MOODY'S
INVESTORS SERVICE

RATING METHODOLOGY

Rental Vehicle Securitizations Methodology

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This rating methodology replaces *Moody's Global Approach to Rating Rental Fleet Securitizations* published in July 2020. In the update, we incorporated into our analysis the possibility of a partial vehicle fleet liquidation upon a sponsor's Chapter 11 bankruptcy. We clarified certain base case analytical assumptions and illustrated how we use these assumptions to mimic a partial fleet liquidation in the event of a sponsor's Chapter 11 bankruptcy. We also made editorial updates to enhance readability.

Scope

This rating methodology applies to securities backed by fleets of rental cars and trucks (rental vehicles).

In this methodology, we explain our global approach to rating asset-backed securities (ABS) backed by rental cars and trucks, including quantitative and qualitative factors that are likely to affect rating outcomes in this sector. In these securitizations, the sponsor – a company renting cars and/or trucks – leases the vehicles from a special purpose entity (SPE), which owns the vehicles and issues the ABS. The securities are generally repaid through a combination of lease payments from the sponsor, vehicle sales, and/or refinancing proceeds. We describe key differences between rental car and rental truck ABS in the "Rental Truck ABS" section.

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

THIS METHODOLOGY WAS UPDATED ON MARCH 24, 2022. WE HAVE UPDATED THE HEADERS IN EXHIBIT 9.

Rating Approach

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

Key Risks

The primary risk in an ABS transaction backed by rental cars and trucks is that the sponsor may default on its obligation to make its required lease payments to the issuing SPE for payment on the securities. Credit enhancement in rental vehicle securitizations is primarily over-collateralization in the form of vehicles and is measured by the net book value of the rental fleet as set out in transaction documents. If a sponsor defaults, the main risk is that the funds the issuer can raise by disposing of the vehicles will not be sufficient to make the required payments on the ABS by the securities' legal final maturity dates. Many rental car transactions include both program and non-program vehicles. Program vehicles are subject to a contract with the vehicle manufacturer that gives the issuer the right to return the vehicles to the manufacturer for a pre-specified price and time. If the manufacturer does not honor its obligation to repurchase the vehicles, the servicer or disposition agent sells them in the used-vehicle market.[1] For non-program vehicles, the manufacturer has no obligation to repurchase the vehicles.

For program vehicles, a key factor in terms of disposal risk is that the manufacturer will not honor its obligation to repurchase the vehicles. For non-program vehicles – and for program cars in instances in which the manufacturer does not honor its repurchase obligation – the risk depends mainly on:

- how the sponsor sets the vehicle book values in the securitization (as constrained by the transaction documentation).
- volatility of used-vehicle prices.
- how long it takes the disposition agent to liquidate the vehicles.
- the potential impact of a manufacturer's bankruptcy on its vehicles' resale prices.

Rating Analysis Framework

Our rating approach combines an analysis of the factors that can affect the asset values with an analysis of the securitization structure to determine the payments that investors in each rated security are likely to receive. Specifically, we use a Monte Carlo simulation model to project pool loss and any resulting loss to investors. The model incorporates the key risks to asset values either by simulating the factor from a probability distribution or by applying a stress to the value of the factor.

In each scenario, we first simulate whether the bankrupt sponsor defaults on its lease payments. Exhibit 1 shows the potential scenarios upon a sponsor bankruptcy, considering both Chapter 7 and Chapter 11, and the possibility for the sponsor to accept or reject the lease in a Chapter 11 scenario. It also illustrates the case that, upon a sponsor default, only a portion of the sponsor's fleet may be liquidated in certain situations. For example, a bankruptcy court may approve interim resolutions between the sponsor as lessee and the ABS investors to dispose of only a portion of the fleet vehicles and/or make a smaller payment than the lease's contractual payment. Such agreements may have the same effect as a partial fleet liquidation.

[1] Specifically, program vehicles are subject to contracts with the vehicle manufacturer whereby the manufacturer guarantees the vehicles' repurchase price, resale value or minimum depreciation at pre-set prices according to the program agreement's negotiated terms, regardless of the vehicles' current market value. Consequently, the program agreement determines the vehicles' value unless the manufacturer defaults on its program obligations. Such a default exposes program vehicles to market value risk.

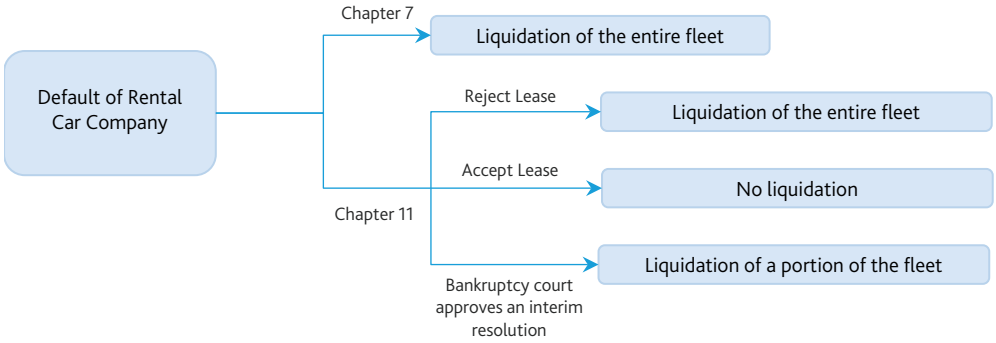
If the sponsor does not default, we assume investors are paid in full. If the sponsor defaults, we simulate whether each manufacturer also defaults and consider different paths for the program and non-program vehicles (see Exhibits 2 and 3). If the sponsor has already defaulted, we assume a 100% probability of a full or partial fleet liquidation. We may consider qualitative factors in our analysis based on the circumstances of the sponsor's bankruptcy.

Our quantitative simulation analysis results in a model output. In assigning a rating on a security, we may consider a variety of qualitative factors, including the results of additional sensitivity analyses; structural idiosyncrasies; our legal, sovereign and operational risk analyses; and other qualitative or quantitative factors that a rating committee may deem relevant. As such, the model output may differ from the assigned rating. A rating committee ultimately assigns our ratings, taking into account the unique characteristics of each transaction.

The following exhibit shows the potential scenarios upon a sponsor bankruptcy, considering both Chapter 7 and Chapter 11, and the possibility for the sponsor to accept or reject the lease in a Chapter 11 scenario. Although our Monte Carlo simulation model considers two simulation paths (liquidation of the entire fleet/no liquidation), the probabilities associated with such simulation paths allow us to mimic a partial fleet liquidation.

EXHIBIT 1

Potential Scenarios Upon a Sponsor Bankruptcy

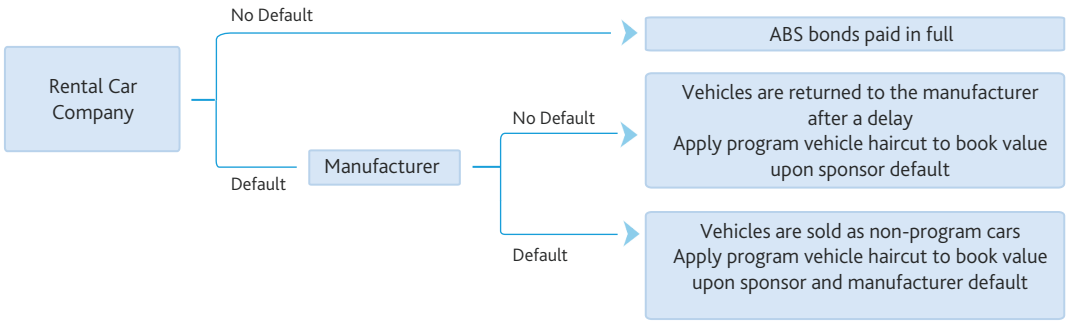


Source: Moody's Investors Service

If the sponsor is a large entity with a strong competitive position, we typically assume a high probability of Chapter 11 in case of sponsor bankruptcy of say 80%, and a relatively high probability of the sponsor accepting the lease in a Chapter 11 bankruptcy of say 75%, owing to the fleet's importance to the sponsor's operations. As a result, we end up modeling a 40% probability of entire fleet liquidation upon bankruptcy (i.e., 80% * 25% + 20%). In the event of a Chapter 11 reorganization, this is also equivalent to modeling a partial liquidation of 25% of the fleet (i.e., 100% * 25%). The following exhibit illustrates the possible simulation paths for program vehicles depending on whether the manufacturers default.

EXHIBIT 2

Possible Simulation Paths for Program Vehicles

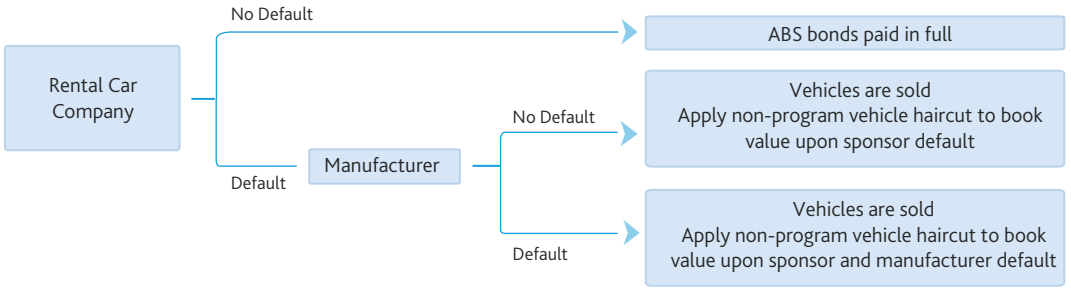


Source: Moody's Investors Service

The following exhibit illustrates the possible simulation paths for non-program vehicles depending on whether the manufacturers default.

