmarks based on our experience in commercial multifamily properties, we typically haircut the underwritten NCF. We also differentiate sustainable expense assumptions based on the portfolio's collateral characteristics, such as age of properties, extent of renovations, property management experience and quality, swimming pool maintenance, and unique geographical maintenance issues.

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METHODOLOGY

EXHIBIT 1

Simplified Calculation of Moody's Net Cash Flow for Single-Family Rental Properties (Single-Borrower SFR)**Revenue**

Gross Potential Rent
Less: Vacancy, Rents Above Sustainable Levels, Collection Loss, Concessions to Tenants
Plus: Other Income
Effective Gross Income (EGI)

Operating Expenses

Property Management Fee
Utilities
Property Taxes
Home Owners Association (HOA) Fees
Insurance
Repairs, Maintenance and Tenant Turnover Costs
Leasing & Marketing
Other Operating Expenses
Total Operating Expenses

Capital Expenditures

Replacement Reserves / Capital Items
Total Capital Expenditures

Net Operating Income/ Moody's Net Cash Flow

Effective Gross Income (EGI)
Less: Total Operating Expenses
Net Operating Income (NOI)
Less: Total Capital Expenditures
Moody's Net Cash Flow (NCF)

Source: Moody's Investors Service

MARKET RENT EVALUATION

To derive a net cash flow to service the rated debt, we consider current rental market conditions, the portfolio's recent performance, operating expense ratios, and industry outlooks and forecasts made by market participants. Because SFR securitizations are often backed by collateral across a number of property markets, we typically review revenue and expense data from individual markets in that transaction, as well as at an aggregate level for the transaction.

We qualitatively evaluate the sustainability and trends of prevailing market rent. Within this context, we further consider the adjustments that we apply to current reported rents. Relatively short lease periods for single-family properties allow the property manager to frequently readjust the rental income to the prevailing market conditions. The depth and statistical reliability of the historical rental data inform the haircuts that we embed in our cash flow projections in both expected and stress cases.

VACANCY RATES AND BAD DEBT

Our vacancy assumptions take into account the current and historical vacancy rates for homes in the area, the quality of location and tenants, and the submarket vacancy rate for properties of similar quality. We typically apply higher vacancy rates than those estimated by underwriters to reflect an occupancy level that is sustainable over the long term. Bad debt is uncollected rent, also referred to as collection loss, which effectively increases the vacancy rate that needs to be evaluated. Our vacancy rate assumption also takes into account vacant properties that produce no rent as well as other factors that may lead to a partial loss of rents on occupied properties.

RENT CONCESSIONS

When property markets weaken, landlords frequently offer rent concessions. Concessions often take the form of one to several months of free rent or a reduction in monthly rent over the lease term. Landlords sometimes offer other incentives such as free televisions and gift cards. We account for these concessions as either an increase in the vacancy rate or a rent reduction.

OTHER INCOME

SFR securitizations sometimes yield other forms of income besides rent, such as late fees, termination fees, pet fees and parking fees. We form a reasonable assumption regarding the sustainability of these other income streams. We take into account any available and applicable historical data on these other incomes.

Operating Expenses

Although the operation and management of SFR properties closely resembles multifamily properties that we evaluate in commercial real estate securitizations, the geographic dispersion of individual single-family properties can create higher operating costs. Additionally, because each home has unique features, appliances, and building materials, the renovation, maintenance, and marketing costs can be higher than those of typical multifamily properties. However, issuers with large portfolios of SFR properties may realize some economies of scale, such as in the procurement of blanket insurance policies or bulk purchases of paint and carpeting from national suppliers. Expenses may include:

- » **Property management fees.** We typically estimate property management fees to be approximately 8% to 10% of EGI. We restate the property management fee to market rates for third-party managers. Our estimated property management fee takes also into account the expense that a special servicer, in the event of a loan default, may incur in finding a replacement property manager.
- » **Utilities.** This includes water, sewer, trash, and other utilities expenses not paid by the tenants.
- » **Property taxes.** We generally restate taxes to market levels using median county tax rates to adjust for potential reassessments and tax abatements, or if growth has been otherwise constrained.³
- » **HOA fees.** Owners of condominiums and single-family residences that are part of a homeowner's association typically pay such fees monthly to cover the cost of maintenance of common areas.
- » **Insurance.** We base this on in-place and historical costs and adjust it for market rates where necessary.
- » **Repairs, maintenance and tenant turnover costs.** These costs include interior and exterior repairs and maintenance, along with painting and decorating associated with the preparation of property for a new rental. We may increase repair and maintenance costs for certain geographies, such as cold weather climates that require snow removal or experience other weather-related wear and tear. When applicable, we will also increase our assumption for this expense item to account for the upkeep of swimming pools.

³ For example, in California, Proposition 13 mandates a reassessment only upon sale of the property.

- » **Leasing and marketing.** We typically estimate this based on current and historical expenses, with an expectation that this expense will range from 2% to 4% of EGI, which is commensurate with a fee of half-month's rent and average tenant turnover every 12 to 18 months.
- » **Other operating expenses.** These costs do not fit under other categories (e.g., damage that insurance does not cover: payroll, pool maintenance, etc.).
- » **Replacement reserves and capital items.** We assess the adequacy of the level of replacement reserves, which improve the stability of the cash flow from the collateral backing the loan(s). We assume that the property manager will only maintain the value of the properties in the SFR pool if the transaction structure requires the manager to set aside sufficient reserves to preserve property quality. Further, the risk of loan default increases when cash flow does not cover the cost of capital items. Our analysis might consider replacement reserves in combination with projected maintenance and repair expenses to assess whether the pool has adequate funds to preserve property quality and service the loan debt. We base our assessment of the level of replacement reserves on location, age of the property, and the extent of renovations. In general, lower-value SFR properties tend to have shorter useful lives than higher-value properties. Also, older properties are likely to require greater maintenance expenses. Our assessment of the level of replacement reserves might reflect whether the properties have already undergone significant renovations. However, if information suggests the likelihood of deferred maintenance for which no reserve has been collected, we will adjust our estimates of the proceeds from sales of the underlying properties.

SECTION 8 CONSIDERATIONS

We take into account the portion of the pool whose tenants receive government housing assistance through the Housing Choice Voucher Program under Section 8 of the Housing Act of 1937. Under the Section 8 program, if a property qualifies, the manager may rent it to tenants who receive a portion of their rent from the US federal government. We do not expect to make any adjustments if the portion of the pool consisting of Section 8 tenants is *de minimus*. Where there is a significant portion of properties with Section 8 tenants, we would consider a small reduction to bad debt and vacancy rates as Section 8 properties often have lower tenant defaults and vacancy rates than non-Section 8 properties, given the large portion of rent paid by the US federal government and the high demand for qualifying properties by Section 8-eligible tenants.

