MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

Operating Company Securitizations Methodology

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Analyst Contacts:

NEW YORK +1.212.553.1653

Giyora Eiger +1.212.553.4379
Vice President -Senior Credit Officer
giyora.eiger@moodys.com

Benjamin Shih +1.212.553.2923
Vice President –Senior Credit Officer
benjamin.shih@moodys.com

Daniela Chun Jayesuria +1.212.553.2723
Associate Managing Director
daniela.jayesuria@moodys.com

PARIS +33.1.7070.2229

Carole Gintz +33.1.5330.1057
Associate Managing Director
carole.gintz@moodys.com

CLIENT SERVICES:

Americas: +1.212.553.1653
Japan: +81.3.5408.4100
EMEA: +44.20.7772.5454
Asia-Pacific: +852.3551.3077

This rating methodology replaces *Operating Company Securitizations Methodology* published in April 2020. We have added a new Appendix A, "Intellectual Property Securitizations," which describes the analytical aspects that we consider when assessing such transactions. We also made editorial updates to improve readability.

Scope

This rating methodology applies to operating company securitizations. In Appendix A, we discuss analytical elements we consider when assessing securitizations backed by intellectual property, which share some similarities with operating company securitizations.

In this methodology, we explain our global approach to assessing credit risks in operating company securitizations, including quantitative and qualitative factors that are likely to affect rating outcomes in this sector. The scope of this methodology includes transactions backed by operating assets that generally include special purpose entity (SPE) structures and require active management to generate existing and future cash flows – such as whole business securitizations or securitizations of a defined set of cash-generating assets, for example, those backed by volumetric production payments, or billboards – and transactions backed by franchise royalty or intellectual property.

Rating Approach

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

Asset Description

Operating company securitizations cover a spectrum of defined assets and transactions, from highly structured single-asset, single-operator transactions to securitizations of well-diversified assets with stable or alternative-use values and limited operational and refinancing risks. The first type of transactions – highly structured single-asset, single-operator – share similarities with corporate, project or infrastructure finance transactions where the uplift from the sponsor's creditworthiness is usually limited. We may assess these transactions using both the relevant principles of our corporate, project or infrastructure finance methodologies[1] and those described in this methodology. The second type – transactions with diversified assets with limited operational and refinancing risk – are typically more delinked from a sponsor's creditworthiness, and we assess these transactions primarily using this methodology.

In operating company securitizations, a sponsor or manager actively manages the securitized assets to generate cash flows. The assets include the whole or a portion of a business, or the securitization of cash-generating assets, for example, those backed by volumetric production payments, billboards, franchise royalty and intellectual property.

The types of assets securitized also vary across countries due to different legal frameworks as well as other market-specific considerations. While we apply the approach to operating company securitizations globally, we adjust our analysis to account for regional or country-specific differences.

Key Considerations

Operating company securitizations are backed by the whole or a part of a company's assets and its business. Typically, the operating company (sponsor or manager[2]) continues to manage the assets under the terms of a management agreement with the issuer. We may rate the debt issued from a bankruptcy-remote entity higher than the sponsor's secured debt.

Operating company securitizations are diverse, and the analytical approach we use depends on the securitized assets and legal structure. For operating assets that rely on a sponsor's performance, we typically utilize a rating uplift approach that starts with the sponsor's rating.[3] For assets with stable and predictable cash flows, like franchise royalty fees, we typically analyze the asset cash flows. For real-estate-like assets, we may consider a leverage analysis based on a loan-to-value (LTV) concept of the assets.

Operating company securitizations typically involve the use of SPEs that own assets or rights to assets and issue the rated securities.

The rating uplift from a sponsor's rating is a key consideration in our analysis. The linkage analysis and rating uplift depend on several factors such as the stability and predictability of cash flows, diversity and liquidity

1 A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

2 We use the term sponsor or transaction manager interchangeably throughout this methodology.

3 For more information, see the "Sponsor's Creditworthiness" section

of the assets, and whether the assets are a portion or the majority of a sponsor's business. We also consider the transaction structure and other structural elements in this analysis.