EXHIBIT 3

Possible Simulation Paths for Non-Program Vehicles



Source: Moody's Investors Service

For non-program vehicles, we assume that following a sponsor default, the disposition agent sells all, or a portion, of the vehicle fleet in the used-vehicle market, and we determine their assumed recovery values by applying a haircut to the vehicle book values at the time of the sponsor default. In our modeling, either we use fixed haircuts, or we simulate haircuts with a distribution that addresses the potential variability associated with the fleet disposal. The two approaches are similar in that our fixed haircut assumptions represent a certainty-equivalent to the haircut distribution. The stressed fixed haircut assumption is, therefore, typically greater than the mean of the haircut distribution for high target ratings. Our assumed haircuts, whether fixed or simulated, reflect the potential effects of:

» the net book values of the vehicles overstating their market values.

» vehicle depreciation during the automatic stay in a sponsor bankruptcy[2] and the subsequent vehicle liquidation period.

[2] Here the term "bankruptcy" is used in a general sense to cover situations which include sponsor reorganizations and insolvencies.

» vehicle theft or damage during the bankruptcy stay and liquidation period.[3]

» the sale of a large number of vehicles in the defaulting sponsor's rental fleet over a short period reducing used-vehicle values during that period.

» a bankruptcy of the vehicle manufacturer depressing used-vehicle values for that manufacturer.

For program vehicles, we differentiate our assumptions based on whether the manufacturer also defaults. If the manufacturer does not default, we assume the manufacturer buys back its program vehicles in the fleet, with an assumed time lag that incorporates both the potential automatic stay following the sponsor's bankruptcy and the time it might take to marshal the vehicles for return to the manufacturer. This lag could result in a loss on those vehicles because the manufacturer's buyback price typically declines as a vehicle ages. If the manufacturer defaults, we assume the manufacturer does not buy back its program vehicles in the rental fleet and the disposition agent disposes of the manufacturer's program vehicles in the used-vehicle market. We determine the assumed recovery value of those vehicles by applying a haircut to book values at the time of default, similar to that for non-program vehicles.

For each model simulation, we calculate the pool loss, if any, and then, taking into account the capital structure, determine the extent of any investor loss. We then calculate the average investor loss across all the simulations to determine the expected investor loss. We compare that expected investor loss to our benchmarks for each rating level to determine the model output.

Asset-level Analysis and Related Modeling

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

Risk of Sponsor Default

In our analysis of ABS backed by rental cars and trucks, we assume a security may default only if the sponsor defaults on its lease obligations. In theory, even if the sponsor does not default on the lease payments, there may be a shortfall to investors if the sponsor does not refinance the securitization at some point during the amortization period and if the funds that can be raised from selling or returning the vehicles are not sufficient to pay off the ABS. However, we deem it highly likely that the sponsor, if solvent, will attempt to refinance the securitization in order to maintain possession of its rental fleet and continue its business. Therefore, in situations in which the sponsor is solvent and continues to make its lease payments, we expect a negligible risk of a shortfall to investors.[4] If a sponsor default leads to a liquidation, we assume the liquidation of all or a portion of the sponsor's rental fleet and do not rely on the sponsor's ability and likelihood to refinance the securitization.

We typically use the probability of default from our Idealized Default Probability table associated with the rating[5] of the sponsor as our measure of the likelihood of a sponsor's bankruptcy. Typically, we expect the probability of a sponsor's bankruptcy to overstate the probability of the sponsor's default on its lease

[3] The lessees are typically required to maintain minimum insurance coverage in amounts mandated by applicable state law. The lessees may, in lieu of maintaining such insurance with insurers, self-insure all or a portion of the required insurance coverage. We do not expect that a lessee in default would honor its self-insurance obligation. Additionally, third-party insurers may challenge a claim or delay payment beyond the legal final payment date for a transaction. For these reasons, we do not give credit to insurance proceeds for vehicle theft or damage that occurs during the liquidation period.

[4] In special situations where, for example, the securitized fleet represents a small fraction of a sponsor's overall fleet and preserving the ability to fund the fleet through securitization would be less important to the sponsor, we may also consider the risk of a shortfall to investors in cases where the sponsor does not default.

[5] For non-investment-grade sponsors, we would use the sponsor's probability of default rating (PDR). For investment-grade sponsors, we would use the long-term senior unsecured rating as a proxy for the PDR. In limited circumstances we may use a private monitored rating or rely on a credit estimate (to the extent it is a low-volatility credit estimate) in the absence of a rating. For more information, see our cross-sector methodology that discusses the use of credit estimates 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.

payments because the bankrupt sponsor may choose to accept its lease payment obligations to retain the use of the fleet and stay in business. As a result, in assessing the probability that a bankrupt sponsor will default on its lease payments, we consider the likelihood of a reorganization relative to liquidation and the likelihood of accepting or rejecting the operating lease in a reorganization scenario. If the sponsor accepts the operating lease in a reorganization, we assume the ABS would not experience a loss. During the reorganization process, we also consider interim agreements approved by a bankruptcy court between the sponsor as lessee and the ABS investors to dispose of only a portion of the fleet vehicles and/or make a smaller payment than the contractual lease payment. Such agreements may have the same effect as a partial fleet liquidation.

When assessing the likelihood of entering into a reorganization and accepting or rejecting the operating lease in this circumstance, we consider the sponsor's competitive position within the industry and its securitized fleet size relative to its overall fleet. For large sponsors who securitize a large portion of their fleet, the probability that the sponsor will default on its lease payment may ultimately be equivalent to the default rate associated with a rating several notches above the sponsor's rating.[6] However, we may directly use the probability of bankruptcy associated with the sponsor's rating (without any adjustment) as the probability of lease default if we expect a higher likelihood that the sponsor will file for liquidation and/or that it will reject the operating lease in a reorganization.

When measuring the probability of sponsor bankruptcy based on our rating and Idealized Default tables, we typically use a five-year horizon for all revolving rental fleet transactions issued from the same master trust structure, regardless of the remaining transaction term.[7] Similarly, as discussed in the section "Potential Losses to Investors and the Model Output," we compare the calculated expected loss against our Idealized Expected Loss benchmarks at a horizon of five years.[8] Because our Idealized Default Probability and Expected Loss tables increase and decrease together with longer or shorter horizons, using a fixed horizon to model all transactions allows us to adopt a simple approach without losing substantial precision.

If a sponsor is already in bankruptcy, we typically assume a 100% probability of sponsor default. We may consider qualitative factors in our analysis based on the circumstances of the sponsor's bankruptcy.

Risk of Manufacturer Default

In evaluating the risk that each manufacturer will default on its obligation to repurchase its program vehicles in the securitization pool, we generally use the probability of default implicit in the manufacturer's rating.[9] For program vehicles, a manufacturer's bankruptcy exposes the vehicles to market value risk, which the vehicles would not otherwise have if the manufacturer had honored its program agreement. For program and non-program vehicles, manufacturer bankruptcies may negatively impact the vehicle values.

For revolving transactions, we typically derive the probability of manufacturer default using a one-year horizon, regardless of the remaining transaction term.

[6] Depending on the sponsor's rating level – e.g. lowly-rated sponsors will generally see a higher uplift than highly rated sponsors in the context of our Idealized Default Probability tables.

[7] Typically, rental car trusts issue transactions with a term of three to seven years. We may apply alternate horizon assumptions for transactions in which (1) the transaction term is much longer than five years or (2) the transaction does not have a revolving period.

[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 non-investment-grade manufacturers, we would use the manufacturer's probability of default rating (PDR). For investment-grade manufacturers, we would use the long-term senior unsecured rating as a proxy for the PDR. In certain cases where the manufacturer is unrated, we may use a credit estimate in the absence of a rating. For more information, see our cross-sector methodology that discusses the use of credit estimates 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.

Our one-year default horizon for manufacturers reflects our consideration that a transaction is at risk of a manufacturer default only if the default occurred shortly before or after the sponsor default. Before this window, revolving rental fleet transactions are typically structured to mitigate the negative consequences of the various disposal risks associated with manufacturer default (see "Common Structural Features" below). Manufacturer defaults that occur after the fleet liquidation following the sponsor default would have no impact on the transaction. For transactions with revolving periods, rental cars are also usually disposed of after a short holding period, which also mitigates long-term disposal risks resulting from a manufacturer's bankruptcy.

We may apply a different default horizon assumption for transactions without a revolving period or sufficient structural features to mitigate the risk of manufacturer default before the sponsor default.

Disposal Value of the Fleet

If the sponsor defaults on the ABS, any loss to investors depends primarily on the difference between (1) the remaining book value of the vehicles in the securitization and (2) the actual prices at which the vehicles in the rental fleet can be sold or, for program vehicles, returned to the manufacturer. Other factors, such as the fleet composition in terms of vehicle types and manufacturers and the capabilities of the sponsor, servicer, and disposition agent, can have an impact on that difference in values.

Non-Program Vehicles

In our analysis, we apply haircuts – either fixed or simulated – to the book value of the non-program vehicles in the rental fleet to address the following factors.