We may also consider a small increase in repair and maintenance costs as these costs are often higher for Section 8 properties, due to the strict upkeep standards and the regular inspections that the US Department of Housing and Urban Development requires to enforce those standards.

Additionally, in our recovery value analysis we consider whether a high concentration of Section 8-eligible properties in any particular geographic area might negatively affect property values.

Term Risk Analysis for Granular Multi-Borrower SFR Pools

Our term risk analysis for multi-borrower transactions focuses on the lender's underwriting guidelines. More specifically, we assess how underwriters determine debt service – for example, in DSCR, NOI or other constraints – which we then use to form our basis of term risk analysis for diversified multi-borrower pools. For loans that may not have underwriting guidelines in conformity with DSCR/NOI-based standards, we take into account the debt service in comparison to the income-generating potential of the property. Since we base our analysis on underwriting guidelines, we typically only apply it when a multi-borrower transaction has hundreds of independent loans.

Recovery Value Analysis

Overview

The portion of the properties that we subject to liquidation stress is dependent upon the nature of the portfolio, the sponsor, the target rating and any available performance data on the sector. If the sponsor repurchases any property from the trust, the property will not be subjected to market value risk in a liquidation scenario. In our analysis, as part of assigning high investment-grade ratings we assume that repurchases by sponsor will be minimal. The expected quality of properties' upkeep during the term of the loan(s) also bears on the recovery analysis. The size and expertise of the entity responsible for property management, the level of cash reserves escrowed for property management and property management related covenants in the loan agreement are some of the critical factors that we consider in evaluating the quality of property management.

For single-borrower SFR, although we expect that the borrower will pay off the loan in full through refinancing, we nevertheless evaluate stress scenarios involving the liquidation of the properties. In such a scenario, if the borrower were to default on the loan, the servicer would sell the properties or the loan and distribute the proceeds to security holders according to the priority of payments. Since the repayment of the rated securities depends on the realization of market value for the underlying properties in a stressed environment, we also consider the time available between the maturity on the loan and the maturity on the rated securities (tail period).

We value the portfolio of SFR properties through an asset-level analysis based on various house price stresses rather than as a multiple of the portfolio's rental income. Additionally, should there be a high concentration of properties in a few markets and greater price volatility, we would assume greater house price depreciation when determining recovery values from these properties than we would for diversified pools.

We arrive at a portfolio recovery value by applying an initial Moody's value to each property, stressing those values through various house price stresses, reducing the values further to account for expenses and then increasing the values to account for rental income.

Compared with single-borrower SFR transactions, the loans backing multi-borrower SFR transactions are more likely to default owing to a larger number of borrowers and their potentially weaker credit quality. Multi-borrower SFRs' recovery analysis may provide credit for greater geographic diversity of the collateral backing those transactions. At the same time, we are likely applying higher stresses to the recovery values for multi-borrower SFRs owing to the varying and potentially uncertain property management standards in these transactions.

Initial Moody's Value

We first assign an initial Moody's value to the properties. Moody's value for each property is based on an analysis of: (1) the acquisition cost, partially adjusted for post-acquisition renovations and any house price appreciation/depreciation since the acquisition of the property, and/or (2) the latest available third-party valuation of the property.

We adjust the acquisition cost by adding a fraction of the renovation costs and a fraction of the house price appreciation or the full depreciation to the price that the sponsor paid to acquire the properties. We apply the renovation haircut because improvements do not usually generate a dollar-for-dollar increase in market value. We also consider renovation costs to include actual improvements to the properties, and not "soft costs," such as payment of past taxes and insurance, carrying costs, maintenance expenses and potential administrative overheads.

However, in the event that we expect that adjusted acquisition prices are no longer a good indication of current market value or are not available, our initial Moody's value will be driven by the latest available third-party valuation of the property with some discount depending on the type and quality of the valuation and the house price trends. This may occur if, for example, there is a long time between the acquisition of the property and its inclusion in an SFR securitization. Other examples include a scenario in which the property is acquired as part of a bulk portfolio acquisition, or if only a part of the portfolio's acquisition cost is allocated to the property, especially if only a part the bulk portfolio is securitized.

We adjust the property values based on a qualitative assessment of the valuation provider and the method and scope of valuation used, as well as the potential discount in the sale price that may result from having to sell the property in a distressed market. For example, we consider an appraisal carried out by a licensed appraiser ("full appraisal") to be more reliable than a broker price opinion (BPO). Hence, we typically apply a higher haircut to BPO valuations than full appraisals. In determining an appropriate haircut for valuation, among other factors, we consider the capabilities of the valuation provider, available comparisons between the valuations and recent sales data, and for BPOs, the results of any full appraisals for a sample of BPOs. We review a third party's assessment of the reliability of a sample of such valuations. The third party compares the valuations to the recent history of home sales (see the "Third-Party Reviews" section).

We may also adjust our initial Moody's value based on market indicators. For example, if we expect that market measures indicate that acquisition costs and valuations are rising too rapidly, we may cap our initial Moody's value. When we evaluate this additional dimension, we may include rent-to-price ratios in particular geographic areas, comparisons of subject property value and national indices, and comparisons of debt yield or cap rates from transaction to transaction. We may also make transaction-specific adjustments based on the information presented.

Stressed Value

We apply a house price depreciation (HPD) stress to our initial Moody's value to account for a scenario in which the securitization trust must sell all or a substantial portion of the portfolio in a distressed market.

Our HPD stresses take into account the degree of geographic concentration across the underlying properties. We adjust our house price decline scenarios based on the effective number (measured as the inverse of the Herfindahl-Hirschman Index [HHI]) of metropolitan statistical areas (MSAs) represented in the portfolio. The higher the concentration (or the lower the effective number), the greater the house price decline. High geographic concentrations in a portfolio are the result of a large proportion of properties located in a particular MSA. High geographic concentration exposes a portfolio to the risk of higher losses if economic conditions in a particular MSA deteriorate materially, which effectively increases the probability of high losses. We also subjectively evaluate state concentration. As a starting point for our Aaa HPD stress assumptions, we apply a stress similar to one that would be applicable to a portfolio of US residential mortgage loans under our approach for rating US RMBS.⁴

For SFR transactions, especially those concentrated in a few MSAs, we examine the historical peak-to-trough HPD distribution for those MSAs represented in the pool. We also consider forecasts for future depreciation that may be available.

In general, the less diversified the pool, the greater the HPD stress. We may also adjust the HPD stresses we apply based on a qualitative consideration of transaction parties' expertise and incentive alignment.