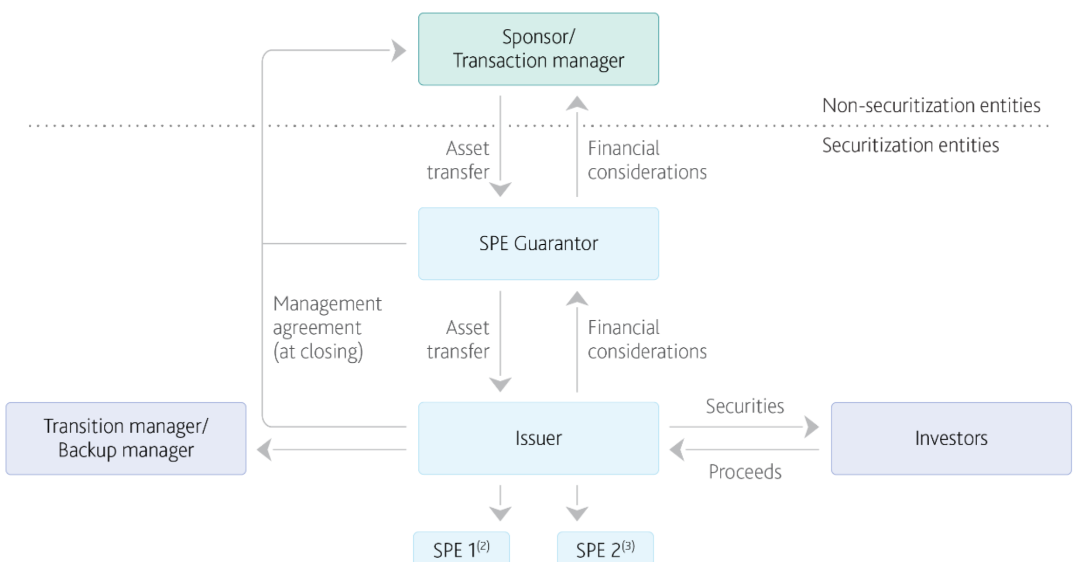
The model outputs derived by our quantitative modeling are important considerations in our rating committee process. However, the ratings assigned by the rating committee incorporate a variety of qualitative factors and may differ from the model output.

Transaction Overview

Operating company securitizations use a variety of structures. Exhibit 1 shows a simplified transaction structure that reflects common elements. On or before the transaction closing, a sponsor transfers operating assets and associated rights such as intellectual property to the issuer. The issuer then transfers the assets to newly formed SPE subsidiaries of the issuer. Alternatively, the sponsor contributes existing SPEs which own operating assets and associated rights to the issuer. The issuer sells securities and uses the proceeds as financial consideration for the assets payable to the sponsor. At transaction closing, the sponsor enters into agreements with the issuer and SPE guarantor to manage the assets (transaction manager). Subject to transaction triggers, a transition manager may agree to temporarily manage the assets and may help transition the assets to another manager should the transaction manager become insolvent. Alternatively, a backup manager may be contracted at transaction closing.

EXHIBIT 1

Simplified Transaction Structure(1)



(1) Simplified US structure; (2) for example, owns franchise agreements, development agreements, intellectual property; (3) for example owns real estate.

Source: Moody's Investors Service

In certain jurisdictions, such as the United Kingdom, transaction structures may involve a secured loan rather than an asset transfer when the business-related cash flows of a company are securitized. In a secured loan structure, the sponsor typically remains the owner of the assets.

Asset-level Analysis and Related Modeling

In this section, we explain how we analyze the underlying assets that back operating company securitizations and how we estimate potential losses on those assets, linkage and rating uplift.

Contrary to more common securitizations, operating company securitizations may rely on cash flows from both existing and future assets. In addition, the securitized assets require extensive and ongoing sponsor or manager involvement to generate cash flows and maintain asset values. The sponsor typically manages the assets. Backup or transition manager arrangements are a key factor in our analysis, including relevant associated triggers. As a result, operating company securitizations often have some linkage between the sponsor's creditworthiness and the rating of the securitized debt.

Asset Management

When assessing operating company securitizations, we review the procedures for managing and maintaining the securitized assets. We evaluate the extent of asset management needed, depending on the type of securitized assets. A manager may, for example, provide administrative, accounting, manufacturing, physical asset maintenance, marketing or even strategic services. The amount and timing of cash flows and the maintenance of asset values often depend on the quality and type of services a manager provides.