FUTURE VEHICLE BOOK VALUES

For each non-program vehicle in the securitization pool, the sponsor estimates the book value at each future point in the vehicle's life based on its original book value and the sponsor's assumed book depreciation rate. In our analysis, we consider scenarios in which the book value accurately reflects the fleet market value at the time of sponsor default, as well as stress scenarios in which the sponsor has underestimated the vehicles' true depreciation. In our most stressful scenarios, we assume the sponsor depreciates non-program vehicles at the minimum depreciation rates (typically expressed as a percent of initial capitalized cost) required by the transaction documents and assess the extent to which the minimum depreciation rates may result in overestimates of the vehicles' actual market values over the period just before a sponsor default, based on our analysis of historical stressed market depreciation rates. We use the scenarios above to inform our assumptions on the haircut distribution when we apply simulated haircuts or our stressed haircut levels when we use fixed haircuts.

DEPRECIATION DURING THE LIQUIDATION PERIOD

After a sponsor defaults, we assume it takes some time to sell non-program vehicles in the used-vehicle market. Furthermore, a bankruptcy stay can delay the sale of the vehicles. During the time between the sponsor bankruptcy and the vehicle disposals, the vehicles will likely depreciate further. Our haircut to the book value at the time of sponsor default incorporates potential additional depreciation, and considers that the depreciation during the liquidation period – during which the vehicles are not being driven – is likely to be lower than normal. The average level and potential volatility are based on our analysis of historical data on vehicle depreciation rates and estimates of time to liquidate the vehicles. This may vary across transactions depending on regional bankruptcy regimes, liquidity of used-car markets, and the logistical difficulties of marshaling the vehicle fleet.

IMPACT OF LIQUIDATION OF AN ENTIRE RENTAL FLEET OR A PORTION OF THE FLEET

If a sponsor defaults on its lease payments, either the servicer, if able, or the disposition agent liquidates all, or a portion, of the sponsor's fleet within a concentrated period. This could depress used-vehicle prices,

especially for large fleets. A fleet disposition may also coincide with challenging market conditions, including (1) lower demand for used vehicles resulting from the reduced mobility of the population and/or a recession that squeezes consumers' finances and disposable income, (2) a high supply of used vehicles available for sale as highly over-fleeted rental car companies sell large portions of their fleets in response to lower utilization, and (3) fragile conditions in the wholesale used-vehicle market and auction channels. As a result, our haircut to the book values of non-program vehicles also includes the effect of a fleet fire sale. To determine the discount, we compare the size of the sponsor's fleet with the size of the appropriate portion of the overall used-vehicle market (i.e., similar age, model types, etc.).

VEHICLE THEFT OR DAMAGE

Vehicles may be stolen or damaged during the liquidation period. We apply a discount to book values to represent that risk, based on our sponsor-by-sponsor assessment of the risk. For example, theft prevention policies may vary by sponsor.

DEPRECIATION RESULTING FROM A MANUFACTURER'S BANKRUPTCY

A vehicle manufacturer's bankruptcy may have a negative effect on the values of the manufacturer's used vehicles because it could damage the brand's reputation, or customers may fear that the availability of vehicle parts and service will decline. Consequently, we apply an additional haircut to reflect that risk. The haircut depends on the probability of bankruptcy implicit in the manufacturer's rating and our assessment of the likelihood that the manufacturer will continue operating in bankruptcy within the respective regional market (i.e., in a reorganization), in which case the impact on used-vehicle values is likely to be lower. This assessment may vary based on the jurisdiction of the manufacturer (due to, for example, differing bankruptcy regimes), as well as the jurisdiction of the transaction.

Program Vehicles

For program vehicles, if the manufacturer does not default, we apply a haircut to account for the lower buyback price the manufacturer will pay because the vehicles will be turned back several months after the default of the sponsor. The delay incorporates both the potential stay due to the sponsor's bankruptcy and the time it may take to marshal the vehicles and return them to the manufacturer.

If the manufacturer does default, we assume the disposition agent sells the manufacturer's program vehicles in the used-vehicle market, the same as non-program vehicles. As a result, we typically apply a haircut similar to that described above for non-program vehicles when the manufacturer defaults.

Fleet Composition at Liquidation

The risk factors that can affect the fleet disposal value depend, in part, on the types of vehicles in the fleet at liquidation. Because the typical rental car securitization has a revolving structure, where new vehicles are purchased during the revolving period as lease payments are received and older vehicles are disposed of, the exact fleet composition at liquidation is uncertain at the time of rating.

To account for the additional risk resulting from the uncertain fleet composition, we stress the fleet composition by creating assumed pools of manufacturers of the program and non-program vehicles that are generally less diversified by manufacturer than the recent fleet, with a conservative credit quality mix. (See Appendix 2 for an example of an assumed pool.) We base the makeup of the assumed pools on historical fleet composition data and consider the transaction's concentration limits on various types of vehicles. (In some cases, the required credit enhancement may adjust dynamically to the changing composition of vehicles. See "Dynamic Credit Enhancement" below.) Our assumed pool reflects our qualitative assessment of the risk for fleet vehicle composition to migrate to weaker credit quality levels and/or highly concentrated levels.

Although we assess the concentration limits on the manufacturers provided in the documentation, we do not typically create our modeled fleet composition based on the weakest composition permitted by the transaction. Most transactions allow over 50% concentration for certain manufacturers, while actual concentrations have been much lower.

The most important fleet-composition characteristics are as follows:

PROGRAM VERSUS NON-PROGRAM VEHICLES

Program vehicles pose less risk than non-program vehicles because the issuer has the option to return the program vehicles to the manufacturer. In scenarios in which the manufacturer has defaulted on its repurchase obligations, our analysis of program and non-program vehicles is typically the same. This is because the distinction between program or non-program in and of itself will not impact a vehicle's sale value, though its securitization book value may be different in certain circumstances. When sufficient information is available to assess the difference between book values of program and otherwise identical non-program vehicles, we may apply a different haircut to the program securitization book value. The credit enhancement level may also differ between the program and non-program vehicles, as we discuss in more detail in the "Structural Analysis and Liability Modeling" section. Our assumed percentages for the program and non-program vehicles are based on a conservative assessment of the historical fleet composition data and consider any concentration limits in the transaction documentation.

CREDIT QUALITY OF THE MANUFACTURERS

As noted above, a manufacturer's bankruptcy can have two effects on a securitization's performance:

1) For program vehicles, instead of realizing the vehicle's turn-back value at the end of the liquidation period through repurchase by the manufacturer, the issuer is exposed to market value risk because the disposition agent needs to sell the vehicle in the used-vehicle market, at an uncertain price.

2) For all vehicles of that manufacturer sold in the used-vehicle market (i.e., both for program vehicles for which the manufacturer has defaulted on its repurchase agreement and for non-program vehicles), a bankruptcy would likely have a negative effect on the used values of the vehicles, as described in the "Non-Program Vehicles" section under "Disposal Value of the Fleet."

USED VEHICLES

The rental vehicle fleet may include vehicles that the issuer purchased used, rather than new, from the manufacturer, as permitted by the transaction documentation. Our assessment of the disposal risk of used non-program vehicles is generally the same as for new non-program vehicles. All things being equal (such as the minimum depreciation rate applied to the vehicles), we would apply the same haircut to the book value of used non-program and new non-program vehicles to address the risk factors detailed in the "Non-Program Vehicles" section under "Disposal Value of the Fleet."

MANUFACTURER RECEIVABLES

A portion of the rental vehicle fleet may also consist of manufacturer receivables resulting from program vehicles the issuer has returned to the manufacturer, but the manufacturer has not yet paid for. If the manufacturer does not default and the vehicles' certificates of title remain in the name of the securitization, we typically assume the manufacturer's receivables are paid in full. If the manufacturer defaults, we typically assume the securitization recovers nothing from manufacturer receivables prior to the legal final payment date, due to the high uncertainty around the potential distribution to unsecured creditors in a bankruptcy scenario. Credit enhancement levels might also differ between receivables and vehicles, as we discuss further in the "Structural Analysis and Liability Modeling" section.

Administrator, Servicer, and Disposition Agent

The sponsoring rental car company, as the securitization's servicer, actively manages the fleet, acquiring, maintaining, and depreciating the vehicles. In its role of disposition agent, it disposes of the non-program vehicles and administers the program vehicles. Finally, in its role as administrator for the issuer, the sponsor prepares monthly servicing reports and directs the indenture trustee to make payments on the ABS.

We evaluate the sponsor's experience in acquiring, maintaining, and depreciating the fleet vehicles and in managing the gain or loss on vehicles at disposition. We assess the experience and expertise of the sponsor's accounting function and the effectiveness of its auditing practices to help ensure that the monthly depreciation payments on the vehicles are calculated correctly, thereby minimizing residual value loss on the vehicles when sold. We also assess the need for, and adequacy of, the transaction's backup administrative and liquidation arrangements, as discussed in the "Operational and Payment Disruption Risks" section.

Pool Loss Modeling

We use a one-period Monte Carlo simulation model to analyze the potential losses from the sale of the fleet. In each simulation, we model whether the sponsor defaults and whether the manufacturers default, incorporating our estimates of the correlations among the sponsor and the various manufacturers. We use a correlation approach consistent with the approach we use to evaluate other pools of corporate credit. However, since all of the entities are in the automotive industry, the correlations are higher than those we would use if we were analyzing a pool of obligors diversified across industries. We typically use a correlation of 10% among the sponsor and vehicle manufacturers and 25% among all vehicle manufacturers.[10]

If, in our simulation, the sponsor does not default on the lease, we assume investors are paid in full. If the sponsor does default in our simulation, we calculate the disposal value of the rental fleet, based on (1) the types of vehicles we assume are in the fleet (including the proportions of program vehicles vs. non-program vehicles), (2) whether the manufacturer is simulated to default, and (3) for program vehicles in scenarios in which the manufacturer defaults and for non-program vehicles in all scenarios, our assumptions regarding haircuts to book values.