⁴ For more information, see our methodology that describes our approach to rating US RMBS. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Expenses

The properties will incur various costs and expenses until they are sold, including property maintenance expenses, liquidation costs and servicer advance reimbursements. Some of these expenses depend on liquidation timelines. We stress liquidation timelines according to geography (judicial/non-judicial foreclosure state) and rating category. In multi-borrower SFR transactions, we may stress expenses on a loan-by-loan basis, given the potentially varying standards of property management ranging from smaller, less experienced to larger, more sophisticated managers.

- » **Property maintenance expenses.** The expenses required to maintain the properties in the pool after loan default include our estimates of real estate taxes, property management fees, HOA fees, insurance and repairs. The amount of these expenses depends on how long the trust owns the properties before it liquidates them. It also depends on the expected upkeep standards. As an example, for multi-borrower SFR transactions where there is no reserving of cash for property maintenance, we may assume a value that is higher than for a transaction where cash is escrowed for property management. We also evaluate the level of cash escrowed for maintenance.
- » **Liquidation costs.** Liquidation expenses include foreclosure costs and other legal costs, servicing fees as a percentage of the loan amount, a special servicer liquidation fee as a percentage of property value, and sales and marketing costs. The longer the foreclosure period, the higher the costs.
- » **Servicer advance reimbursement.** Recouping the servicer's debt service advances on the loan will reduce the amount recovered from liquidating the properties. We generally assign investment-grade ratings only if the servicer must advance principal and interest (to the extent deemed recoverable) on the loan until the special servicer liquidates the properties. We calculate and apply the servicer advance amount and interest on servicer advances in our liquidation analysis. In the absence of servicer advances, we will conduct a liquidity analysis before assigning investment-grade ratings
- » **Liquidation timelines.** The time it takes to liquidate the properties depends on the method the special servicer, on behalf of the trust, uses to take control of the properties: either a foreclosure on the equity pledges or a foreclosure on the mortgages. An equity pledge foreclosure will, in most cases, be quicker than a mortgage foreclosure.
 - **Equity pledge foreclosure:** If the loan defaults, then the special servicer, on behalf of the trust, can take ownership of the borrower special purpose entity (SPE) by foreclosing on the equity pledges. At this point the special servicer directs the borrower to sell the properties. A foreclosure of the equity pledges requires a single action under the Uniform Commercial Code. We assume that an uncontested equity foreclosure will generally take a number of months, while a stressed contested equity foreclosure could take considerably longer.
 - **Mortgage foreclosure:** If the collateral includes mortgages, then the special servicer can foreclose directly on the properties. Unlike the equity pledge foreclosure, which would require a single action, mortgage foreclosures would require multiple actions, at least one for each county that includes properties. By foreclosing on a mortgage, the trust would either become the owner of the properties and then direct the special servicer to sell them or, if someone offers an acceptable cash bid at a foreclosure sale, receive the cash in exchange for the related properties.

Foreclosure timelines depend on whether the county is in a judicial or non-judicial foreclosure state and on the specific procedures and issues in that state or county. Although judicial foreclosures generally take longer than non-judicial foreclosures, the process will likely be expedited compared with traditional residential foreclosures because the actions will apply to a commercial entity rather than individual homeowners attempting to avoid foreclosure. Therefore, the consumer protections that often extend the foreclosure process and increase foreclosure costs will not apply.

- » **Timeline assumptions.** Under our Aaa to A3 stress scenarios, we generally assume the trust will need to pursue the longer and costlier mortgage foreclosure route; under our Baa1 and lower stress scenarios, we generally assume the trust will pursue the quicker equity foreclosure route. However, in an actual default scenario driven by economic outcomes, the servicer will likely pursue equity foreclosure or other loss mitigation strategies, such as a loan sale or workout, to maximize recovery value. Timelines may be shorter for a multi-borrower transaction where a given borrower does not have the size to negotiate with or influence actions of a servicer.

Rental Income Credit

We assume that some of the underlying properties will continue to be rented out while awaiting liquidation and that the rest remain vacant. Our assumptions will vary based on rating category.

Final Recovery Value

The final recovery value will be the stressed value reduced by the expenses and increased by the rental income credit.

The following is a simplified hypothetical example showing the components of the recovery analysis. Haircuts, credits and house price depreciation stresses will depend on the specifics of the transaction, the quality of property management, the geographic distribution of the pool, and the position in the credit cycle.

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EXHIBIT 2

Components of Recovery Calculation

= B / A	Recovery Rate	50.0%
A	Initial Moody's value	\$100.00
B	Stressed recovery value at refinancing	\$50.00
Assuming A = MIN (C, I)		
Initial Moody's Value ¹		\$100.00
C = D + (E * F) + (G * H)	Total cost	\$100.00
D	Acquisition cost	\$80.00
E	Renovation cost	\$20.00
F	Renovation credit	50%
G	House price appreciation (HPA)	\$20.00
H	HPA credit	50%
I = J * (1 - K)	Property valuation	\$102.00
J	Initial third-party property valuation	\$120.00
K	Valuation haircut	15%
B = M + N - R	Stressed Recovery Value at Refinancing	\$50.00
L	House price depreciation stress	40%
M = A * (1 - L)	Stressed house price value	\$60.00
N = O * (1 - P) * Q	Gross revenue	\$18.00
O	Monthly rent	\$1.00
P	Vacancy rate	25%
Q	Rental period (in months)	24
R = (S * X) + Y	Total expenses	\$28.00
S = T + U + V + W	Monthly expenses	\$0.50
T	Real estate taxes	\$0.10
U	Property management fee	\$0.07
V	Capex reserves	\$0.03
W	Other	\$0.30
X	Expense period (in months)	36
Y	Other expenses (servicer advances, foreclosure costs, other one-time expenses)	\$10.00

1. In the event that we expect adjusted acquisition prices are no longer a good indication of current market value, the Moody's value may simply be the latest available third-party valuation of the property.

Note: We may adjust the stressed recovery value upwards for the proportion of the pool that is sold before the maturity date and is therefore not subject to a distressed liquidation.

Source: Moody's Investors Service

Loan Structure

We analyze the following features in loans backing SFR transactions.

Cash Management

Property management agreements will likely require the borrower to deposit all rent and other collections, regardless of form, into a rent deposit account in a lockbox within 24 hours of receipt. The lender will likely have sole control over the loan collection account and the borrower or manager will have no right to withdraw any funds without the lender's consent.

Transaction documents could prescribe that if a trigger is breached – typically with respect to debt yield, DSCRs or LTV ratios – any amounts in the collection account above the annual budget for operating and capital expenses or for extraordinary operating expenses approved by the servicer will be deposited in an account controlled by the trust.