When a manager performs extensive operational services, cash flows and asset values depend on the manager's expertise and performance. By contrast, when a manager provides primarily oversight services such as overseeing the workforce of one or more subsidiaries, then such a manager may be less important for generating cash flows and hence simpler to replace.

Backup or Transition Manager and Associated Triggers

When the sponsor in an operating company securitization has a Moody's rating (or a credit estimate), it is typically lower than the rating of the securities. The impact of a manager's default on transaction performance can be partly mitigated by a backup or transition manager unless the securitized asset cash flows and values are closely linked to the manager's operations and creditworthiness. When the linkage between manager and an operating company securitization is strong, we give little benefit to the presence of a backup or transition manager as well as other structural features and, as a result, the rating uplift from the sponsor's rating will be limited.

A backup manager can assume fully or partially the manager role. A transition manager generally develops a transition plan and finds a replacement manager. Both types of managers are appointed either at transaction closing or later based on defined triggers or events.

We expect that, in most cases, a management transfer causes some performance deterioration and cash flow disruption. We may assess the disruptions with a cash flow model, for example, when we derive a sponsor's default probability and can reliably estimate the cash flow disruption. In other cases, we may assess the risks of a manager transfer more qualitatively, including the rating uplift considerations from the sponsor's or manager's rating.

Since cash flows and asset values are typically important to a sponsor's operations and dependent on a manager's performance, manager events of default can be quite complex in operating company securitizations. Events can be defined either as "manager events of default" or "transaction events of default," and the consequences can be quite different.

In transactions where asset values depend on a manager's performance, we may see and assess early warning triggers. These triggers may include a deterioration in asset value, EBITDA triggers (both absolute levels and ratios to debt service), debt-to-equity triggers, net worth trigger events or a default under the manager's other debt obligations. Transactions may also include triggers specific to the securitized assets. We review whether triggers are examined, how often they are calculated and which data is used. If triggers are calculated, for example, with dated information, we may deem the triggers of limited value.

Asset Analysis

A key consideration in our analysis is the linkage with the sponsor's creditworthiness and the rating uplift. In operating company securitizations, the transaction sponsor or manager is typically rated lower than the structured finance securities. Where relevant, we seek insights from sector credit analysts to inform our analysis. In some cases, our approach may also consider these additional elements:

» A simulation analysis of the revenues from the underlying assets, which we may consider for transactions with predictable cash flows, such as those backed by franchise royalty fees. However, qualitative factors are important in this asset class too, and may result in assigned ratings that vary from simulation model outputs.

» A leverage analysis based on the LTV concept also can be an important consideration for those transactions with some stable franchise value or more real-estate-related assets.

Sponsor's Creditworthiness

To assess a sponsor's creditworthiness, we typically use its Moody's rating. If the sponsor is not rated by us, we may use alternatives to assess the creditworthiness. We may, for example, use a credit estimate to assess the sponsor's default probability in a transaction when we determine that the ratings of the securities are not highly sensitive to the sponsor's creditworthiness.[4]

Linkage Analysis and Rating Uplift

In an operating company securitization, the linkage between the sponsor's creditworthiness and the rated securities depends on several factors, including the stability and predictability of cash flows, the diversity and liquidity of the assets and whether the assets are a portion or reflect the majority of a sponsor's business. We also consider the extent to which the historical and expected asset performance and their value depend on the sponsor's operations and its creditworthiness.[5] The transaction structure – including the presence of a backup/transition manager and adequate covenants and triggers – as well as sponsor-specific considerations would be additional factors.

If an operating company securitization involves, for example, asset cash flows and values that are closely linked to a sponsor's operations, we may assess the cash flows and asset values under an approach more similar to a corporate finance issuer analysis. We may then limit the rating uplift from the sponsor's creditworthiness to one to two notches. Because there is typically no cross default across the securitized debt, we may calculate the leverage, such as debt to EBITDA multiples, per tranche and compare them with the relevant corporate scorecard outputs. We may also consider other measures of leverage, such as debt service coverage ratios and free cash flow debt multiples, for different rating categories. In these types of transactions, we typically seek insights and active participation from relevant sector credit analysts.