In assessing the probability that a bankrupt sponsor defaults on its lease payments, we consider the likelihood of a reorganization versus a liquidation, the likelihood of the sponsor accepting or rejecting the operating lease under a reorganization and consider several sensitivities.

Additionally, when a sponsor defaults, a bankruptcy court may approve interim resolutions between the sponsor as lessee and the ABS investors to dispose of only a portion of the fleet vehicles and/or make a smaller lease payment than the contractual payment under the lease. Given this possible outcome, we generally use a 75% probability of the sponsor accepting its lease in full in a Chapter 11 bankruptcy because of the fleet's importance to the sponsor's business operations. Specifically, the 75% probability assumption incorporates the possible disposition of a portion of the vehicle fleet if the bankruptcy court approves, for example, an interim resolution or a restructuring agreement. This assumption was informed by pandemic-driven events that affected the rental car market, such as the drastic and sudden decline in rental car demand and the resulting portion of the fleet that rental car companies disposed.

[10] Our approach is consistent with the correlation approach used to evaluate pools of corporate credit as described in our methodology for rating corporate synthetic obligations (CSOs) where no regional distinctions are made in correlation levels for global industries such as autos. Our correlation assumptions are typically higher than standard correlation assumptions used in MOODY'S CDOROM™ for the auto sector to adjust for overconcentration of the pool in a single sector, autos in this case.

If a sponsor default leads to a liquidation, we assume the liquidation of all or a portion of the sponsor's rental fleet.

Structural Analysis and Liability Modeling

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

Common Structural Features

Credit enhancement in rental vehicle ABS consists primarily of vehicles and a liquidity amount in the form of cash or a letter of credit. The structure includes provisions to either increase credit enhancement or accelerate payments to investors if the fleet value shows indications of weakening. Some of these provisions also help mitigate the disposal risks associated with manufacturer defaults.

Rental car transactions are typically structured as revolving transactions and rental truck transactions as amortizing transactions. In rental car ABS, during the revolving period, investors receive interest but no principal, while during the amortization period, investors receive both principal and interest.

Below we discuss the most common types of provisions and how we view them in our analysis. We discuss structural features specific to rental truck ABS in Appendix 6.

Dynamic Credit Enhancement

In some transactions, the amount of credit enhancement required by the transaction documentation adjusts automatically in response to changes in some characteristics of the vehicle fleet. For example, the required credit enhancement percentage may be higher for non-program vehicles than for program vehicles or for certain manufacturers based on their credit quality. Consequently, in such cases, the total amount of required enhancement adjusts dynamically throughout the securitization's life as the vehicle fleet composition changes.

In our modeling analysis, we assume the credit enhancement in the transaction is consistent with our assumed vehicle fleet, which is stressed to address potential changes in fleet composition. We may also assess the efficacy of the dynamic credit enhancement mechanism in reducing risk and adjust the assumed fleet composition accordingly. For example, the higher enhancement required for non-program vehicles may not offset our assessment of the incremental credit risk associated with these vehicles. In such a case, we typically assume a higher percentage of non-program vehicles in the fleet relative to the historical vehicle fleet composition.

Liquidity Amount

Transaction structures often include liquid funds to cover the risk of non-payment to investors during the liquidation period. Liquidity in transactions is usually in the form of either cash or a letter of credit, which the issuer can draw upon to (1) cover any shortfall in the monthly lease payment to enable a scheduled interest payment on the securities and (2) make the securities' required payment on the legal final maturity date. Typically, the issuer can draw upon the liquidity to pay the securities' principal only after the transaction becomes under-collateralized, ensuring that the liquidity is available to cover security interest during the liquidation period.

The need for liquidity arises primarily from the potential for a sponsor's bankruptcy to interrupt the sponsor's lease payments to the securitization. The liquidity amount is designed to cover security interest and transaction expenses over the period it would take to:

1) Resolve potential legal challenges to obtaining control of the securitized vehicles under applicable insolvency laws and established legal precedent

2) Marshal the vehicles for disposal, either through sale in the used-vehicle market or through the return of program vehicles to their respective manufacturers. The efficiency of the disposal process depends on the transaction's administrative and disposition agent arrangements and the region's legal and regulatory environment.[11]

In our analysis, we assess the adequacy of the transaction's liquidity in relation to the length of potential payment interruptions. In addition, we adjust our assessment of the transaction's liquidity to account for the additional interest rate risk posed by floating rate ABS, if applicable. Monthly lease payments from a sponsor as lessee to an issuer are structured to cover the interest on rental vehicle ABS, whether that interest is based on a fixed or floating rate. Therefore, for floating rate ABS, only when a sponsor defaults will investors directly face interest rate risk. Such risk exposure exists from the point the sponsor defaults until the security's repayment. In that assessment, we evaluate the extent to which any hedge arrangements, such as swaps or caps, mitigate investors' exposure to the risk that the interest rate on the floating rate obligations will increase.[12]

Mark-to-Market and Disposition Test Triggers

The mark-to-market test requires the issuer to mark to market the value of the non-program portion of the fleet on a regular basis; if the current market value falls below the net book value, the required credit enhancement increases by an amount equal to the shortfall. Similarly, the disposition test requires an increase in credit enhancement sufficient to offset actual realized losses on non-program vehicle sales. The two tests are usually specified to interact with one another; the final increase in credit enhancement is the highest amount as determined by the two tests over a given period. The mechanism whereby credit enhancement is increased to its required level is typically (1) paying down outstanding variable funding notes (VFNs) during the revolving period to increase the over-collateralization or (2) increasing the liquidity amount (see the "Liquidity Amount" section above). The lease payments from the sponsor are typically structured to have excess spread equal to 1% to 2% of the fleet net book value annually, which is used to increase credit enhancement if there is a deficiency. The sponsor can also recognize increased vehicle depreciation rates, which would increase the amount of the lease payment and the amount of available credit enhancement for the issuer. The increase in the liquidity amount is automatic, as the required cash reserve amount automatically increases to the extent of any credit enhancement deficiency. Failure to increase the credit enhancement to targeted levels results in early amortization of the securities and eventually a fleet liquidation.

The mark-to-market and disposition tests' ability to mitigate the disposal risk of the non-program fleet varies depending on the specific mechanisms within the tests. For example, the mark-to-market test's definition of a vehicle's market value typically uses a third-party source in the US, such as NADA or Black Book. However, if data from such a source is not available for a particular vehicle or group of vehicles in the fleet, the test may rely on the securitization's net book value, rendering the test ineffective.

Historically, the disposition test has been more effective in monitoring the market value risk in these transactions because it captures realized losses. However, triggering increased credit enhancement may take

[11] See Appendix 4 for a discussion of some of the issues in various jurisdictions that affect the length of potential payment interruptions.

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

longer than the mark-to-market test because the disposition test considers only vehicles the sponsor-servicer has sold, which typically have been in the rental fleet for up to 18 months. The lag versus the mark-to-market test occurs particularly when a sponsor-servicer is selling fewer vehicles because the disposition test result is typically recorded only when the servicer has sold a specified minimum number of vehicles over a certain period.

Notwithstanding these limitations, in our analysis, we generally view these tests favorably because they provide an incentive for the sponsor to depreciate vehicles appropriately and limit the potential loss to a securitization from vehicle dispositions following a sponsor default. In assessing the disposal value risk of a fleet, we examine expected cases, where the fleet's book value accurately reflects the market value at the time of sponsor default, and stressed scenarios, in which the sponsor has underestimated the vehicles' true depreciation.

The tests also help mitigate the impact of a manufacturer's bankruptcy. The transaction documents reclassify program vehicles from a bankrupt manufacturer as non-program vehicles, which typically require a higher level of credit enhancement and would become subject to the mark-to-market and disposition tests.

Revolving and Amortization Periods

Many rental car securitizations have a revolving period during which investors receive interest but no principal, and an amortization period during which investors receive both principal and interest. The sponsor's lease payments to the issuer provide the source of funds to pay the interest on the ABS, in addition to securitization fees and other expenses. The issuer can also use the portion of lease payments representing vehicle depreciation to purchase new vehicles, pay down the ABS principal, or release cash, as permitted by transaction documentation.

During the revolving period, the issuer is prohibited from purchasing new vehicles from a bankrupt manufacturer; given the short holding period of the vehicles in rental car transactions, this feature ensures that exposure to a bankrupt manufacturer will decline quickly. This helps mitigate the impact of a manufacturer bankruptcy on the transaction.

During amortization, the portion of the lease payments representing vehicle depreciation, which the issuer uses to pay down securitization principal, typically is sufficient to pay down only a portion of the outstanding ABS principal. For example, assuming the minimum depreciation rate, the portion of the lease payment representing vehicle depreciation may be sufficient to repay less than 10% of the principal balance over a six-month amortization period. To pay down the remaining principal, the sponsor realizes the value of the vehicles in one or more of the following ways: (1) refinance the pool of vehicles with a new securitization, which is the typical course , (2) sell the vehicles in the used-vehicle market or (3) return program vehicles to the manufacturers. If the ABS principal is not fully paid off by the scheduled end of the amortization period, the disposition agent sells or returns any remaining vehicles to pay off the securitization before the legal maturity of the securities.