For loans with weaker cash management structures, such as the absence of a lender-controlled deposit account established at closing, we may model a loss of some rent upon loan default. Furthermore, for multi-borrower SFR transactions, where property management is typically less transparent, we generally model the risk of loss of some rent upon default for loans with borrower-affiliated property managers.

Tenant Eligibility

We view objective tenant eligibility criteria as a positive credit measure that will support stable rental cash flow. Loans with weak or no tenant eligibility criteria could lead to tenant credit deterioration and unstable rental cash flow due to increased collection losses.

Amortization

We evaluate a loan's or loans' planned amortization. Amortization offers some key benefits in a transaction including the reduction of leverage (LTV), alignment of interest, and the build-up of credit enhancement. These credit benefits also improve a given loan's refinancing prospects.

Reserves

We expect that the loan agreements will require the borrower to establish reserves for taxes, insurance, home ownership association fees, and replacements. For example, on each payment date the borrower will deposit a specified amount with the lender, such as one-twelfth of the insurance premiums and property taxes that the lender estimates will be due over the next 12 months. However, if the lender determines that the amount in the tax or insurance reserve accounts will not cover the real estate taxes or insurance premiums due, it can increase the monthly deposits required from the borrower by the amount it estimates will make up the deficiency.

Replacement reserves (also called capital expenditure reserves) are intended to cover one-off expenses, such as the replacement of a roof or a heating, ventilation or air conditioning system. They are not intended for day-to-day maintenance or for costs related to tenant turnover such as those of painting interior walls.

Therefore, we consider the level of reserves in the context of the sponsor, underlying borrower(s) and the underlying portfolio. A transaction's dependence on a sponsor/operator is reduced as the level of cash reserves increases.

Longer-Term Loans

Initial single-borrower SFR securitizations were backed by loans with five-year terms. Longer-term loans, such as those with 10-year terms, have both benefits and risks relative to five-year loans. Depending on the position in the real estate and economic cycle, the benefits of a longer-term loan could include a reduction in the refinancing risk in the case of a down cycle during the term, and the release of properties at a premium during an up cycle, providing over-collateralization to the transaction. Another benefit of longer-term loans is that they can build more equity if house prices appreciate on average over the loan term; furthermore, if amortization is a feature of the loan, such conditions could also reduce the principal balance. However, these benefits could be outweighed by the risk of greater uncertainty of house prices, a higher probability of an adverse economic shock, and a higher risk of default for the sponsor. Further, as properties age their condition deteriorates, which could lead to higher expenses associated with the maintenance and repair of the properties. We weigh these benefits and risks when determining advance rates.

Fixed vs. Floating-Rate Loans

Compared with fixed-rate loans, floating-rate loans have additional risk associated with potential interest rate increases during the loan term. In determining the sustainability of rental cash flow in servicing the loan debt, we analyze the breakeven reduction of NCF required to cover debt service.

Interest rate caps during the loan term help offset floating-rate risk, but do not completely eliminate it. Our assessment of interest rate caps takes into account that interest rate caps covering the tail period post-maturity are not common; as such, we vary our interest rate assumption during the recovery period upon liquidation of the properties. Also, the counterparty risk of the cap provider affects the strength of the cap.⁵

HOA Super Liens

We expect that transactions will have provisions to monitor the payment of HOA and condominium association fees so that lien foreclosures for these fees do not impair the transaction's mortgage lien on the related properties or reduce the value of the properties.

Property Substitution

Some transactions allow the sponsor some flexibility that can lead to a change in the underlying portfolio's composition. Any such latitude for the sponsor brings potential for adverse selection. We will evaluate a sponsor's flexibility in the context of protections that may be built into the transaction's structure.

Full Recourse/Small Loans

Multi-borrower transactions sometimes include loans that allow the lender full recourse to the borrower and/or guarantor to repay the loan. Most SFR loans are non-recourse to the assets of the sponsor, except in limited cases noted below. While this may provide a better incentive to the borrower to repay the loan, it also increases the risk that the loan would be tied up in a borrower's or guarantor's personal bankruptcy. To reflect this risk, we may assume longer foreclosure timelines to account for the bankruptcy proceedings. Furthermore, full recourse loans are typically small, have weak cash management structures and their borrowers are not financially strong. In such a case, we typically assume higher loan probability of default.

Non-Recourse Carve-Out Guarantees

Loans in which the borrower is an SPE will likely include non-recourse carve-out guarantees by the sponsor that cover liability for damages for acts such as gross negligence, fraud, willful misconduct, physical waste, or misappropriation of funds, and full recourse liability for voluntary or collusive bankruptcy filings, breach of transfer or subordinate debt restrictions, and breach of certain SPE covenants. The guarantor should have net worth that it covenants to maintain for the life of the loan. Liability caps on the guaranty or weak net worth covenants are credit negative.

Structural Analysis and Liability Modeling

Advance Rate

As described in our recovery value analysis, the "advance rate" for any rating category is:

- » the final stressed recovery value for that rating category multiplied by an estimate of probability of default under a stress scenario consistent with the target rating, divided by
- » the aggregate initial Moody's value.

⁵ For rate caps that are part of the loan agreement, we consider the risk mitigated if the loan agreement requires the cap counterparty to meet the minimum ratings set forth by our methodology for assessing counterparty risks in structured finance transactions. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

The advance rate represents the portion of the loan that we will rate in the particular rating category. We may further adjust the advance rate to account for qualitative factors.

For multi-borrower transactions, we evaluate probability of default under a Aaa stress scenario. In this scenario, the correlation for the loans is reflected through a modeling assumption that all the loans in the portfolio are subjected to the same macroeconomic stress simultaneously. Despite subjecting all the loans in the pool to the same level of macroeconomic stress, we may model further correlation between loan performance under a Aaa stress. Typically, pools with independent and effective loan count of greater than 175 will be considered diversified and we do not model this additional residual correlation.

The following table summarizes the indicative advance rates at the time of assigning initial ratings for various rating categories for a single-borrower SFR transaction. We calculate the advance rate as a fraction of our initial Moody's value, which itself will be lower than the underlying portfolio's appraised value. Additionally, the actual advance rate may deviate from the range specified below depending on the sponsor and collateral characteristics.

Once we have rated the transaction, the advance rate as a fraction of a re-estimated Moody's value – driven by any change in the transaction's performance or housing prices trends – may fall outside these ranges.

EXHIBIT 3

Indicative Advance Rates for Different Rating Categories

Rating Category	Range of Indicative Advance Rates
Aaa	40%-55%
Aa	45%-60%
A	55%-70%
Baa	65%-75%

Source: Moody's Investors Service

Capital Structure

Our analysis accounts for the cash flow and loss allocation structure set forth in the transaction documents. We expect that in most cases the trust will distribute interest and principal payments on the pooled trust securities sequentially, and allocate realized losses and shortfalls in reverse sequential order. We expect that increases in credit support will be realized through the application of principal payments, and that decreases in credit support will be driven by realized losses. A deviation from such a structure could require the application of alternative stress scenarios and/or cash flow modeling.