If the operating intensity of the assets is limited and the assets have intrinsic value independent of the sponsor's operations, our analysis is closer to a common securitization analysis including cash flow modeling

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

5 For more information, see Appendix B.

or scenario analysis. In these cases, we may more substantially delink the ratings of the securities from a sponsor's creditworthiness.

Simulation and Scenario Analysis

We may simulate cash flows when they are relatively stable and predictable and have a limited dependency on the sponsor's business and creditworthiness. To quantify an expected loss, we identify the key cash flow drivers, determine how these drivers affect cash flows and asset values, and estimate likely ranges and distributions for these parameters. We use these values to simulate the future asset and cash flow performance. We also consider industrywide, sponsor- and asset-specific risks that may provide information on more transformative events that could impact asset performance. We may include these risks into our simulation analysis. We may rely on a scenario analysis rather than – or in addition to – a simulation analysis to derive the cash flows and asset values.

Depending on the linkage with sponsor performance and the ability to predict cash flows in case of sponsor bankruptcy, we may model a sponsor's default risk to quantify potential losses. Generally, we assume a sponsor's default probability that is commensurate with its creditworthiness. If a sponsor is unrated, we may use a credit estimate to determine its creditworthiness.[6]

Leverage Analysis

For real-estate-like assets, we may consider a leverage analysis based on an LTV concept of the assets. We calculate the leverage inherent in a transaction and for each security. As such, we may consider asset valuations from reputable third parties using methods appropriate for the underlying assets. When relevant, we may consider our LTV and other leverage guidelines established for comparable structured finance asset types.[7]

Appraisals or evaluations of "hard" assets are useful in establishing a floor for the overall asset values. Operating company securitizations, however, may also include "soft" assets that we may consider. When we use asset valuations, we also consider asset-specific background information. This may include the general market environment, the assets' liquidity, alternative uses for the assets (particularly real-estate-like assets), and whether government regulations, current or future, could affect asset values. We may find it important to determine the objectivity of an asset valuation and how asset values may change over time, particularly in case of potential linkage between a sponsor's creditworthiness and asset values.

Structural Analysis and Liability Modeling

In this section, we explain how we analyze the structural features of an operating company securitization, including how we model and allocate cash flows to different classes of securities, taking into account asset cash flows and available credit support.

Structural Analysis

When we analyze the transaction structure of an operating company securitization, we typically consider the following: the structural considerations and triggers that limit exposure to the sponsor's creditworthiness; the transaction's limited refinancing risks; sources of liquidity and reserves; transaction costs; and the alignment of interests between transaction parties.

6 For more information, see our methodology that describes our approach to using credit estimates in our rating analysis. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publication" section.

7 For more information, a link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Structural Considerations

GENERAL LIMITS TO THE SPONSOR'S ACTIVITIES

When the sponsor's continued involvement in the transaction affects the value of the securitized assets, operating company securitizations often limit to a certain extent the sponsor's activities within the securitization structure after transaction closing. The sponsor may be unable to take certain actions without investors' approval or be required to take certain actions upon triggers. Such limitations and requirements are designed to maintain asset values and may include constraints around additional debt, asset sales, or appointing a business adviser to assist in case of asset underperformance. They are usually present to a lesser extent in secured debt transactions, including in high-yield transactions with a more comprehensive covenant package. Covenants and pledges in a company's secured bank facility serve as a starting point for additional, securitization-specific controls.

MANAGER TRANSFER

Operating company securitizations typically permit investors to replace the manager in case of sponsor distress and after an affirmative vote of a specific percentage of investors. However, some practical constraints may arise in this context and would prevent a manager replacement. Please see the subsections that discuss transition manager and backup manager in the asset analysis section.

ASSET SALES

Operating company securitizations may allow sponsors to sell part of the securitized assets during transaction life and use the proceeds (or some portion thereof) to accelerate the repayment of the securities. Such asset sales may be tied to a trigger event related either to the manager or to the assets. Investors may also be able to direct asset sales in an enforcement event. As far as the rated securities are sized by the sponsor to provide protection against particular levels of asset deterioration, this mechanism, together with a reasonably liquid market for the assets provides some assurance that the assets will not deteriorate beyond those particular levels. We consider asset sale features including their impact on the rated securities.