Early Amortization Triggers

Early amortization triggers are usually tied to events that indicate a heightened risk for investors, such as if: (1) credit enhancement falls below specified levels, or (2) the sponsor becomes bankrupt or does not make its required lease payments. If such early amortization events occur, the revolving period terminates, and the issuer usually uses all excess funds to pay down the outstanding securities. In a master trust, the sponsor's bankruptcy or failure to make lease payments, among other events, triggers early amortization for all outstanding series.

In our analysis, we view early amortization triggers favorably because it accelerates payment to investors, reducing their exposure to future risks.

Potential Losses to Investors and the Model Output

In each scenario of our Monte Carlo simulation in which the sponsor defaults, we apply the rental fleet disposal value to the different security classes, based on the securitization's tranching and priority of payments, to calculate the loss to investors in each class. We incorporate into that loss calculation the extent to which credit enhancement is available to offset shortfalls arising from deficiencies in fleet value.

We then calculate the expected loss to investors, that is, the average investor loss across all the simulated scenarios. We assess the model output by comparing the security's calculated expected loss to the expected loss benchmarks implied by our Idealized Cumulative Expected Loss Rates table.[13]

For revolving transactions, we apply the benchmark at a fixed time horizon (typically five years), regardless of the remaining transaction term. As discussed in the "Risk of Sponsor Default" section, we use the adjusted sponsor's rating and a specified horizon to infer the probability of default using our Idealized Default Probability tables. Similarly, we compare the expected loss and term of the rental fleet ABS to benchmark levels from our Idealized Cumulative Expected Loss Rates table for each rating category. Because our Idealized Default Probability and Expected Loss tables increase and decrease together with longer or shorter horizons, using a fixed horizon to model all transactions allows us to use a simple approach without losing substantial precision.

We may apply alternate horizon assumptions for transactions whose term is much longer than five years or without a revolving period.

Loss Benchmarks

In evaluating the model output for rental vehicle securitizations, we select loss benchmarks referencing the Idealized Expected Loss table[14] using the Standard Asymmetric Range, in which the lower-bound of loss consistent with a given rating category is computed as an 80/20 weighted average on a logarithmic scale of the Idealized Expected Loss of the next higher rating category and the Idealized Expected Loss of the given rating category, respectively. For initial ratings and upgrade rating actions, the upper-bound of loss consistent with a given rating category is computed as an 80/20 weighted average on a logarithmic scale of the Idealized Expected Loss of the given rating category and the Idealized Expected Loss of the next lower rating category, respectively. When monitoring a rating for downgrade, the upper-bound of loss is computed as a 50/50 weighted average on a logarithmic scale. That is, the benchmark boundaries of loss appropriate for evaluating rating category R are given by:

[13] 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.

[14] 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.

FORMULA 1

$$[1]\ Rating\ Lower\ Bound_R = exp\{0.8 \cdot \log(Idealized\ Expected\ Loss_{R-1}) + 0.2 \cdot log(Idealized\ Expected\ Loss_R)\}$$

$$[2]\ Initial\ Rating\ Upper\ Bound_R = exp\{0.8 \cdot \log(Idealized\ Expected\ Loss_R) + 0.2 \cdot log(Idealized\ Expected\ Loss_{R+1})\}$$

$$[3]\ Current\ Rating\ Upper\ Bound_R = exp\{0.5 \cdot \log(Idealized\ Expected\ Loss_R) + 0.5 \cdot log(Idealized\ Expected\ Loss_{R+1})\}$$

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$_R$*.
- *Initial Rating Upper Bound$_R$* means the highest Idealized Expected Loss associated with rating *R* that is either initially assigned or upgraded, and the expected loss range of rating *R* is exclusive of the *Rating Upper Bound$_R$*.
- *Current Rating Upper Bound$_R$* means the highest Idealized Expected Loss associated with rating *R* that is currently outstanding, 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 Investor Service

Non-Lease-backed Structures

Unlike typical rental vehicle ABS, where the sponsor makes lease payments to the securitization trust, some rental vehicle transactions receive revenues and incur expenses from vehicle leasing to individuals. In this case, we assess the revenues and expenses in addition to the key risks of a standard rental vehicle at the start of the transaction, and the experience and resources of the backup administrator and disposition agent that enables them to effectively take over the responsibilities, if necessary. We also assess whether the transaction has an effective transfer mechanism for those responsibilities and sufficient liquidity reserves to cover related expenses.[15]

Other Considerations

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

Counterparty Risks

We consider and integrate various counterparty-related risks at different stages throughout our credit analysis. More specifically, we consider operational risks, hedge counterparties, , commingling risk, and account banks.[16] Based on our review, we may adjust our assumptions, inputs or model results. If information is limited, we may also adjust the rating level.

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

[16] 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.

Operational and Payment Disruption Risks

The performance of an ABS backed by rental vehicles depends on the capabilities of several parties, such as the servicer, the administrator, and the trustee. In addition, our rating analysis incorporates our assessment of the likelihood that each party continues to be willing and able to perform its duties throughout the life of the transaction and the feasibility and cost of replacing the party at some point in the transaction's life, if necessary.

We assess each party's track record, financial incentives to perform, its management's ability to adapt to changes in the market, and its financial stability. In addition, we assess the backup arrangements for administration and vehicle disposition if the sponsor does not perform its obligations as administrator or its obligation to liquidate the fleet upon default. As part of that analysis, we consider the sponsor's rating, whether backup arrangements for the transaction's administrative and vehicle disposition functions are in place at the start of the transaction, and the experience and resources of the backup administrator and disposition agent that enables them to effectively take over the responsibilities, if necessary. We also assess whether the transaction has an effective transfer mechanism for those responsibilities and sufficient liquidity reserves to cover related expenses.[17]

Legal Risks

Our analysis of a rental vehicle ABS transaction's legal risks focuses on the issuer's legal ability to exercise its ownership or control over the securitized rental fleet if the fleet needs to be liquidated to pay off the securities. Because legal and regulatory frameworks differ across jurisdictions, the legal structures of transactions also differ. Consequently, we tailor our analysis of legal risks to the specific jurisdiction when we analyze a rental vehicle securitization. (See Appendix 5).

Sovereign Risk

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 risk into our analysis by applying the local currency risk ceilings.[18]

Environmental, Social and Governance Considerations

Environmental, social and governance (ESG) considerations may affect the ratings of securities backed by a portfolio of rental vehicles.[19] We evaluate the risk following our cross-sector methodology that describes our general principles for assessing these ESG issues[20] 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 methodology when monitoring transactions, except for those elements that could be less relevant over time, such as a review of the legal

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

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

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

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

structure. We also typically receive transaction-specific performance data, which we use to monitor transactions.

In monitoring ABS backed by rental vehicles, we review the ratings of the sponsor and the manufacturers, trends in the realization of disposal values and other conditions in the used-vehicle market, the proportion of program and non-program vehicles in the fleet, and the proportion of the various manufacturers. We also review qualitative factors regarding the transaction's administrative and vehicle disposition functions. If we detect material changes in any of these factors, we may perform an in-depth analysis to determine the impact, if any, on the rating. That analysis may include a revised Monte Carlo simulation of the transaction, using updated inputs, and a review of the outstanding transaction ratings by a rating committee.[21]

Finally, for surveillance purposes, rating committees will, where appropriate, consider additional factors that they deem relevant.

[21] 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 1: Quantitative Analysis for a Rental Car Transaction Including Indicative Base Modeling Assumptions – Illustrative Example

In this appendix, we present an illustrative example of quantitative portfolio analysis we may conduct when analyzing a rental car transaction. While we would apply the same framework across all jurisdictions, our indicative assumptions reflect typical rental car ABS in the US, Canada, and Australia.

Exhibit 4 shows the sponsor and securitized vehicle fleet characteristics in an illustrative rental car transaction.

EXHIBIT 4

Assumed Sponsor and Fleet Characteristics

Sponsor Rating: B1
Fleet composition: 50% program, 50% non-program vehicles. Composition by manufacturer:

Manufacturer*	Assumed Rating	Program Percentage	Non-Program Percentage
Manufacturer A	A3	30%	25%
Manufacturer B	Baa3	40%	50%
Manufacturer C	B1	30%	25%

* See Appendix 2 for an example of how we built our assumed fleet composition, including our assumed manufacturer rating.

Source: Moody's Investors Service

We use a single-period Monte Carlo simulation model to analyze the losses within the pool based on (1) defaults of the sponsor and the vehicle manufacturers, taking into account correlations in their probability of default and (2) the disposal value of the fleet when the sponsor defaults, which we determined in this example by applying simulated haircuts to the net book value of the fleet.

Our illustrative example in this appendix shows the potential results from a single simulation scenario, where in actuality, a model run consists of thousands of scenarios with different paths.

Default Event Modeling

In our first step, we simulate correlated defaults for the sponsor and the vehicle manufacturers. We infer the probability of sponsor bankruptcy from the rating and our assumed default horizon. In addition, if the sponsor is a large entity with a strong competitive position, we typically assume a high probability of Chapter 11 in case of sponsor bankruptcy of say 80%, and a relatively high probability of the sponsor accepting the lease in a Chapter 11 reorganization of say 75%, owing to the importance of the fleet to the sponsor's operations. As a result, we end-up modelling a 40% probability of entire fleet liquidation upon bankruptcy (i.e. 80% *25% + 20%). In the event of a Chapter 11 reorganization, this is also equivalent to modelling a partial liquidation of 25% of the fleet (i.e., 100% * 25%). We also perform various sensitivity analyses around such probabilities, and the rating committee may decide to use different probabilities, based on the sponsor's country of operation, fleet size and competitive position, terms of legal documentation including the master lease - as well as the circumstances of the sponsor's bankruptcy if already in bankruptcy proceedings.