Other Considerations

Property Manager and Servicers

Property Manager

Our analysis of SFR transactions includes an assessment of the quality of property management. Property management is responsible for all aspects of operations including rent collections, renovations, repairs, leasing, marketing, tenant screening, tenant services, compliance, safety, and general preservation of the collateral's condition. The management of the properties, therefore, affects revenues, expenses and property value.

For single-borrower SFR securitizations, the sponsor or affiliate of the transaction sponsor or, in some cases, third-party property managers with varying degrees of control, handle the property management. We assess

the quality of property management as part of a sponsor's operational review for single-borrower SFR transactions.

In multi-borrower SFR transactions, multiple property managers with varying experience and expertise manage properties, and thus the quality of property management could vary from loan to loan. Depending on the number of property managers and the number of properties managed for each loan, we would review a small sample of the property managers or conduct an assessment by reviewing the property management selection criteria and eligibility questionnaires.

An adequately capitalized sponsor positively affects the performance of SFR transactions. Lenders typically assess the collateral only to determine repayment of the mortgage loan, but the sponsor preserves the value of the collateral. For single-borrower SFR transactions, we review the sponsor and the sponsor's corporate family to assess their financial capacity and flexibility, as well as their expertise managing single-family properties. We evaluate financial capacity through a credit rating or a credit estimate,⁶ when available. In the absence of a credit rating or credit estimate, we may assume that financial capacity is weak. For multi-borrower SFR transactions, as the number of borrowers' increases, we will focus more on the lender's underwriting criteria in qualifying borrowers for loans.

The presence of several property managers, each with strong experience in a region or regions managing the property portfolio, could reduce operational risk in the absence of a single property manager with strong experience in all of the regional markets. An experienced master property manager that oversees and coordinates the regional property manager, similar to the master servicer in RMBS transactions, could effectively coordinate several regional managers.

Transactions with Multiple Borrowers

For SFR transactions with multiple borrowers, credit quality depends heavily on the quality and consistency of the transaction sponsor's operations and flow of information. A lack of standardized property maintenance and information reporting among a transaction's borrowers could result in uncertainty about the performance of the loans in the portfolio and the condition of the properties backing the loans.

Furthermore, the quality of information that a lender provides on its underwriting practices and business model is critical for multi-borrower SFRs. As the number of borrowers increases in a transaction, the likelihood of loan default depends more on the underwriting standards.

Operational Review

When assigning the initial rating to a single-borrower SFR transaction, we review the operations of the sponsor to form an opinion regarding:

- » marketing and attracting potential tenants, tenant underwriting and responding to tenants' requests;
- » analyzing the market, investment decision process, and acquisition and/or disposition strategy;
- » technology systems;
- » tracking and controlling repairs and maintenance costs, as well as maintaining and improving property condition;
- » tracking and controlling labor costs;
- » supervising and training employees;

⁶ For more information, see the discussion of credit estimates in *Rating Symbols and Definitions* and our cross-sector methodology that discusses the usage of credit estimates in our rating analysis. Links to *Rating Symbols and Definitions* and to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publication" section.

- » managing third-party service providers;
- » establishing and enforcing corporate policies and procedures;
- » maintaining all licenses and permits;
- » creating and maintaining reporting systems, including financial controls;
- » complying with all housing rules and regulations;
- » assessing corporate governance and executive experience; and
- » evaluating disaster recovery and back-up systems.

Beyond this initial review, the sponsor will generally provide yearly audited financial statements, as well as several stipulated company-wide performance metrics.

The results of our sponsor review will influence the assumptions that we use to determine future rental income or recovery value as well as the overall qualitative judgment of the rating committee. For example, we could increase the expected vacancy rate for weaknesses in marketing or maintaining properties or decrease initial property values for weaknesses in property valuation.

Alignment of Interest

In general, it is credit positive if the sponsor/manager retains a substantial financial interest in the transaction to ensure that its interests are aligned with those of investors in the rated securities. We anticipate that in most single-borrower SFR transactions, the sponsor will own the borrower SPE, which owns the underlying properties, so that such an alignment occurs. We will consider the credit implications of other arrangements.

Transactions with Smaller Operators

We could adjust our expense and cost assumptions to account for considerations pertaining to smaller operators. Mid-to-small-sized SFR operators can introduce more operational nuances that differentiate them from the larger operators in SFR transactions.

- » Smaller operators generally have less financial wherewithal and potentially limited access to capital. The reduced financial flexibility could increase an operator's risk of not performing its obligations in an adverse economic environment.
- » The lower financial flexibility could prevent these operators from making necessary expenditures for their platform such as investing in technology, risk control and experienced personnel, which could hurt the ongoing maintenance of the properties.
- » Owing to economies of scale, smaller operators could use third-party property managers to manage their properties in certain markets. These property managers could lack the same alignment of interest as these operators in maintaining the properties.
- » Owing to smaller portfolio size and lack of economies of scale, the portfolio could be exposed to higher geographic concentration risk as smaller operators limit their footprint in markets where they can achieve economies of scale. In addition, smaller operators could have higher operating expenses because of the use of third-party property managers and their inability to negotiate better pricing with third-party vendors for supplies and general contractors for property renovation.

Replacement of the Manager

SFR transactions likely allow a trust to replace the property manager for a given loan under certain conditions, such as:

- » An event of default occurs under the loan, (e.g., a failure to maintain debt yield or LTV covenants, subject to a cure period).
- » The manager is in material default under the management agreement beyond any applicable notice and cure period.
- » The manager becomes insolvent or a debtor in any bankruptcy or insolvency proceeding.

A capable back-up operator engaged by the securitization at the time of closing may mitigate the risks associated with a financially weak operator. For multi-borrower SFR transactions, back-up property managers may find it easier to take over a geographically concentrated portfolio.

Servicers

Master Servicer

The master servicer is primarily responsible for servicing and administering the loan. The responsibilities of the master servicer include advancing delinquent scheduled principal and interest payments (other than balloon payments) on the loan and other sums necessary to protect the property (e.g., real estate taxes and insurance), all to the extent that the master servicer deems them recoverable. The advancing obligations of the master servicer are usually backed up by the transaction trustee. The master servicer also administers the transaction collection and other accounts and receives property-level information monthly.⁷

Special Servicer

SFR transactions likely provide for a special servicer to manage the assets in the event the loan defaults. Ideally, the special servicer should have experience managing residential property disposition, as well as servicing expertise (either directly or through an affiliate). A special servicer may need to work with other real-estate-owned (REO) disposition companies and property managers to service the portfolio.