CONSTRAINTS ON ADDITIONAL DEBT

Operating company securitizations typically limit a sponsor's capacity to take on additional debt within the securitization structure. This limitation protects the securitized assets against third-party creditors and potentially reduces the default probability of the rated securities. We review transaction documentation to evaluate the constraints on additional debt.

Triggers

Triggers are typically transaction-specific and may prompt actions that include replacing the manager, capturing additional cash, or diverting cash flows to protect investors if a transaction underperforms or certain transaction parties fail to perform as expected. Some triggers that are indicative of a transaction's financial performance may prompt an early amortization, including:

- Debt Service Coverage Ratio falling below a threshold
- An appraisal event, when a third-party appraiser values the portfolio such that an LTV rises above a threshold
- Senior securities remain outstanding beyond a certain date, such as the expected maturity date

Other triggers may relate to the transaction manager's or sponsor's conduct. This generally includes a declaration of bankruptcy, fraud or willful misconduct, a breach of representations and/or warranties, and failure to promptly remit payments to the transaction. We review the types of transaction triggers, their thresholds and potential impact. We also assess the trigger calculations, timeliness of data and whether triggers are subject to independent third-party reviews.

Limited Refinancing Risk

Operating company transactions may have a period with a limited repayment or no repayment of the issued securities. At the anticipated repayment date, however, the transaction typically uses all or most of the asset cash flows to repay the rated securities. Operating company transactions frequently have a legal final maturity that is much longer than the anticipated repayment date, and as a result, the refinancing risk is usually quite limited. We assess transaction structures to understand how potential refinancing risks may be mitigated.

Liquidity and Reserves

In some transactions, liquidity or interest reserves are part of the transaction structure and available to meet obligations on the rated securities. Depending on the transaction type, a reserve fund is sized to meet interest payments on the securities for a specific period depending on the transaction's liability structure. The reserve is often funded at transaction closing and may be subject to a floor that may increase or decrease with time. We assess how the liquidity and reserves are structured and whether they are appropriate to address, for example, interest or other payments.

Transaction Costs

A manager replacement, for example, results in additional transaction costs, even if provisions are made at transaction closing. The asset performance may also deteriorate while the manager is under stress and may deteriorate further during a restructuring or while a manager transfer is implemented. The transfer can include costs such as moving files, software licenses, or hiring advisers. Additionally, costs can include audit and legal fees that may be incurred if the manager fails to perform their duties or to cooperate in the manager transfer. We typically review the costs and may stress costs in our analysis.

Alignment of Interests Between Manager and Investors

If the manager's economic interests are similar to those of the investors, it is more likely that the manager's actions will be in the investors' interests. A nonalignment of interests could arise in distress situations that may result in distorting a manager's incentive. We review transaction documents to assess whether they limit a potential nonalignment.

Cash Flow Analysis

When we use a simulation approach, we derive cash flows from the simulations that we then run through a liability model to determine expected losses. The model calculates the security's loss for each scenario of the probability distribution. The model then weights each security's loss by the probability implied by the distribution. The model then sums the weighted losses to calculate the security's expected loss. We determine the model output for the security based on our benchmark relationships between a security's expected loss, the security's weighted average life, and our various rating categories.[8]

Loss Benchmarks

In evaluating the simulation model output for operating company securitizations, we select loss benchmarks referencing the Idealized Expected Loss table[9] using the Symmetric Range, in which the lower-bound of loss consistent with a rating category is the midpoint (strictly, the geometric mean) between the Idealized Expected Loss of the rating category and the Idealized Expected Loss of the next higher rating category. The upper-bound of loss is analogously determined as the geometric mean between the Idealized Expected Loss of the rating category and the Idealized Expected Loss of the next lower rating category. Mathematically,

8 For more information, see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions* (a link can be found in the "Moody's Related Publications" section) and in the "Loss Benchmarks" section.