In the scenario below, both the sponsor and Manufacturer C have defaulted.

EXHIBIT 5

Illustrative Default Scenario

Entity	Assumed Rating	Assumed Default Horizon	*Entity Default?*
Sponsor	B1	5 years	*Yes*
Manufacturer A	A3	1 year	*No*
Manufacturer B	Baa3	1 year	*No*
Manufacturer C	B1	1 year	*Yes*

Source: Moody's Investors Service

Disposal Value of the Fleet

To calculate the fleet disposal value for vehicles sold in the used-vehicle market, we may simulate correlated[22] stochastic net book value haircuts that follow a beta distribution, or assume fixed haircuts[23] to apply to the vehicles' net book value. The haircut we apply depends on the vehicle type (program or non-program) and whether the vehicle manufacturer has defaulted. In the example below, we show how we apply simulated haircuts in our analysis.

Illustrative Example

Disposal value haircut assumptions for program and non-program cars

We base our net book value haircut assumptions on our historical data analysis of used-vehicle market values as well as other qualitative factors described in "Disposal Value of the Fleet." The following is our method for determining the net book value haircuts using simulated values:

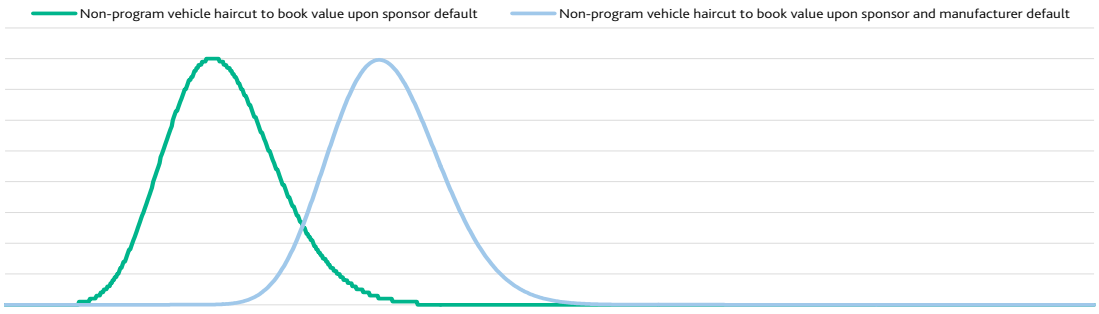
FOR NON-PROGRAM VEHICLES

» When the sponsor defaults, we simulate the haircut applied to all non-program vehicles following a beta distribution to account for the difference between the book value and the actual sale price of the vehicles.

» If the manufacturer also defaults, we add a fixed haircut to account for the damage to the brand reputation or customers' concerns about the availability of parts and services. As a result, the simulated haircut distribution in cases where the manufacturer has defaulted shifts by that additional amount (see Exhibit 6).

EXHIBIT 6

Example of Simulated Non-Program Vehicle Haircuts



Source: Moody's Investors Service

[22] We typically assume the simulated haircut we apply to each vehicle is 100% correlated with the haircuts we apply to all other vehicles in the fleet. Compared to assuming independent haircuts, larger or smaller haircuts are more likely to occur together in a given simulation when assuming correlated haircuts.

[23] In our analysis, we may alternatively use a "certainty-equivalent" fixed haircut value, which would typically result in the same rating for a given security had we simulated a full distribution of haircut values. The fixed haircut would differ depending on the target security rating.

FOR PROGRAM VEHICLES

» When the sponsor defaults but the manufacturer does not, we typically apply a fixed haircut of 10% to the net book value of program vehicles to account for the lower buyback price the manufacturer will pay because the vehicles will be turned back several months after the sponsor's default.

» If the manufacturer also defaults, we apply a simulated haircut that approximates the haircut distribution we apply to non-program vehicles when the manufacturer has defaulted.

Mean and standard deviation values

Depending on the transaction, we typically assume a mean haircut in the range of 15%-25% for non-program cars from non-defaulted manufacturers sold in the used-vehicle market. In certain scenarios, we may consider a higher mean haircut outside the range to reflect (1) greater uncertainty of current and future used-car market conditions, including vehicle prices and volumes, and/or (2) vehicle depreciation over a potentially extended liquidation timeline. For program and non-program vehicles from defaulted manufacturers, the resulting average haircut range is 30%-40%. We consider the following factors when forming our mean haircut assumption:

» Our analysis of available historical data on used-vehicle prices, where we reviewed short-term price changes for vehicle types typically found in rental fleets.

» Our assessment of the time it will take the disposition agent to liquidate the vehicle fleet, during which the vehicles are likely to depreciate further (see Appendix 4).

» The size of the sponsor's fleet compared with the size of the appropriate portion of the region's overall used-vehicle market. Liquidating a large rental fleet could have a negative impact on used-vehicle prices. We assume that if the size of the rental fleet composes a higher percentage of the used-vehicle market, the impact on used-vehicle prices would be larger.

» The risk of losses to the fleet from vehicle theft or damage

» Our assessment of the likelihood that defaulted manufacturers will continue operating (e.g., in a reorganization) or exit the regional market. For regions where we assume there is a higher likelihood of manufacturers exiting the market, we apply higher haircuts to the net book values of program and non-program vehicles when both the sponsor and manufacturer have defaulted.

When applying simulated haircuts to the net book value of the vehicles, we generally use the same standard deviation assumption regardless of the type of vehicle being sold (program or non-program). We typically assume a standard deviation in the range of 5%-10%, depending on the transaction. We consider the following factors when forming our standard deviation assumption:

» Our analysis of available historical data on used-vehicle prices, where we reviewed price changes covering various periods, liquidation time horizons, and vehicle types.[24]

» Our analysis of available historical data on the sponsor's vehicle dispositions.

» How net book value is calculated according to the legal documentation for a specific transaction. As described under "Future Vehicle Book Values," the sponsor determines the net book value of the securitized fleet subject to the parameters set forth in the transaction documentation. We assume stricter provisions concerning the determination of the fleet's net book value, such as a higher minimum depreciation rate and stringent market value and disposition tests, would result in lower volatility around the mean haircut because the fleet's net book value is more likely to reflect – or understate – the actual market value of the fleet.

[24] We based our historical data analysis of used-vehicle prices on a diversified mix of vehicle types (e.g., SUV, sedan, etc.). The analysis was adjusted to account for lower depreciation in an environment where vehicles are not likely to be driven much. For rental fleets with significant concentrations in a single vehicle type, we may assume higher volatility.

Exhibit 7 shows the haircuts that result from our example scenario:

EXHIBIT 7

Illustrative Haircut Values Upon Lease Default

	Net book value haircut applied to:	Haircut
1	Program cars from non-defaulted manufacturers (b.1 above)	10%
2	Non-program cars from non-defaulted manufacturers (a.1 above)	20%
3	Program cars from defaulted manufacturers (b.2 above)	35%
4	Non-program cars from defaulted manufacturers (a.2 above)	35%

Source: Moody's Investors Service

We apply the same haircut (simulated or fixed) to all vehicles in the applicable category above, as shown in Exhibit 8.

EXHIBIT 8

Net Book Value Haircuts by Manufacturer

	Default?	Program Percentage	Net Book Value Haircut Applied to Program Cars	Non-Program Percentage	Net Book Value Haircut Applied to Non-Program Cars
Manufacturer A	No	30%	10%	25%	20%
Manufacturer B	No	40%	10%	50%	20%
Manufacturer C	Yes	30%	35%	25%	35%

Source: Moody's Investors Service

The net book value haircut we apply to the program portion of the fleet is the average haircut weighted by the manufacturer program percentage:

$$Program\ Net\ Book\ Value\ Haircut: 30\% * 10\% + 40\% * 10\% + 30\% * 35\% = 17.5\%$$

Similarly, the net book value haircut we apply to the non-program portion of the fleet is the average haircut weighted by the manufacturer non-program percentage:

$$Non - Program\ Net\ Book\ Value\ Haircut: 25\% * 20\% + 50\% * 20\% + 25\% * 35\% = 23.75\%$$

Finally, the total pool loss in this scenario combines the total program and non-program net book value haircuts:

$$Total\ Fleet\ Loss: 50\% * 17.5\% + 50\% * 23.75\% = 20.625\%$$

Expected Loss of the Securities

For each model simulation, we calculate the total pool loss, if any, and then, considering the capital structure, determine the extent of any investor loss. We then calculate the average investor loss across all the simulations to determine the expected investor loss.

Our Idealized Cumulative Expected Loss Rates represent the benchmark expected losses associated with each rating category over various time horizons.[25] We assess the model output by comparing the securities' calculated expected loss and horizon to these benchmarks. We expect the calculated expected loss to be consistent with the benchmark expected loss for that rating/horizon combination.

[25] 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.

Appendix 2: Example of Assumed Fleet Composition Construction

In this appendix, we present an example of an assumed fleet composition we may create based on historical fleet data. Exhibit 9 is a simplification of the historical fleet composition data that transaction sponsors typically provide. The last three columns represent various non-contiguous points in time.