These SFR transactions might stipulate that the directing security holder, whose identity will be subject to "appraisal reduction" determinations, has the right to replace the special servicer. The special servicer could be subject to termination without cause if at least a threshold percentage of the security holders' voting rights initiate a vote to terminate and replace, with actual replacement requiring a majority or supermajority of security holders' votes.

Since the special servicer plays a critical role in a distress scenario, we also qualitatively evaluate the market for special servicing arrangements.

Legal Analysis

Collateral: Mortgages and Equity Pledges

First-lien mortgages on the underlying properties provide a strong legal foundation and make the sales proceeds from underlying properties available to the SFR securitization under different scenarios, including sponsor bankruptcy. Absent a senior-ranking mortgage lien, we will evaluate the risk of: (1) the SFR securitization not having senior rights to the properties following a sponsor or borrower bankruptcy, (2) the sale of the properties without lender's consent, and (3) other liens trumping the SFR securitization's claim on the properties.

The absence of mortgages would leave the SFR securitization exposed to the risk of losing its first-priority rights to the properties following a sponsor bankruptcy and successful substantive consolidation of the borrower with the sponsor. Although in our view it is unlikely that a court would order a substantive

⁷ For more information, see our methodology that describes our approach to assessing counterparty risks in structured finance, which sets forth criteria for master servicers and trustees to support Aaa ratings. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

consolidation, creditors would have a strong incentive to pursue such a consolidation because they would share in the value of the entire asset pool, if successful. Without mortgages, the credit quality of the structure would not likely be strong enough to support securities with a rating higher than Baa, absent strong mitigating factors such as a highly-rated sponsor.

Conversely, mortgages, in addition to the equity pledge, allow for higher ratings on the securities because mortgages protect the SFR securitization's first priority rights to the properties, even following a sponsor bankruptcy and successful substantive consolidation, and therefore act as a powerful deterrent to creditor challenges.

Bankruptcy Risks

We assess the likelihood that the structure will maintain its integrity if the sponsor or other key transaction parties declare bankruptcy. Securitized assets might be considered part of the bankruptcy estate of a key transaction party for three primary reasons: re-characterization of the transaction as a financing rather than a sale, fraudulent conveyance and preference, and substantive consolidation.

The concept of bankruptcy remoteness in SFR securitizations relates principally to the risks listed below. To achieve a high investment-grade rating, there must be minimal risk of:

- » The owner of the properties (borrower) becoming entangled in the bankruptcy proceeding of the sponsor or its affiliate.
- » The issuer of the SFR securities becoming entangled in a bankruptcy or similar proceeding involving the lender (seller) or its affiliate.
- » A bankruptcy proceeding being filed by or against the issuer or borrower.

To limit bankruptcy risk in, for example, a US SFR transaction, each of the borrower SPEs will typically be a newly created SPE organized as a Delaware limited liability company or partnership. As a further risk mitigant, the transaction could require that two independent directors be appointed from nationally recognized corporate service providers. The independent directors will agree to waive various fiduciary duties to the SPE's owner and its corporate family (specifically permitted by Delaware LLC or LLP statutes). The issuer will typically be a New York common law trust. Recycled SPEs and non-Delaware entities carry additional risks and their presence in an SFR transaction could require additional credit support if the risks are not adequately mitigated.

Representations and Warranties

Representations and warranties for single-borrower SFR transactions will likely be similar to those of single-borrower, multi-property CMBS transactions. If they differ, we will assess the credit impact case-by-case.

For example, the seller of the loan will make limited representations and warranties to the trustee (for the certificate holders' benefit) concerning the loan to the depositor. A material breach of any representation typically requires the seller to cure or repurchase the loan at par. These representations and warranties generally cover, among other things, the seller's ownership of the loan and collateral, the absence of liens, and compliance with real estate mortgage investment conduit rules.

The borrower makes representations and warranties in the loan agreement, which typically cover, among other things, the title to the properties, the presence of insurance, the presence of the deeds, and compliance with laws. A material breach of any of the borrower representations and warranties relating to the properties typically requires the borrower to cure the breach, buy out the property at a price equal to its

allocated loan amount, or substitute the property with an eligible property. Failure to do so would cause an event of default under the loan.

For transactions involving multiple, unrelated borrower SPE, we would expect more-extensive representations and warranties by the seller(s) of the loans to achieve investment-grade ratings.

Environmental

The properties backing an SFR transaction may not be subject to environmental investigation or reports that would be present in a typical CMBS transaction. Instead, we anticipate that the borrower or, for multi-borrower SFR transactions, the seller, will make certain representations and warranties about the condition of the properties. Additionally, the borrower will likely execute an environmental indemnity agreement with respect to the properties in favor of the lender. Under the environmental indemnity agreement, the borrower would agree, at its sole cost and expense, to protect and indemnify the lender from any losses incurred as a result of environmental hazards.

Insurance

Property and casualty insurance coverage should be similar to that obtained in single-borrower, multi-property CMBS transactions. All properties should be insured under "special causes of loss" forms for the full replacement value. We expect adequate coverage against windstorm, earthquake and flood perils for all properties located in zones prone to such hazards. We will closely examine blanket insurance policies for concentrations of properties in special hazard zones to determine adequacy of coverage and policy limits. The borrower and the properties should also carry other insurance as is reasonably required by prudent lenders.

Third-Party Reviews

Given the large number of properties backing SFR transactions and the importance of accurate valuations, the use of independent and qualified third-party reviewers is credit positive because it provides an added layer of oversight.

Valuation

Where BPOs (rather than appraisals) are the primary source of initial property valuations, a third party can source the BPOs to ensure a degree of independence. The third party can also compare the BPOs to actual sales prices and perform market analysis to validate and reconcile the BPO values. Another third party will often review a sampling of BPOs. Such a review will typically assess whether the broker has chosen appropriate comparables. We would, for example, consider a randomly selected sample computed using at least a 95% confidence level, a 2% precision level and a 5% assumed error rate as an adequate sample. We will review the results of this sample analysis to determine the degree of adjustment to the BPO valuation. We will also take into account the scope provided to the third party sourcing the BPO in determining adjustment to BPO valuation.

Data Integrity

We expect that a third party will perform a data integrity check on key information in the data tape such as rent payments, lease start and end dates, property acquisition costs, and renovation costs. These checks would typically include a comparison of the information on the data tape with source documents. We may adjust our model inputs based on the scope or the results of the data integrity check.

Title and Deed Review

We expect that a third party will verify the accuracy of key information in the deeds, the title insurance and the mortgages. For example, we expect the deeds will list the borrower as the owner of the properties, the

trust will have the benefit of title insurance on the properties and the mortgages' legal descriptions of the properties will match those in the deeds.