9 For more information, see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions*. A link can be found in the "Moody's Related Publications" section.

the benchmark boundary is computed as an equal 50/50 weighting on a logarithmic scale. That is, the benchmark boundaries of loss appropriate for evaluating rating category R are given by:

EXHIBIT 2

$$[1]\ Rating\ Lower\ Bound_R = exp\{0.5 \cdot \log(Idealized\ Expected\ Loss_{R-1}) + 0.5 \cdot log(Idealized\ Expected\ Loss_R)\}$$

$$[2]\ Rating\ Upper\ Bound_R = exp\{0.5 \cdot \log(Idealized\ Expected\ Loss_R) + 0.5 \cdot log(Idealized\ Expected\ Loss_{R+1})\}$$

Where:

- *Rating Lower Bound$_R$* means the lowest Idealized Expected Loss associated with rating *R* and the expected loss range of rating *R* is inclusive of the *Rating Lower Bound$_R$*.
- *Rating Upper Bound$_R$* means the highest Idealized Expected Loss associated with rating *R* and the expected loss range of rating *R* is exclusive of the *Rating Upper Bound$_R$*.
- *R-1* means the rating just above *R*.
- *R+1* means the rating just below *R*.
- The Rating Lower Bound for Aaa is 0% and the Rating Upper Bound for C is 100%. These are not derived using the formula.

Source: Moody's Investors Service

Other Considerations

Along with our asset, structural and liability analysis, we consider other quantitative and qualitative factors in our credit analysis such as the analytical differences, legal risks, country ceilings, and environmental, social and governance (ESG) considerations.

Legal Risks

We assess legal risks that may affect expected losses for investors. In particular, we consider (i) the bankruptcy remoteness of securitization SPEs and (ii) potential legal consequences of the sponsor's bankruptcy. We review legal opinions at closing to inform our views on the key legal risks identified in a transaction and, in consideration of these risks, may position ratings at lower levels than would otherwise be achieved.

Bankruptcy Remoteness of Securitization SPEs

We analyze whether each securitization SPE is bankruptcy remote such that the likelihood of (i) a bankruptcy filing by or against it or (ii) substantive consolidation – that is, the pooling of the issuer's assets and liabilities with those of a bankrupt affiliate – is so low that it has no rating impact. If we determine that the issuer is not bankruptcy remote, we assess the potential rating impact on a case-by-case basis according to the likelihood of bankruptcy and the possible negative consequences for investors.[10]

Consequences of the Sponsor's Bankruptcy

We assess whether, in the event of the sponsor's bankruptcy, any securitized assets may be used to satisfy the claims of general creditors of the bankruptcy estate or otherwise become unavailable to the issuer. Our analysis of this risk may include a review of any applicable considerations such as (i) the likelihood that a transfer of assets to an SPE may be subject to clawback or recharacterization, (ii) the possibility that any security interest granted by the sponsor to an SPE will not enable full and timely access to securitized assets, (iii) whether any liabilities of the sponsor may be assumed by an SPE in connection with the transfer of

[10] For more information, see our cross-sector methodology that describes our bankruptcy remoteness criteria for special purpose entities. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

securitized assets and (iv) to what extent any collections on securitized assets may be commingled with the sponsor's insolvency estate.

Hedge Counterparties

We analyze the rating impact of exposures to hedge counterparties including assessing the probability of a transaction becoming unhedged and deriving additional potential losses. As part of our analysis, we may conclude that we adjust the ratings to reflect the linkage and additional loss.[11]

Local Currency Ceiling Considerations

The country in which the transaction's assets, originator, or issuer is located could introduce systemic economic, legal or political risks to the transaction that could affect its ability to pay investors as promised. We usually incorporate such risks into the analysis by applying our local currency ceilings (LCC).[12]

Environmental, Social and Governance Considerations

Environmental, social and governance (ESG) considerations may affect the ratings of an operating company securitization. We evaluate the risk following our cross-sector methodology that describes our general principles for assessing these ESG issues[13] and may incorporate it in our analysis.

Monitoring

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

We generally apply the key components of the approach described in this report when monitoring transactions, except for those elements of this methodology that could be less relevant over time, such as the review of the legal structure. We typically receive, on a periodic basis, transaction-specific performance data which we use to monitor transactions.

When monitoring the performance of operating company transactions, we review the actual asset revenues relative to our expectations, asset appraisals or evaluations if available, transaction-specific operating metrics such as system-wide revenues or production volume as applicable, and credit performance metrics such as coverage and leverage ratios and any related trigger levels where applicable.