EXHIBIT 9

Historical Time Series Non-Program Fleet Composition Provided by Sponsor

Manufacturer	Current Rating	Time 5 Percentage	Time 10 Percentage	Time 20 Percentage
Manufacturer 1	A2	6.5%	8.0%	1.5%
Manufacturer 2	Aa2	11.0%	10.0%	10.0%
Manufacturer 3	A3	0.5%	0%	1.5%
Manufacturer 4	A1	2.0%	0%	7.0%
Manufacturer 5	A3	1.0%	0%	1.5%
Manufacturer 6	Baa2	16.5%	18.0%	14.0%
Manufacturer 7	Baa2	22.5%	2.0%	23.0%
Manufacturer 8	Baa3	7.0%	10.0%	7.0%
Manufacturer 9	Baa1	5.0%	2.0%	1.0%
Manufacturer 10	Baa1	4.0%	25.0%	2.0%
Manufacturer 11	Ba2	10.0%	10.0%	11.0%
Manufacturer 12	B1	9.5%	10.0%	15.0%
Manufacturer 13	B2	1.0%	1.5%	1.5%
Manufacturer 14	Ba3	3.0%	2.0%	2.5%
Manufacturer 15	Ba2	0.5%	1.5%	1.5%

Source: Moody's Investors Service

We determine the makeup of our assumed fleet based on the current ratings of the manufacturers and an analysis of the historical information provided by the sponsor. In particular, we closely review periods in which the number of manufacturers in a given credit profile was highly concentrated or periods in which the concentration of a single manufacturer was particularly high. We apply a qualitative judgment to create and maintain these assumed fleet compositions for sponsors over time, ensuring they reflect a reasonably stable, conservative view of the sponsor's potential fleet. Exhibit 10 shows an example of an assumed fleet composition we may create using the historical information presented in Exhibit 9.

EXHIBIT 10

Example of Manufacturer Non-Program Fleet Composition Input Constructed from Exhibit 9

	Percentage	Number of Manufacturers*	Modeled Rating
Aa/A Profile	15%	2	A3
Baa Profile	55%	3	Baa3
Ba/B Profile	30%	2	B1
Caa Profile	0%	0	Caa2

* Equally split among manufacturers in each "Profile."

Source: Moody's Investors Service

We qualitatively assess a number of factors when creating our assumed fleet compositions to address the risk of the actual fleet vehicle composition migrating to weaker credit quality levels and/or higher concentration levels.

For example, when we create the Aa/A profile in Exhibit 10, we may consider that, historically, the fleet composition has consisted mainly of two larger Aa- or A-rated manufacturers (Manufacturers 1 and 2 at

time 5 and time 10 and Manufacturers 2 and 4 at time 20). Because of this, we may disregard the remaining Aa- or A-rated manufacturers shown in Exhibit 9, which have historically made up only a small percentage of the fleet.

Furthermore, we assume an A3 manufacturer rating for both manufacturers in the Aa/A profile of Exhibit 10, which is consistent with the overall credit profile but lower than the current rating of Manufacturers 1, 2, and 4. Grouping the fleet composition by credit quality profile (rather than by specific manufacturers) allows for more stability in our composition assumptions over time despite the revolving nature of rental car transactions.

Exhibit 11 shows that our assumed pool may have higher default risk and lower diversification than the historical fleet. This accounts for the variability in fleet composition over time because the exact fleet composition at the time of disposition is uncertain when a rating is assigned.

EXHIBIT 11

Comparison of Actual Fleet Compositions vs. Assumed Pool

	Time 5	Time 10	Time 20	Assumed Pool*
WARF[26]	653	668	785	1029
Manufacturer Count	15	12	15	7

*from Exhibit 10

Source: Moody's Investors Service

[26] The weighted average rating factor (WARF) reflects the default risk of a mix of manufacturers using the Moody's Rating Factor associated with the manufacturer's rating. For more information, see our methodology for rating collateralized loan obligations. A link to a list of our sector and cross-sector methodologies can be found in the "Moody's Related Publications" section.

Appendix 3: Effectiveness of Collateral Value Tests

Our haircut to the fleet's net book value is partially a function of the limited effectiveness of the collateral value tests – the mark-to-market test and the disposition test – which are typical structural features in most rental vehicle securitizations.

The tests are designed to mitigate the risk that the market value could fall below the net book value. Although these tests are helpful, they do not completely insulate a securitization from the risk that it will incur losses if the sponsor defaults and the disposition agent liquidates the vehicles.

This appendix focuses on how these tests work up to the point when a liquidation event is triggered and explains how we consider the tests in our analysis.

Future Vehicle Book Values

In rental vehicle securitizations, the advance rate is a function of the collateral's net book value. Over time, the sponsor's actions can affect the net book value because the sponsor decides how to depreciate the vehicles. To limit the sponsor's discretion, the transaction structures typically include minimum depreciation rates.

A sponsor in financial distress may maximize the financing from a securitization by depreciating the vehicles at the minimum rate. If a sponsor does not depreciate the vehicles adequately, the market value could fall below the net book value, potentially exposing investors to losses upon a fleet liquidation. In our analysis, we derive the magnitude of this component of the haircut based on (1) the minimum depreciation rate required by the transaction documents, and (2) the maximum potential timeframe over which a sponsor could under-depreciate the vehicles before a liquidation event occurs.

Mark-to-Market and Disposition Test Mechanisms

Breaching a **mark-to-market** test could result in vehicle liquidation. The mechanics of such a test could delay and limit the effectiveness of the test. For example:

- A servicer typically measures the mark-to-market test as an average over three months.
- The mark-to-market test typically relies on the most recent third-party data (such as NADA or Black Book in the US) on used-vehicle values, which may be up to one month old.
- The issuer typically has two to five days, depending on the transaction, to cure an enhancement deficiency before triggering an amortization event. After that, a liquidation event is triggered either immediately or after 30 days, depending on the transaction.

Therefore, a sponsor could depreciate the vehicles at a minimum rate for about three to five months before a mark-to-market test triggers a liquidation event. In our disposal value haircut assumption, we account for this potential deviation between a vehicle's net book value and market value during that period.

A **disposition test** is measured as an average over three "measurement months." There is typically a minimum number of vehicle sales before a measurement month is recorded. During a period of low vehicle sales, several calendar months could pass before a measurement month is recorded. Compared to the mark-to-market test, which is measured over three calendar months, the disposition test could allow more time for the market value to fall below the net book value if the cars are under-depreciated.

Both collateral value tests have limitations, and the relative effectiveness of each test varies depending on the scenario. A mark-to-market test can be more effective in monitoring market value risk under stress

scenarios such as a sponsor default, while a disposition test could be more effective in monitoring market value risk in normal situations. For this reason, we calculate the magnitude of the component of the haircut that relates to a possible deviation of net book value from the market value up to a sponsor default by reference to the mark-to-market test instead of the disposition test.

In normal situations and as long as vehicles sold are representative of the securitized fleet, the disposition test is a valuable measurement of a fleet's market value because it is based on actual sale proceeds.

In a stress scenario, we expect that a monthly updated mark-to-market test captures the market value deterioration of a fleet's non-program portion. At the same time, the servicer might not recalculate the disposition test if it has not sold the specified minimum number of vehicles over a certain period.

Other reasons why a disposition test would not capture the fleet value include:

» The composition of the disposed subset of the fleet may differ from the composition of the remaining fleet, with a market value loss on the remaining fleet being greater than that on the vehicles sold. In particular, ahead of a sponsor default, in a scenario in which the sponsor's business is deteriorating and used-car prices are declining rapidly, the sponsor may have an incentive to select vehicles on which it will not realize a loss for the purpose of the disposition test, rendering the disposition test ineffective.

» The disposition test, based on an average across measurement months, will only capture the average deterioration in market values over that period even though the fleet market value will be lower in a declining market.

Appendix 4: Payment Interruption Period Following a Sponsor's Bankruptcy

One of our assumptions concerns the time it would take for ABS investors to take control of vehicles in a fleet and force a liquidation upon a sponsor default (and manufacturer default, in the case of program vehicles). The length of this period is important because it determines the additional depreciation that the vehicles experience prior to liquidation and the amount of interest that accrues until investors receive vehicle disposition proceeds.

In the US, in the event of a sponsor's bankruptcy, the operating lease for its rental car fleet likely would be considered an executory contract of the sponsor's bankruptcy estate, since the operating lease requires mutuality of performance by its parties: The sponsor, as lessee, pays the issuer monthly lease payments in exchange for leasing the issuer's rental car fleet to use in the sponsor's daily rental car operations. As an executory contract, the bankrupt sponsor, as the lessee, would have the right to either assume or reject the operating lease. Additionally, a bankruptcy court may approve interim resolutions between the sponsor as lessee and the ABS investors to dispose of only a portion of the fleet vehicles or make a smaller lease payment than the contractual payment under the lease. The approved resolution may lead to a prolonged vehicle disposal timeline.

In a bankruptcy court proceeding, the lessee has a certain period to decide whether to affirm or reject the lease. If the lease is rejected, the sponsor is required to return the vehicles to the issuer. In the US, we expect the typical delay before a decision for affirmation or rejection to be at least 90 days for a Chapter 11 restructuring bankruptcy. During this delay period, monthly lease payments due from the bankrupt sponsor to the issuer and the issuer's legal right to forcibly dispose of vehicles may be interrupted, thereby reducing the cash flows necessary to pay the securities' scheduled interest. The transaction's liquidity amount covers this risk, as well as the vehicle disposal risk discussed below.