Monitoring

We generally apply the key components of the approach described in this report when monitoring SFR transactions, except for those elements of the methodology that could be less relevant over time, such as the review of the legal structure.⁸

Trustee remittance statements and consolidated financial statements constitute the primary sources of information for transaction surveillance. The property manager will also typically provide performance metrics and other data on a monthly, quarterly and annual basis, such as those listed in Appendix B, which we use to monitor transactions. If certain fields or data are not provided, we will consider on a case-by-case basis and may apply more conservative estimates.

In reviewing the ongoing performance of the transactions, we will monitor the key variables that determine NOI and NCF for a transaction. For example, where available we would consider vacancy rates, capital expenditures on properties and other variables in support of our analysis of NOI and NCF.

We will also monitor a transaction's portfolio mix for any unexpected changes. Unexpected negative changes can result from unusual patterns in the properties that are released by a sponsor as contemplated by the transaction documents. Also, where available, changes in rent renewal, lease turn-over rates, and time to re-rent would also be evaluated.

Periodically, and consistent with the approach used at closing, we will continue to analyze the sufficiency of the estimated proceeds from the sale of the underlying properties to repay the principal balance of the rated securities and any remaining transaction expenses. With the passage of time, we will increasingly factor in house price trends for the properties in the portfolio and the collateral performance. For example, a substantial decline in properties value could lead to a downgrade. Conversely, we could consider upgrading ratings of securities if, for example, properties underlying the portfolio appreciate substantially and the property conditions remain well maintained.

When available we will also review the financial strength, as evidenced by a credit rating or a credit estimate, of property manager and/or its corporate family.

For multi-borrower SFR transactions, we will analyze performance information in a similar manner to single-borrower SFR transactions. However, in multi-borrower SFR transactions, credit quality will depend heavily on the quality and consistency of the transaction sponsor's operations, and flow of performance information. A sponsor, working with other parties, can help ensure that the performance information the borrowers supply is timely and consistent in content and format. We would expect to see such information both at closing and throughout the transaction term to monitor such transactions.

⁸ For example, in methodologies where models are used, modeling is not relevant when it is determined that (1) a transaction is still revolving and performance has not changed from expectations, or (2) all tranches are at the highest achievable ratings and performance is at or better than expected performance, or (3) key model inputs are viewed as not having materially changed to the extent it would change outputs since the previous time a model was run, or (4) no new relevant information is available such that a model cannot be run in order to inform the rating, or (5) our analysis is limited to asset coverage ratios for transactions with undercollateralized tranches, or (6) a transaction has few remaining performing assets.

Appendix A: Typical Information Needed to Assign a New Rating to SFR Securitizations

Operator Information

- » **Information about the operator** including its role in the transaction; experience; the characteristics and performance of its portfolio; expertise with the different local markets, local laws, and ordinances.
- » **A review of the operator's performance**, its experience and ability to perform its role in the transaction, including the percentage of the portfolio that the operator was able to rent out, tenant default rates, re-leasing periods, the yield the operator earned, the costs incurred, and the capital gains on sold properties.
- » **An explanation of its strategy** and an evaluation of its operations, information technology systems, and finances.
- » **A discussion about the operator's ability to manage tenants and to maintain and market properties**, as well as its experience managing third parties.

Property-Related Information

- » **Information on expenses** including re-leasing costs, maintenance costs, recurring expenses associated with the property, property management expenses, and expenses to prepare the properties for rental
- » **Selection criteria for the properties**

Rent Information

- » **Description of the rental market in relevant areas** including the history of rental rates, renewal rates, average marketing time, cap rates, vacancy rates, and historical expenses
- » **Detailed information on properties in the pool** including identification of properties in the securitization that the owner already rents out; location; lease expiry date; current and estimated rents on all properties; concessions on the properties; security deposits related to each property; time needed to re-rent; next best offer received, if available; market rents in the area (low, median, high); vacancy rates in the area; average time to rent the properties; and details on rent-controlled or rent-stabilized properties, or properties with other rent restrictions or covenants that accompany the title.
- » **Description of the condition of the properties** at the time of securitization, including information on any renovations or permissions needed after securitization, as well as any prior claims on the properties
- » **Guiding principles behind rental agreements** including the length of the lease; obligations of and representation by the property owner and tenant; rental terms and conditions, including any options for the tenant or owner (e.g., tenant purchase options); and rental insurance requirement and break-up fees.
- » **Criteria for qualifying tenants and tenant application data**

Property Value Information

- » **Valuation for each property.**
- » **Purchase price of each property**, and renovation and remodeling expenses incurred since purchase.
- » **Independent third-party review of valuation.**
- » **Available engineering reports** and reports pertaining to environmental conditions.

Transaction Information

- » **Type of transaction** including term, revolving facility, or master trust.
- » **Transaction structure** such as amortizing, bullet, or balloon payment structure; for bullet or balloon structures, an explanation of the repayment mechanism; expected and legal final maturity of the securities; and debt service coverage and LTV ratios.
- » **Legal structure of the transaction** and tax consequences.
- » **Property ownership information.**
- » **Description of cash flow waterfall, triggers, and other structural mechanisms** including reserve funds, liquidity reserve, credit enhancement, over-collateralization, allocation of excess cash, turbo feature, credit enhancement floor, triggers, and specific features.
- » **Transaction parties and their roles** including an indication of whether there is a single national operator or multiple regional operators in the transaction; if the transaction owns mortgages instead of properties, then additional information on borrowers and mortgage loans.

Lender Information in Multi-Borrower Transactions

- » loan sourcing/sales and marketing practices
- » underwriting policies and processes
- » typical borrower profile
- » property valuation policies and procedures
- » closing policies and procedures
- » quality-control and audit procedures
- » regulatory, legal, and compliance practices
- » management strength, strategies, and track records
- » technology
- » property management and reporting data/samples
- » alignment of interests.

Appendix B: Example of Typical Information Used to Assign and Monitor Rating for Single-Borrower SFR Securitizations⁹

- A) To issue a new rating and for substituted properties (in Excel format)
- cut-off/substitution date
 - transaction name
 - property ID¹⁰
 - property manager
 - third-party property manager
 - property address
 - city
 - zip code
 - MSA
 - county
 - state
 - acquisition date
 - acquisition type (MLS, trustee, short-sale, REO sale, mini-bulk, bulk or non-trustee)
 - property seller (if acquisition type is mini-bulk or bulk)
 - purchase price
 - hard cost
 - mixed cost
 - closing cost
 - other cost
 - total cost (post-rehab)
 - renovation complete – yes or no
 - renovation completion date
 - current property value
 - current valuation type (BPO (exterior), BPO (interior), full appraisal, exterior appraisal, AVM, house price index, or other)
 - current valuation index name
 - current valuation provider
 - current valuation date

⁹ Trustee remittance statements and consolidated financial statements will constitute the primary sources of information for transaction surveillance. The manager will also typically provide performance metrics and other data on a monthly, quarterly and annual basis, such as those listed in Appendix B, which we will use to monitor transactions. If certain fields or data are not provided, we will consider on a case-by-case basis and may apply more conservative estimates.