In addition, we monitor a sponsor's creditworthiness and major developments in its business and operations. In particular, a change in a sponsor's rating may prompt a rating action on the structured finance securities if the transaction performance is strongly linked with its sponsor. A material change in any other factors may prompt further analysis and, if needed, running of a model with updated assumptions.[14]

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

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

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

[14] 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: Intellectual Property Securitizations

In this appendix, we describe aspects of our asset-level analysis, the related modeling and structural considerations that we assess when analyzing a securitization backed by intellectual property (IP).

Asset Overview

Assets included in an IP securitization are diverse and include cash flows from established contracts, patents or rights to future receivables. While IP securitizations depend on business operations, the securitization's collateral is in essence a financial asset rather than the operation of a business. IP assets generally have intrinsic value irrespective of the operation. IP assets also are generally easier to service by third parties compared to assets in operating company securitizations. When IP securitizations are backed by future assets (rather than future cash flows of existing assets), however, our analysis is more similar to that of a standard operating company securitization, and we closely review the potential linkage to the sponsor. Below are some examples of the IP assets considered in securitizations.

Pharmaceutical Patents

Pharmaceutical IP transactions securitize licensing fees from patented products. These transactions are typically backed by fees generated by multiple pharmaceutical products. The products are generally on the market for several years, which facilitates our revenue assessment. Pharmaceutical products are often global, and revenues may be generated in a variety of currencies.

The products backing the royalty pools usually address a range of ailments, which helps diversify portfolio income. However, the pools are often "lumpy," with a few products sometimes accounting for the bulk of cash flows. A portion of the drugs represented in the IP portfolios that we analyze have been biologics – drugs synthesized in or by living organisms. Biologics are typically less susceptible to competition from generic versions than small molecular drugs, which are chemically synthesized.

Film Royalties

Film transactions may securitize cash flows from as few as 10 films, an entire studio portfolio, or library with hundreds of films. Along with royalties from the films themselves, transactions may also include cash flows from digital rights (including online streaming services) and physical sales. Also, book rights, trademarks, contracts with third parties to show or stream portions of a film portfolio, copyrights and any IP related to the foregoing (such as merchandising) could be part of the securitized portfolio.

Generally, the more films in a securitized portfolio, the less variable the cash flows. Contributing film royalties from an entire studio portfolio limits the risk of "cherry-picking" the most attractive films while contributing weaker film rights to the securitized pool. Film transactions that include fully produced films may still carry some risk in the case one or more of the films have not yet been released.

Music Royalties

Music IP transactions may be backed by royalties from individual recording artists, a set of artists, or an entire recording studio portfolio. Transactions may also securitize music publishing royalties owed to songwriters. Royalties may be owed, for example, each time a song is "covered" by another artist, played on the radio, used in a commercial or performed in concert.

The cash flow from a song typically peaks within a year or two of its release. Over the years, cash flows may be song-specific, some may subside, others may remain more stable. Though cash flows are lower during the tail period, they are also more predictable.

Licensing Fees

The most common licensing-fee transactions are for apparel brands. For example, an apparel manufacturer securitizes license agreements for the use of its trademarks on clothing and accessories. Other types of licensing fees may also back IP securitizations, such as entertainment brands or virtual print fees.

We apply our analysis to many different asset types with similar characteristics, including book publishing rights, trademarks, patents and licensing agreements, endorsement agreements and sports contracts.

Asset-level Analysis and Related Modeling

Where relevant, we seek insights from sector credit analysts to inform our asset analysis and modeling.

Historical Data Analysis and Valuations

Our analysis of IP securitizations typically begins with a review of historical data on the cash flows generated by the IP backing the transaction. In some cases, such as drug IP ABS, it may be possible to observe the cash flow streams from the actual assets in the portfolio. In others, it may only be possible to review the performance of similar assets that meet transaction eligibility criteria.

For transactions in which some of the IP has yet to be created, we may base future estimates, in part, on several years of data covering the cash flow and costs associated with similar IP developed in the past. We may also use valuations from reputable third parties.