Once the legal issues are resolved, we expect it will take a minimum of three months to dispose of the vehicles pursuant to the terms in the program agreements honored by manufacturers or in the used-vehicle market. While the US used-car market is highly liquid, dispositions may be delayed owing to the logistics of marshaling a large fleet of vehicles from locations across the country. In US rental car ABS, liquidity is typically sized to cover at least six months of interest on the outstanding bond balance, plus other transaction expenses to cover cash flow shortfalls stemming from a combination of the sponsor's bankruptcy proceedings and the logistics of marshaling vehicles to liquidation. In certain situations, the disposition of the rental fleet may take longer than a few months. We usually look at several sensitivities around the disposition timeline to factor in that risk.

In other jurisdictions, the liquidation period may be shorter or longer. The jurisdiction's bankruptcy regime dictates when an issuer can gain control over the vehicles. In addition, the depth of the available channels to dispose of used vehicles affects the time a disposition agent needs to sell a large fleet at once.

Appendix 5: Different Structures Across Jurisdictions and US Legal Analysis

The legal structures used in rental fleet ABS, as well as the relevant laws, vary across jurisdictions, affecting the specific forms of the legal risks and, consequently, our analysis.[27] The key legal risks to investors arise either from the possibility that creditors outside the securitization may make a claim on the securitization assets or that the cash flows to investors may be delayed by a bankruptcy of the sponsor. In this appendix, we focus on US rental car ABS transactions as an example of legal analysis we conduct in specific jurisdictions.

In US rental car ABS, legal ownership in the vehicles backing a transaction resides with a bankruptcy-remote lessor or its nominees. In some US transactions, the lessor may also be the issuer of the ABS. If the lessor and the issuer are separate legal entities, the issuer usually makes a secured loan to the lessor, backed by the vehicle collateral. In any case, the lessor leases the vehicles under an operating lease to the transaction sponsor (a US rental car company) as the lessee. Although the sponsor may further lease vehicles to its operating subsidiaries, it remains liable to the lessor for its operating lease payments, regardless of whether its subsidiaries make their lease payments.

Specifically, our US legal analysis focuses on risks posed by: (1) the potential bankruptcy of the transaction sponsor, (2) the potential bankruptcy of the securitization vehicle, and (3) the potential bankruptcy of a qualified intermediary (QI) established by the rental car company to provide deferred tax benefits on the disposition of its fleet.[28] The first two risks are common across jurisdictions, while the last is unique to the US.

Bankruptcy of the Sponsor

In US rental car ABS, we assess any legal risks relating to the potential bankruptcy of the sponsor. In particular, we consider whether:

» the operating lease is a "true lease," rather than a secured financing;

» the vehicles are subject to a perfected security interest in favor of the collateral agent; and

» a court may pool the assets of the lessor or issuer with the bankruptcy estate of its sponsor (often referred to as "substantive consolidation").

The extent to which a transaction is protected against these risks determines the potential for the securitization ratings to exceed the rating of the sponsor.[29]

True Lease

In US rental car ABS, the operating lease is intended to be a true lease so that the lessor remains the owner of the vehicles leased thereunder. Provided the transaction is properly structured, we assume the operating lease is a true lease rather than a secured financing, and therefore, in the event of the bankruptcy of the rental car company, the operating lease's vehicles will be excluded from the bankruptcy estate.

[27] For example, European rental car ABS transactions are likely to be multi-jurisdictional, where affiliated rental car leasing companies, each located in different legal jurisdictions (but all subsidiaries of the same holding company), could sponsor the same ABS issuance.

[28] For more information, see our cross-sector methodology describing bankruptcy remoteness criteria for special purpose entities 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.

[29] Two previous bankruptcies of rental car companies provide some guidance on how the legal structures may protect ABS investors. In both cases, which were Chapter 11 reorganization filings, the bankrupt sponsors and their operating subsidiaries continued to manage and operate their rental car companies as debtors in possession (DIP). Both companies accepted their executory contract obligations under the operating leases that supported their sponsored rental car ABS. The bonds were fully repaid prior to their legal final maturity. The bankrupt sponsors were: (1) ANC Rental Corp. (ANC), the parent of the rental car operating companies, Alamo Rent-A-Car, LLC and National Car Rental System, Inc., which filed on 13 November 2001, and (2) Budget, which filed on 30 July 2002.

Perfection

State law governs the means for perfecting a security interest in a vehicle. Most state motor vehicle regulations provide for certificates of title with the notation of the lienholder against the vehicle. Lienholders of record on certificates of title are typically the securitization's collateral agent, acting on behalf of the ABS investors. US rental car ABS transactions typically limit the number of vehicles in the fleet without the collateral agent recorded on the vehicle title as a lienholder. Our analysis assesses the potential portion of the fleet not subject to a perfected lien on the vehicles.

Substantive Consolidation

In the US, we generally assume the issuer's/lessor's assets and liabilities will not be pooled with those of the sponsor if the issuer/lessor is organized as a bankruptcy-remote special purpose entity.[30]

Bankruptcy of the Securitization Entity

If the issuer is organized as a bankruptcy-remote special purpose entity, we view the risk of a bankruptcy filing by or against it as so low that it has no rating impact.

Bankruptcy of the Qualified Intermediary

US rental car companies generally maintain like-kind exchange (LKE) programs to provide deferred tax benefits on the disposition of their fleets. As long as the disposition proceeds are used to purchase replacement vehicles used in their rental car company operations, gains and losses on the disposition of used vehicles will not be recognized for tax purposes. LKE is allowed under Section 1031 of the Internal Revenue Code of 1986 and related US Treasury regulations. The tax code requires that the exchange be effected through a qualified intermediary (QI) that is an independent third party unrelated to the rental car company.

Under a LKE program, when the vehicles securing rental car ABS are disposed of, the proceeds go into an escrow account or trust account maintained by the QI. Once the replacement vehicles are identified, the proceeds are disbursed to pay for them. During the period when the disposition proceeds stay in the exchange account, the ABS investors are exposed to the risk of a QI bankruptcy. This is because, if the QI files for bankruptcy during this period, the money in the exchange account may be subject to a bankruptcy stay; if this happens, the funds in the exchange accounts will not be available to buy new vehicles or to pay for interest or principal on the ABS until the stay is lifted.

ABS investors may be subject to additional operational risks of the QI. Funds may be misdirected, or the QI may fail to perform its duties. Our legal analysis examines the extent to which the operational risk posed by the QI is mitigated through, for example, (1) structuring the QI as a bankruptcy-remote entity, (2) a high rating of the QI (or its parent), and (3) transaction rating triggers that, if breached, lead to the replacement of the existing QI with a new qualifying QI. Our assessment also considers any other structural features included in the transaction to mitigate QI operational risk.

[30] For more information, see our cross-sector methodology describing bankruptcy remoteness criteria for special purpose entities 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.

Appendix 6: Rental Truck ABS

Our approach to rating rental truck ABS is generally the same as our rental car approach. In this section, we highlight the key differences between rental car and truck ABS and describe the adjustments we made to account for those differences.

In contrast to rental car ABS transactions, which typically have revolving and amortization periods, rental truck ABS are typically structured with a static vehicle pool and amortizing principal. This is because sponsors tend to keep trucks in their fleet longer (from 5 to 10 years) than cars (only 6 to 18 months). As a result, for a transaction structured with a static vehicle pool, we use a Monte Carlo simulation model that determines sponsor and manufacturer default timing, the fleet book value and disposal proceeds from the projected fleet mix at the time of sponsor default, the potential losses for investors and the weighted average life of the securities. Our model then benchmarks the average losses to investors across all simulations against our Idealized Expected Loss table.[31]

To analyze the disposal value of a rental truck fleet, we consider the following factors:

- **Disposal Value Risk:** For rental car ABS, we derive our assumptions for stressed market value depreciation from historical, market-specific, used-car price data. Because truck sales occur less regularly than car sales and the number of trucks traded in the market is much smaller than cars, we have fewer data points to observe the historical depreciation of trucks. The variability around the values is also greater compared to cars. In addition, rental truck transaction structures typically include disposition tests but not mark-to-market tests, which means there is a somewhat greater likelihood that truck net book values will diverge more from market values than car net book values. Because of these factors, the overall haircut we apply to the net book value of a truck fleet is typically larger than the one we apply to cars.
- **Fleet Age:** For transactions such as static rental truck ABS, in which the fleet's average age changes significantly over time, we may adjust our assumptions to account for the impact of age when we estimate the fleet disposal value. For example, the overall haircuts we apply to a truck fleet's net book value are generally larger for newer trucks than for older trucks because a truck's book value (using straight-line depreciation) and market value tend to converge towards the end of the truck's useful life.
- **Depreciation resulting from a manufacturer bankruptcy:** A manufacturer bankruptcy will have less impact on the resale value of trucks than cars. The brand is generally less of a consideration for truck owners than for car owners, and parts and services for trucks are also typically less specific to a given manufacturer. Thus, for rental trucks, we usually apply a lower additional disposal value haircut in the event of a manufacturer bankruptcy than we do for rental cars.
- **Risk of manufacturer default:** The typical structural features of rental truck transactions make them more sensitive to the risk of manufacturer default. In particular, owing to the static nature of rental truck fleets, vehicles from a bankrupt manufacturer will likely remain in a fleet for a longer period than cars remain in fleets in rental car transactions. As a result, in rental truck transactions, we typically evaluate the risk of a manufacturer's bankruptcy using a longer horizon than we employ for rental cars. In each run of the simulation, the time horizon for a manufacturer default is the month when the sponsor defaults, plus the time it takes to liquidate the vehicles.

[31] 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.

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 is available here.

» contacts continued from page 1

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