¹⁰ Use property ID as of acquisition date.

- property type
- year built
- total square feet
- number of bedrooms
- number of bathrooms
- pool (yes or no)
- current occupancy status (occupied or vacant)
- number of days vacant
- time to rent (months)
- lease start date
- lease end date
- month-to-month
- future lease start date
- previous lease (yes or no)
- vacant – previous lease start
- vacant – previous lease end
- original length of lease (months)
- security deposit
- Section 8 (yes or no)
- actual contractual rent (annual)
- previous actual contractual rent (annual)
- underwritten rent (monthly)
- underwritten GPR (annual)
- underwritten other receipts (annual)
- underwritten gross revenue (annual)
- underwritten bad debt amount (annual)
- underwritten concessions & concessions of free rent (annual)
- underwritten vacancy (annual)
- underwritten net revenue (annual)
- underwritten repairs & maintenance (annual)
- underwritten leasing & marketing expense (annual)
- underwritten turnover expense (annual)
- underwritten pool maintenance expense (annual)
- underwritten property management fees (annual)

- underwritten property taxes (annual)
- underwritten HOA fees (annual)
- underwritten insurance expense (annual)
- underwritten other expense (annual)
- underwritten net operating income (before capital expenditure) (annual)
- underwritten capital expenditure reserve (annual)
- underwritten net operating income (after capital expenditure reserve) (annual)
- tenant delinquent (yes or no)
- tenant delinquency stage (0-30 days, 31-60, 61-90 days or 90+ days)
- actual delinquent amount (annual)
- actual concessions & concessions of free rent (annual)
- HOA (yes or no)
- HOA contact information
- HOA payment frequency (monthly, quarterly, semi-annually or annually)
- actual HOA fees paid
- HOA fees – delinquent amount
- senior liens (yes or no)
- title insurance on senior liens (yes or no)
- substituted property (yes or no).

B) To monitor ratings on **existing transactions**

On an Annual Basis:

- » sponsor's audited financial statements.

On a Quarterly Basis (in Excel format):

- » portfolio comparison (for the top 10 MSAs and in the aggregate for all MSAs):
 - comparison between a) the properties in the securitization and b) the sponsor's properties, with respect to each of the following metrics:
 - › number of residential home properties owned
 - › most recent BPO and cost basis of assets
 - › average age of assets in portfolio
 - › current average monthly rent per asset
 - › average renewal rate percentage during previous quarter
 - › number of assets sold during previous quarter.

- » property information (for MSAs in which properties are located and in the aggregate for all properties):
 - reporting date
 - transaction name
 - MSA
 - gross potential rent (as defined in the loan agreement)
 - actual other receipts
 - actual gross revenue
 - actual delinquent amount
 - actual concessions
 - actual vacancy amount
 - actual net revenue
 - actual controllable operating expenses
 - › actual repairs and maintenance (including pool maintenance)
 - › actual leasing and marketing expense
 - › actual turnover expense
 - › actual general and administrative expenses
 - › actual total controllable operating expenses
 - actual non-controllable operating expenses
 - › actual property management fee
 - › actual property tax
 - › actual HOA fees
 - › actual insurance premiums
 - › actual total non-controllable operating expenses
 - actual net operating income (before capital expenditure)
 - actual capital expenditure reserve
 - actual net operating income (after capital expenditure).
- » property valuation information (for each property):
 - reporting date
 - transaction name
 - property ID (as of cut-off date)
 - property manager
 - third-party property manager
 - property address
 - city

- zip code
- MSA
- county
- state
- current, previous property value
- current, previous property valuation type
- current, previous valuation index name
- current, previous valuation date.
- » estimated quarterly HOA dues at property level (in Excel format):
 - property ID
 - manager
 - property address
 - city
 - zip code
 - MSA
 - county
 - state
 - property in an HOA (yes or no)
 - HOA type
 - HOA name
 - number of HOAs
 - payment frequency
 - payment start date
 - most recent HOA payment due date
 - payment month(s)
 - 1st payment month
 - 2nd payment month
 - 3rd payment month
 - 4th payment month
 - periodic payment amount
 - annual dues
 - total estimated HOA dues
 - HOA fees due for such calendar quarter
 - HOA fees paid for such calendar quarter.

On a Monthly Basis:

- » property information (in Excel format):
 - reporting date
 - transaction name
 - property ID (as of cut-off date)
 - property manager
 - third-party property manager
 - property address
 - city
 - zip code
 - MSA
 - county
 - state
 - contractual rent
 - actual delinquent amount/aged receivables balance
 - actual concessions & concessions of free rent
 - actual HOA fee
 - current occupancy status (occupied or vacant)
 - previous occupancy status (occupied or vacant)
 - number of days vacant
 - number of days occupied
 - previous lease end date
 - lease start date
 - lease end date
 - renewal/new lease (renewal or new)
 - month-to-month (yes or no)
 - previous month-to-month (yes or no)
 - tenant delinquent (yes or no)
 - tenant delinquency stage (0-30 days, 31-60, 61-90 days or 90+ days)
 - HOA – yes or no
 - HOA contact information (name)
 - HOA payment frequency (monthly, quarterly, semi-annually or annually)
 - next HOA payment date

- » property sale information, including disqualified properties (in Excel format):
 - properties sold in the period
 - sales price for any property sold
 - release price for any property released during the period.

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Moody's Related Publications

Credit ratings are primarily determined through the application of sector credit rating methodologies. Certain broad methodological considerations (described in one or more cross-sector rating methodologies) may also be relevant to the determination of credit ratings of issuers and instruments. 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 includes a discussion of Moody's Idealized Probabilities of Default and Expected Losses, and which is available [here](#).

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» contacts continued from page 1

Analyst Contacts:

NEW YORK +1.212.553.1653

Kruti Muni +1.212.553.7989
Managing Director - Structured Finance
kruti.muni@moody.com

Ola Hannoun-Costa +1.212.553.1456
Senior Vice President/Manager
ola.hannouncosta@moody.com

OUTDATED
METHODOLOGY

Report Number: 1214103

ADDITIONAL CONTACTS:

Frankfurt:	+49.69.2222.7847
Madrid:	+34.91.414.3161
Milan:	+39.02.3600.6333
Paris:	+33.1.7070.2229

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