Market Trends

In addition to our review of the historical record, we consider the market environment and trends for the IP assets. For IP transactions, we typically will also consider cash flow projections provided by the sponsor, servicer or a third party, if available. We generally haircut such projections in our analysis to evaluate the implications on the rated securities. For transactions that securitize flows from entertainment IP, such as music and film assets, changes in customer tastes or technology may affect future cash flows and costs.

In some cases, we consider "cliff effects" (i.e., sudden cash flow declines) that can cut off revenues from one or more products. This is particularly relevant for drug patent transactions since certain drugs can be withdrawn from the market or lose substantial market share when a competing product is introduced.

Modeling

We typically use a simulation or scenario analysis to project a transaction's cash flows. The parameters and assumptions vary depending on the asset type. In our cash flow analysis, we may include the default probability of a licensee, sponsor, servicer or other parties, and the resulting impact to cash flows upon such default and cliff risk, if applicable.

We base our cash flow analysis on in-place contracts, the historical performance of the IP pool, the input of our sector credit analysts and, in some cases, projections from the sponsor or third party. Under certain circumstances, we may not simulate cash flows – for example, when the transaction has a strong linkage to the sponsor's creditworthiness and the structured finance ratings are linked to the sponsor's rating.

For some transactions, we may focus our analysis on future product sales which, in conjunction with royalty/license rates, determine cash flow. In other cases, such as film portfolio securitizations, both costs and revenues are relevant because the transaction is entitled only to the amounts net of certain expenses or costs.

For transactions including future revenues, for example, future film rights transactions, we may assess revenues using an expected revenue evolution for future IP. We may, for example, project the number and revenues of new films to be added to the portfolio each quarter.

Some transactions, including those with drug patent receivables, could include foreign currency revenues. We assess foreign exchange risk on a case-by-case basis, for example, by stressing foreign currency revenues.

The measurement of over-collateralization in IP securitizations is complex because the value of the assets and the associated revenue streams are subject to considerable uncertainty. In some transactions, a qualified third-party appraiser will provide the valuation.

Monitoring

We generally apply the key components of the approach described in this appendix when monitoring IP securitizations, except for those elements of this methodology that could be less relevant over time, such as the review of the legal structure.[15]

[15] For additional information, see the "Monitoring" section for operating company securitizations.

Appendix B: Structural Features in Operating Company Securitizations vs. Corporate Analysis

Among all structured finance transactions, operating company securitizations are the closest to corporate debt offerings. Yet there can be differences between the rating of a company's secured debt and the rating of securities issued in its operating company securitization. There are several reasons why a sponsor's operating company securitization's rating could, under certain conditions, be higher than its secured debt's rating.

In evaluating the credit strength of the sponsor of an operating company securitization, we refer to the sponsor's rating.[16] We typically apply a rating differential when rating securities issued by a company to reflect each security's priority of claim relative to other securities of the company, although various securities of the same issuer may have cross-default provisions. Corporate debt offerings also usually have significant refinancing risk.[17]

By contrast, structured finance ratings (including operating company securitizations) are typically focused on the expected loss of a particular security, issued in a particular principal amount with a particular yield and term to maturity, secured by a specific amount and type of collateral and often with limited refinancing risk.[18] In transactions with issuance of multiple classes of debt, it may be possible to achieve ratings substantially above the sponsor's rating by issuing senior classes that have significantly lower leverage than a sponsor's corporate bonds assuming no cross default among the various classes of debt.

Because of the focus on the specific collateral pool backing a securitization, and on the extent to which that pool is leveraged, operating company securitizations typically have a number of structural features that limit or protect the rated securities against losses. These structural features include bankruptcy remoteness, control over the sponsor's activities, the possibility of manager transfer, the possibility of asset sale, limits around additional indebtedness and limited refinancing risk. Those features are described in more detail in the "Structural Analysis" section of this methodology. We review structural features included in an operating company securitization in detail as they may allow a rating committee to determine ratings that are higher than the ratings of a sponsor's other corporate debt instruments.

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

17 For more information, see our methodology on notching corporate instrument ratings. A link to a list of our cross-sector methodologies can be found in the "Moody's Related Publications" section.

18 For more information, see the discussion of Idealized Probabilities of Default and Expected Losses in *Rating Symbols and Definitions*. A link can be found in the "Moody's Related Publications" section.

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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